

AI

ACROSS THE SPECTRUM
Education, Economy & Science

A
NATIONAL
CONFERENCE



Souvenir



ORGANIZERS

ARTS, COMMERCE AND SCIENCE COLLEGE

Arvi, Distt. Wardha. (MS)
Accredited 'B' Grade by NAAC
(Affiliated to RTM Nagpur University)



In Collaboration With
Narayanrao Kale Smruti Model College
Karanja (Gh.), Distt. - Wardha (MS)
(Arts, Commerce and Science)
(Affiliated to RTM Nagpur University)

7th February 2026, Saturday.



Vision of the institution

'Widening the Horizons of Knowledge'



Mission of the institution

To nurture the culture of quality education and strengthen the youth to be the part of nation building movement'





Multi-Disciplinary One Day National Conference on

AI Across the Spectrum: Education, Economy & Science

(AIASEES-2026)

07th February 2026

Organized By

Krishak Education Society, Arvi

ARTS, COMMERCE AND SCIENCE COLLEGE

Arvi, Distt.- Wardha, M.S.-442201

NAAC Re-Accredited 'B' Grade (CGPA 2.42)

In Collaboration with

Bharat Education Society, Arvi

NARAYANRAO KALE SMRUTI MODEL COLLEGE

Karanja (Ghadge), Distt.- Wardha, M.S.-442203

NAAC Re-Accredited 'B+' Grade (CGPA 2.58)

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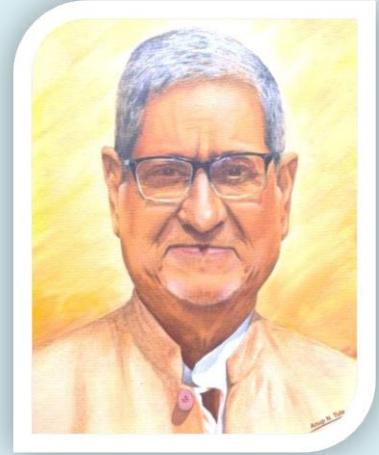
Technician

Dept. of Computer Science

Our Inspiration



**Late Shri. Narayanrao
alias Dadasaheb Kale**



**Late Adv. Shri. Diliprao
alias Bhaiyasaheb Kale**



Adv. Smt. Shobha D. Kale
President,
Krishak Education Society, Arvi



Shri. Pradip N. Kale
Secretary,
Krishak Education Society, Arvi

About the Conference

Artificial Intelligence (AI) is rapidly reshaping every facet of human life. The conference aims to provide a multi-disciplinary platform for researchers, academicians, industry professionals and students to explore the transformative impact of AI across the spectrum-specifically focusing on its applications, challenges and future trajectory in Education, Economy and Science.

Join us to delve into cutting-edge research, engage in insightful discussions and foster collaborations that will shape the future of an AI-driven world.

About College

In the year 1963, an admirer of education, founder president Late Narayanrao Kale and his crony founded the institution now known as “Arts and Commerce and Science College” at Arvi. The Krishak Education Society, Arvi was established in 1965 by Late Narayanrao Kale, a stalwart of co-operative sector of Maharashtra. This society runs four pre-primary schools, four high schools, one Junior college and one senior college. Presently Adv. Mrs. S. D. Kale is the Chairman of this society.

Primarily in 1963 only Arts and Commerce faculties were started. In 1965 the college received government grants. In 1975, the college started its Junior college in Arts and Commerce faculties. In 1986, first post-graduation program i.e. M. Com. was started. In 1989, Arts and Commerce faculties got permanent affiliation of Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur (Formerly Nagpur University). In 1990, the college was recognized by UGC as 2(f) and 12 (B) standards. In the session 1992-93, Science faculty was started for U.G. level. In the year 1997-98 subject English Literature was added to Arts faculty.

During 2000-01 to 2010-11, Computer Science (U.G.), M.A. (Marathi, Political Science, Home Eco.), M.Sc. (Computer Science, Chemistry), B. A. Additional sections and some professional courses / subjects like PGDCCA, MIS and IT, Biotechnology, Fashion Designing, B.B.A., DHNT, Music etc. are started. The certificate courses added another feather in the cap of college.

The college underwent first accreditation in 2004, the college achieved ‘B’ grade. In the second phase of accreditation in 2011, the college retained ‘B’ grade (with new methodology CGPA 2.29). The college underwent third accreditation in 2017 and came out successfully with B+ (with CGPA 2.53). The College has adequate physical infrastructure to run the academic program efficiently in an area measuring five acres. The total built-up area of the college is 6028.68 Sq.m.

In the session 2024-25, the College received a Grant of ₹5 Crore under the PM-USHA Scheme. Under this grant, the College Plans to develop a Chemistry Laboratory, an Auditorium, and a few Classrooms, along with the renovation of Computer Laboratory and related Infrastructure.

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"Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017)"

Re-accredited by NAAC "A" Grade

डॉ. मनाली मकरंद क्षीरसागर
कुलगुरु

Dr. Manali Makarand Kshirsagar
Vice-Chancellor

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Dr. Manali Makarand Kshirsagar
Vice-Chancellor,
Rashtrasant Tukadoji Maharaj, Nagpur University Nagpur



I am glad to learn that Arts, Commerce and Science College, Arvi, District Wardha, in collaboration with Narayanrao Kale Smruti Model College, Karanja (Gh.). is organizing a One-day National Conference on the theme "AI Across the Spectrum: Education, Economy and Science" (AIASEES-2026) on 07 February 2026. I extend my sincere appreciation to the institution for initiating academic dialogue on a subject of such contemporary and far-reaching significance.

Artificial Intelligence is rapidly transforming the way knowledge is generated, disseminated and applied. In the field of education, it has the potential to personalize learning, enhance research capabilities and redefine pedagogical practices. At the same time its influence on economic systems and scientific innovation calls for thoughtful examination, ethical awareness and interdisciplinary understanding. Academic forums like this conference are essential for developing a balanced perspective that combines technological advancement with human values.

By bringing together educators, researchers and students this conference creates an opportunity to reflect on the challenges and possibilities associated with AI across diverse domains. I am confident that the deliberations will promote critical thinking, encourage collaborative research and inspire participants to engage responsibly with emerging technologies.

I congratulate the organizing committee for their vision and dedicated efforts in planning this event. I wish the conference a successful and meaningful completion and hope it contributes significantly to academic excellence and societal progress.

Dr. Manali Makarand Kshirsagar



सुमित वानखेडे
आमदार
४४ - आर्वी विधानसभा मतदारसंघ

निवास: गौरक्षण वार्ड, आर्वी, ता. आर्वी., जि. वर्धा, ४४२२०१ | कार्यालय : पदावती चौक, आर्वी, ता. आर्वी., जि. वर्धा, ४४२२०१
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Sumit Wankhede
MLA,
Arvi Constitution, Maharashtra State



I am pleased to convey my best wishes to the organizers of the One-day National Conference on "AI Across the Spectrum: Education, Economy and Science" (AIASEES- 2026) hosted by Arts, Commerce and Science College, Arvi, District Wardha in collaboration with Late Narayanrao Kale Smruti Model College, Karanja (Gh.), on 07 February 2026.

It is a matter of pride for my constituency that the college has organized such a conference in a rural area. Through this students and academicians of the region will benefit from the sharing of novel ideas.

In today's rapidly evolving world, Artificial Intelligence is playing a decisive role in shaping the future of learning, strengthening economic systems and accelerating scientific discovery. Initiatives like this conference help bridge academic knowledge with real-world applications and prepare our youth for emerging challenges and opportunities.

I commend the institution for choosing such a contemporary and impactful theme and am confident that the conference will stimulate insightful discussions and innovative thinking.

I wish the organizers and participants every success.

With warm regards,

Sumit Wankhede
Hon'ble MLA

Adv. Smt. Shobha Dilip Kale
President,
Krishak Education Society and
Bharat Education Society, Arvi, Dist. Wardha



It gives me immense pleasure to extend my heartfelt greetings and best wishes to the organizers, scholars, academicians and students participating in the One-day National Conference on “AI Across the Spectrum: Education, Economy and Science” (AIASEES-2026), Organized by Arts, Commerce and Science College, Arvi, District Wardha, in collaboration with Narayanrao Kale Smruti Model College, Karanja (Gh.), on 07th February 2026.

Artificial Intelligence has emerged as a powerful force shaping the future of education, economic growth and scientific research. This national conference is a commendable initiative that provides an excellent platform for intellectual exchange, innovation and interdisciplinary dialogue on this transformative technology.

I congratulate the Principal, the organizing committee and all staff members for their sincere efforts in successfully conducting this academic event. I am confident that the deliberations and research outcomes of this conference will contribute meaningfully to knowledge advancement and societal development.

I wish the conference great success and every participant a rewarding academic experience.

Best Wishes!

A handwritten signature in purple ink that reads "Shobha D. Kale". The signature is written in a cursive style and is underlined.

President
Adv. Shobha D. Kale

Krishak and Bharat Education Society, Arvi

Organizer

Dr. Ravindra N. Sontakke

Principal

Arts, Commerce and Science College Arvi



It is a moment of pride that Arts, Commerce and Science College, Arvi, District Wardha, in collaboration with Narayanrao Kale Smruti Model College, Karanja (Gh.) is organizing a One-day National Conference on the theme “**AI Across the Spectrum: Education, Economy and Science (AIASEES–2026)**” on 07 February 2026.

Artificial Intelligence has become a driving force behind innovation and transformation across education, economic systems and scientific research. The theme of this conference is highly relevant as it encourages a comprehensive understanding of AI and its applications in diverse disciplines. Such academic initiatives are essential for preparing students to meet the demands of an increasingly technology-driven world.

As our institution is situated in a rural region this conference assumes special significance. It provides students with a rare and valuable opportunity to gain exposure to national-level academic discourse without the constraints often faced by learners in rural areas. Participation in this conference will help students develop essential academic and professional skills including critical thinking, problem-solving, research orientation, analytical reasoning, scientific communication and digital literacy.

Through paper presentations, interactive sessions and expert lectures. Students will enhance their confidence, presentation abilities and understanding of emerging technologies. Exposure to interdisciplinary perspectives on Artificial Intelligence will further contribute to skill enhancement, innovation and employability, thereby aligning student learning outcomes with contemporary academic and industry requirements.

I sincerely appreciate the efforts of the organizing committee, faculty members and supporting staff for their dedication to promoting academic excellence and student-centered learning. Their commitment reflects the institution’s vision of empowering rural youth through skill-based education and meaningful academic engagement.

I am confident that AIASEES–2026 will serve as a platform for intellectual enrichment, skill development and future research initiatives. I extend my best wishes for the grand success of the conference.



Principal

Dr. Ravindra N. Sontakke

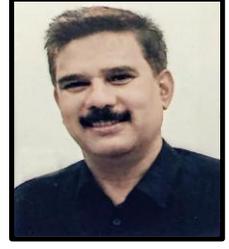
Arts, Commerce and Science College, Arvi

Organizer

Dr. Sanjay P. Dhanwate

Principal

Narayanrao Kale Smruti Model College Karanja(Gh.)



It is a matter of great pleasure to note that Arts, Commerce and Science College, Arvi, District Wardha, in collaboration with Narayanrao Kale Smruti Model College, Karanja (Gh.) is organizing a One-day National Conference on the theme “**AI Across the Spectrum: Education, Economy and Science (AIASEES–2026)**” on 07 February 2026.

In an age where Artificial Intelligence is rapidly influencing every sphere of human activity, the relevance of this conference cannot be overstated. The theme encourages thoughtful exploration of how AI is reshaping learning environments, driving economic progress and supporting scientific innovation. Such academic platforms are essential for developing informed perspectives on emerging technologies and their responsible use.

This collaborative initiative reflects the shared commitment of both institutions to promoting quality higher education and research culture. The conference will serve as a valuable forum for academicians, researchers and students to interact deliberate and contribute to meaningful academic discourse. It is particularly beneficial for young learners, as it enhances their analytical abilities, research orientation and awareness of contemporary technological developments.

I appreciate the sincere efforts of the organizing committee and faculty members for their dedication in bringing together scholars from diverse disciplines. I am confident that this conference will inspire new ideas, strengthen academic collaboration and leave a lasting impact on all participants.

I extend my best wishes for the successful conduct of **AIASEES–2026**.

A handwritten signature in black ink, appearing to read 'Sanjay P. Dhanwate'.

Principal

Dr. Sanjay P. Dhanwate

**Narayanrao Kale Smruti Model College
Karanja (Gh.)**

Convener

Dr. Amar M. Sote
Head, Dept. of Computer Science



Arts, Commerce and Science College, Arvi in collaboration with Narayanrao Kale Smruti, Model College, Karanja(Gh.) is honored in hosting the National Conference on “**AI Across the Spectrum: Education, Economy and Science**”. The themes of conference is to at most importance in present national context and will indeed be a memorable event in the history of the both the colleges.

After pandemic our day to day life is very much changed and we are witness of how we are being slave of technologies, especially computers technology. Now days these technologies are mostly used Artificial Intelligence for faster process and pre accurate result. Everyone and everywhere AI is widely used.

In education system applicability of AI is very high not only in science and technology but also humanities and commerce. Keeping in view the applicability of AI in higher education and research it becomes vital for all the peoples, who are using the technology in their teaching, learning and research.

I am pleased to put a record over 400 delegates will be attending the conference from all over the country. The event is further aimed at providing a young researcher, students and teacher to interact with eminent personalities and share their ideas. More than 100 abstract are accommodated in our conference different themes.

During the conference Prof. Dr. Ajay Kushwaha, Professor, Department of Computer Science and Application, Sharda School of Computing Science and Engineering, Sharda University, Noida, Delhi will deliver a keynote address and Dr. Ashish Sasankar, Principal Indraprastha New Arts, Commerce and Science College, Wardha and Dr. Tushar Choudhary, Professor, Department of Commerce, S. K. Porwal College, Kamptee will be invited for Invited talk. These talk cover all the themes of our conference. This will facilitated the disseminates of knowledge and understanding the concept of Artificial Intelligence.

I am thankful to respected Dr. R.N. Sontakke, Principal of our College and respected Dr. Sanjay Dhanwate, Principal N.K.S. Model College Kanranja(Gh.) and all staff members of both colleges. For providing necessary facilities, financial help co-operates and guidance for this conference. On behalf of organizing committee and my own half of express my deep sense of gratitude, sincere thanks to respected management and other dignities for their best wishes. Thanks are also due to our National and Local Advisory committee for their thought provoking interventions and suggestions.

I must acknowledge the strong and active support received from Mr. Nagesh Khobragde, Organizing Secretary of the Conference. This event would not have been possible without the relentless efforts of all the teaching and non-teaching staff of both the college and organizing committee. I thank them all from the bottom of my heart.

Finally, on behalf of organizing committee, I extend heartiest welcome to all the delegates and hope that the deliberations during the conference will be highly useful to all of them. I wish all the delegates a very comfortable and enjoyable environment in the conference.

A handwritten signature in blue ink, appearing to be 'AS', written in a cursive style.

Convener

Dr. Amar M. Sote

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KEYNOTE ADDRESS

AI with Impact: Shaping Education, Economy, and Science Responsibly

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Objectives

To present the evolution of AI from traditional software systems to intelligent and agent-based models.

To demonstrate how AI is transforming education, economic systems, and scientific research.

To highlight the importance of responsible design, ethical deployment, and governance of AI technologies.

Expected Outcomes

Participants will:

- Understand practical applications of AI across multiple sectors.
- Recognise ethical, legal, and social risks associated with AI deployment.
- Gain insights into institutional strategies for responsible and sustainable AI adoption.

Key Discussion Pointers

- Evolution of AI and foundation models
- AI-driven education and learning analytics
- AI in business, finance, and economic planning
- AI for healthcare, environment, and scientific discovery
- Ethics, transparency, and governance frameworks
- Role of academic institutions in AI readiness

Navigating the Future: A Practical Guide to AI in Education

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Abstract

As Artificial Intelligence (AI) experiences an unprecedented explosion in accessibility, the educational landscape faces both significant challenges and transformative opportunities. This paper explores the transition from AI "hype" to human-centered applications within the classroom. By focusing on teacher efficiency, student-centered tutoring, and the critical role of prompt engineering, we provide a roadmap for educators to integrate Generative AI (GenAI) responsibly while maintaining academic integrity.

1. Introduction: The "Elephant in the Room"

The sudden rise of AI has generated a spectrum of emotions among educators, ranging from excitement to skepticism and fear. AI is not a sentient entity or a replacement for human judgment; rather, it is a sophisticated prediction engine trained on massive datasets. The current goal for educational institutions is not instant mastery, but a structured effort to demystify these tools and make them work for, rather than against, the academic community.

2. The Landscape of Generative AI Tools

Educators now have access to a variety of generic AI tools designed for different interactive and generative tasks. These include:

- Gemini
- Copilot
- Claude
- ChatGPT
- You.com

3. Methodology: The Science of Prompt Engineering

To utilize these tools effectively, educators must master "Prompt Engineering"—the art of crafting inputs that yield high-quality outputs. A successful educational prompt is characterized by several critical factors:

- **Clarity and Focus:** The intent must be unmistakable.
- **Specificity:** Providing detailed context prevents vague results.
- **Structured Instructions:** Explicitly telling the AI what to do is essential.
- **Contextual Information:** Supplying the necessary data ensures the AI has the right components to work with.
- **Constraints and Accuracy:** Setting boundaries, such as word length and accuracy requirements, improves precision.

3.1 Essential Terminology for Educators

Using specific action words can significantly alter how an AI model assists in teaching tasks:

- **Persona Adoption:** Using the term **ACT LIKE** helps the AI adopt a specific professional viewpoint.
- **Workflow Optimization:** Educators can **ANALYZE WORKFLOW** to identify classroom inefficiencies.
- **Iterative Clarification:** Using **ASK BEFORE ANSWER** ensures the AI seeks missing information before generating a response.
- **Structural Guidance:** Words like **COLUMN**, **CREATE A LIST**, and **OUTLINE STEPS** help organize lesson materials.

4. Practical Applications in Education

4.1 AI as an Efficiency Engine for Teachers

AI serves as a powerful "first draft" partner for administrative and pedagogical tasks. It can generate lesson plan ideas, draft parent newsletters, and summarize meeting notes. One of its most potent uses is **Differentiation**: a teacher can prompt the AI to rewrite a complex historical text for a specific grade level, a task that traditionally takes significant time but can now be accomplished in seconds.

4.2 AI as a Student Tutor and Coach

For students, AI acts as a 24/7 Socratic tutor. It provides an immediate feedback loop for grammar and tone in writing drafts and serves as a brainstorming partner to overcome writer's block. The critical distinction here is using AI to help students *think*, rather than letting it do the thinking for them.

5. Challenges: Integrity and Ethics

The rise of AI necessitates a shift in how we view academic integrity. Because AI detection tools are often unreliable, the focus must shift from "product" to "process." This includes:

- Increasing in-class demonstrations and oral exams.
- Requiring personal reflection or local context that AI cannot replicate.

- Setting strict **Data Privacy** rules, ensuring no personally identifiable student information is entered into public models.

6. The Human Advantage

Despite its data processing brilliance, AI lacks empathy, emotional intelligence, and the ability to manage a complex classroom environment. It cannot inspire a student through personal connection or understand the unique cultural context of a community. The teacher remains the "expert pilot," with AI serving as the "co-pilot."

7. Conclusion

Integrating AI into education is a choice between ignoring the technology or modelling its responsible use. By starting with small, safe tasks and maintaining transparency with students, educators can leverage AI to free up time for the deeply human aspects of teaching.

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AI in commerce, management and social sciences is radically changing how companies run, compete, and add value. It is a transformative force rather than merely a tool. Artificial intelligence is no longer just a hypothetical future for business, as demonstrated by the conversational cadence of a chatbot addressing a customer's grievance or the silent calculation of a dynamic pricing engine modifying the cost of a flight in real-time. AI is evolving from a tool to the new fundamental architecture of trade. The invisible store assistant, the data analyst, the logistical genius, and the customer service representative are all woven together into a cohesive, intelligent whole. It has undeniable potential, but the moral requirements of justice, privacy, and transparency must direct its advancement. In addition to changing how we buy and sell, AI is rewriting the relationship between desire and fulfilment, making the business world more efficient, personalised, and engaging than it has ever been. The store of the future is not a physical location; rather, it is an intelligent, ubiquitous process that is already open for business. AI in management is a cutting-edge technology that has the potential to completely transform conventional corporate procedures by enhancing decision-making procedures and boosting operational effectiveness. Managers can analyse vast amounts of data to find business possibilities, predict market trends, and reduce possible risks thanks to AI technology like machine learning algorithms and predictive analytics. It makes it possible for a business to plan its operations more strategically and change its emphasis from reactive to proactive. Additionally, AI increases productivity by automating monotonous jobs, freeing up managers to focus on more important facets of their work that call for human empathy and understanding. AI can also optimize supply chains and personalize customer interactions, both of which are essential components of a company's competitive advantage. However, it presents moral dilemmas and demands ongoing education to stay up with the rapidly evolving technology. For thousands of years, the creative cogitate served as a unusual, often human source of inspiration. Today, the AI welcomed a new and unique partner: artificial intelligence. Far from the bleak vision of computers replacing artists, AI is emerging as a powerful catalyst, tool, and partner that is democratising the arts and expanding the very meaning of creativity in ways never seen before. Rather than being a replacement, it significantly affects development, analysis, and accessibility. AI is a creative engine with no boundaries. Programs like DALL- E, Midjourney, and Stable Diffusion allow users to generate intricate visuals from simple text inputs. This function helps artists overcome creativity block, visualize themes, and explore styles beyond their

technical expertise by acting as an efficient brainstorming notebook. Using AI technologies like AIVA or OpenAI's MuseNet, composers produce unique melodies or harmonic structures that they then refine and orchestrate. By creating poetic forms, character interactions, and plot twists, language models can function as a cooperative writing partner in literature. By working together, the artist can assume the roles of curator and director, guiding the AI's production with human intuition, emotion, and aim.

Adopting an attitude of critical collaboration rather than passive acceptance is the cornerstone of employing AI properly. To do this, explicit operational safeguards must be put in place. In order to prevent sensitive personal, proprietary, or secret data from being included in the model's training data, users must first maintain strict input hygiene. The concept of human-in-the-loop verification comes in second and is just as important. AI outputs must be regarded as drafts that need to be fact-checked, examined for bias, and contextualized by human expertise, especially when it comes to crucial judgments in fields like healthcare, finance, or legal advice. AI models that have been trained on large datasets have the potential to "hallucinate" believable lies or reinforce society prejudices; humans must continue to be the ultimate arbiter of ethics and truth.

Integration of Green Chemistry and Artificial Intelligence for the Sustainable Synthesis of Bioactive Benzimidazolyl Derivatives

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Abstract

The growing demand for sustainable and environmentally benign synthetic methodologies has intensified interest in the integration of green chemistry principles with emerging digital technologies. In this study, we report an innovative approach that combines green chemistry strategies and artificial intelligence (AI) tools for the sustainable synthesis of bioactive benzimidazolyl derivatives. Benzimidazole scaffolds are well recognized for their wide spectrum of pharmacological activities, including antimicrobial, anticancer, anti-inflammatory, and antiviral properties, making them valuable targets in medicinal chemistry. However, conventional synthetic routes often involve hazardous reagents, toxic solvents, high energy consumption, and low atom economy.

To address these limitations, eco-friendly synthetic protocols were designed using green solvents, mild reaction conditions, and catalyst-efficient methodologies, significantly reducing environmental impact. Artificial intelligence-based models were employed to predict optimal reaction parameters, solvent selection, and catalyst efficiency, thereby minimizing experimental trials and resource consumption. The AI-assisted approach enabled rapid optimization of reaction conditions, improved product yields, and enhanced selectivity while adhering to the principles of sustainability.

The synthesized benzimidazolyl derivatives were characterized using standard spectroscopic techniques, confirming their structural integrity and purity. Preliminary biological screening demonstrated promising bioactivity, highlighting the therapeutic potential of the developed compounds. The integration of AI not only accelerated the synthetic workflow but also contributed to reduced waste generation, lower energy requirements, and improved overall process efficiency.

This work demonstrates that the synergistic application of green chemistry and artificial intelligence offers a powerful platform for sustainable drug discovery and development. The proposed methodology provides a scalable, cost-effective, and environmentally responsible alternative to traditional synthetic approaches and paves the way for future advancements in AI-driven green pharmaceutical chemistry.

Keywords:- Green chemistry; Benzimidazolyl derivatives; Artificial intelligence; Sustainable synthesis; Bioactivity; Medicinal chemistry.

AI-Driven Marketing Analytics and Competitive Advantage

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Abstract

In the era of digital transformation, organizations are increasingly adopting Artificial Intelligence (AI) to enhance marketing efficiency and achieve sustainable competitive advantage. AI-driven marketing analytics enables firms to process large volumes of structured and unstructured data, generate real-time insights, and support informed decision-making. This paper examines the role of AI-driven marketing analytics in creating and sustaining competitive advantage for organizations. The study focuses on how AI tools such as predictive analytics, machine learning algorithms, customer data platforms, and automated marketing systems help firms understand consumer behaviour, forecast demand, optimize pricing strategies, and personalize marketing efforts. AI-based analytics improves marketing performance by enhancing accuracy, speed, and responsiveness to market changes, thereby strengthening customer satisfaction and brand loyalty. The paper also discusses challenges related to data quality, ethical concerns, privacy issues, and technological readiness. The study concludes that effective integration of AI-driven marketing analytics into marketing management practices significantly contributes to organizational competitiveness and long-term business success in a dynamic market environment.

Keywords:- Artificial Intelligence, Marketing Analytics, Competitive Advantage, Predictive Analytics, Marketing Management, Data-Driven Decision Making.

Medicinal Plants used in Treatment of Some Common Disease by the Tribal and Villagers from Patur Tahsil, District- Akola, MS

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Abstract

In ancient time all over the world's herbal medicine were used to cure all the diseases. But due to the globalization, some other medicinal practices emerge out. On the help of quick relief, many more side effects affects the human health. Therefore, the practioner are come back on the herbal medicines. As the relationship explores, Ethanobotany, the term arises that's means relation of medicinal plants and human beings. The present paper focus on surveys of medicinal plants used by some tribe of Patur tehsil. The tehsil area is fully covered by the deciduous forest. These people used some plants as to cure the common. About more than 30 plants species were observed out of which some important plants documented in this paper.

The local peoples and some tribes are mostly dependence on these plants. They are plants for as food, as vegetables, as medicine to cure the some common redimes like fever, cold and cough, diarrhea, body pain etc. Several authors studied on the ethnobotany of this district, but Patur area is remain untrapped. For this speculated region, we focus this study area. The study area are include mainly some village like Alegaon, Pachran, Chondi etc.

The current research is basically emphasize the used of different plant parts for the wellness over the diseases. In Indian subcontinent, the practices of ethnobotany has common to all the people. So many studies were carried out on the same approach. But, apart from the other studies, the subjected work is mentioned the ethnobotanical procedure and its effectiveness to overcome the humanity wellness.

Keywords:- Ethnobotany, Patur forest, Tribal people, Medicinal Plants.

AI : आव्हान आणि संधी

संगीता खोडे

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‘बदल’ हा निसर्गाचा नियम आहे. वाहत्या नदीचे पाणी जसे तेच राहत नाही. त्याप्रमाणे अत्याधुनिकतेच्या युगात बदलत्या, वाहत्या तंत्रज्ञानाचा भाग म्हणून आता AI ची आजची ओळख आहे. या तंत्रज्ञानाची गरजच का? मनोरंजनाच्या साधनेतील उत्क्रांतीचा एक मोठा टप्पा म्हणून AI ची आजची नवी ओळख. आज त्याचे स्वागत होत आहे. आजचे नवीन शिक्षण. शिक्षणाच्या वाहत्या ओघात वेगवेगळे विचार रुजवले जातात. पिढीजात संस्कार आणि पारंपरिक शिक्षण हद्दपार होताना दिसते. आधीच्या काळी लोक कथा गोष्टी सांगायची. गोष्टी सांगता सांगता त्याच्या प्रभावातून गोष्टीतून नवीन पिढीत आपले संस्कार रुजवण्यासाठी घरातल्यांच्या पूर्वजांच्या कथांच्या रूपकांच्या माध्यमातून आपल्या लहानपणी काय काय घडलं ते लहान मुलांना बोलता बोलता समजून सांगायचे आणि आपल्या पिढीतले संस्कार स्वतःच्या आचरणात आणूनही आपोआपच संस्काराचे ज्ञान वृद्धिंगत व्हायचे. आज गोष्टी सांगणारे ते आजी आजोबा किंवा पूर्वजांची ती संस्कार करण्याची जागा व पद्धत आणि अत्याधुनिक तंत्रज्ञानाच्या युगात AI घेताना दिसत आहे.

ज्ञान अपरिमित आहे, पण ते पूर्णतः समजून घेण्याइतका शांतपणा व समजदारी हवी. आज डोळे उघडताच भोवती तंत्र जग दिसते. पण बंद डोळे केले की स्वतःचा शोध घेता येण्याचे शिक्षण घ्यावे लागते. हाती काही मिळावे याचा शोध घेत पुढे काय? या प्रश्नाचे उत्तर शोधत अंधाच्या गुहेत जाणारा हा AI प्रवास वाटतो. चालताना सत्याचा उजेड हवा. म्हणजेच सभोवतीच्या ज्ञानाची जागृत ओळख असलेल्या व्यक्तींना सोबत घेऊनच चालण्याचे धाडस करणे आवश्यक आहे. आजच्या तंत्रज्ञानाची ही अवस्था म्हणजे केवळ युद्धात उतरलेल्या अर्जुनासारखी आहे. मनगटात पुष्कळ बळ आहे. त्याला रणांगणाततील सर्व प्रकारचे रण कौशल्यात पारंगत असलेला तरी विजयाचे महत्त्वपूर्ण श्रेय पदरात पडून घेण्यासाठी श्री कृष्णासारखा सतर्क खंबीर शांत स्थीर मन असणारा सोबतीच असावा लागतो.

देखावा आणि आहे हा भुलावा यातला फरक पुढील पिढीला ओळखता यावा. भोवती खूप ज्ञान आहे पण ते पूर्णतः समजून घेण्या इतका शांतपणा व समजदारी हवी.

AI चा उपयोग माणसेच करीत आहेत. पण माणसांचा उपयोग आणि स्वतःचे त्यांचे कौशल्य त्यांचे काय. प्रत्यक्षात अनुभवी, प्रयत्नशील माणसांना संधी असावी. माणसांशी वास्तविक संबंध, या क्षणातील वास्तवाशी आहे. धीर, संयम, औदार्य या सारखी मूल्य सांगण्यात जे AI आज असमर्थ आहेत, भविष्यात हे AI समजून सांगता येणार का. नवीन कौशल्य शिकण्यासाठी तयार असलेल्या नव्या पिढीला आपण आपल्या भोवती काय बघायचे, कसे वागायचे, हेही संस्कार देता यावे. स्व समजून घेऊन जीवनाची योग्य दिशा आणि उद्देश समजावे. अवास्तव अशा तंत्रज्ञानाची भासमय युगाची वाट उज्वल स्थीरतेकडे घेऊन जावी आणि तसे कौशल्ये रुजवता यावे हे आजच्या पिढीसमोरचे आव्हान आहे.

Artificial Intelligence Techniques and Applications to Agriculture

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Abstract:

Farming assumes an imperative part in Indian economy and over half of the indias populace rely upon horticulture. Cultivating is the support point for every Country's economy because of the immense populace of India the development of yield efficiency is the significant perspective that requires more consideration. The development of harvests might rely upon weather patterns like precipitation, temperature and so forth due to which significance of the cultivating is slowly tumbling down. The primary motivation to this is changes in the environment that impacts the boundaries. Customary cultivating isn't exact and not in light of any scientific subtleties. To conquer such issues like foreseeing the harvest yield will assist the ranchers with knowing measure of harvest yield ahead of time, additionally about the sorts of harvests to be developed during the specific environment, Yield proposal will help for successful navigation, Harvest checking is additionally a significant component need consideration close to this it will assist the ranchers with observing more than one horticultural land simultaneously. The use of different AI strategies will give the advantages to pre-arranging the agrarian exercises for powerful execution to expand yield rates and decrease misfortunes.

Keywords:- AI techniques, agricultural applications, Yield proposal, agrarian exercises etc.

Machine Learning Techniques and Their Applications

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Abstract

Machine Learning (ML) is a core area of Artificial Intelligence that focuses on enabling computer systems to learn from data and improve their performance without explicit programming. In recent years, machine learning techniques have gained significant importance due to the rapid growth of data and computational power. These techniques help in discovering patterns, making predictions, and supporting intelligent decision-making across various domains. Commonly used machine learning approaches include supervised learning, unsupervised learning, semi-supervised learning, and reinforcement learning. Each technique serves different purposes depending on the nature of data and the problem to be solved.

Supervised learning methods such as linear regression, decision trees, and support vector machines are widely used for classification and prediction tasks. Unsupervised learning techniques like clustering and association rule mining help in identifying hidden structures in data without labeled outputs. Reinforcement learning focuses on learning optimal actions through interaction with the environment and is commonly applied in robotics and game-based systems.

Machine learning has diverse real-world applications in fields such as healthcare, finance, education, agriculture, and information technology. In healthcare, ML supports disease diagnosis, medical image analysis, and patient data prediction. In finance, it is used for fraud detection, credit scoring, and risk analysis. Educational systems use ML for performance analysis and personalised learning. Additionally, machine learning plays a vital role in data analytics, recommendation systems, natural language processing, and computer vision.

Despite its advantages, challenges such as data quality, model interpretability, and ethical concerns need careful consideration. Overall, machine learning techniques provide powerful tools for solving complex problems and continue to drive innovation and efficiency in modern applications.

Keywords:- Machine Learning, Supervised Learning, Unsupervised Learning, Applications, Data Analysis.

AI across the Spectrum: Education, Economy and Science

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Abstract

Artificial Intelligence (AI) has emerged as a powerful technology that is transforming almost every sector of human life. The theme "**AI across the Spectrum: Education, Economy and Science**" highlights the wide-ranging impact of AI and its growing importance in today's digital era. This paper explores how Artificial Intelligence is reshaping learning systems, economic growth, and scientific research.

In the field of **education**, AI is enhancing teaching and learning processes through smart classrooms, personalized learning platforms, automated assessments, and virtual tutors. AI-based tools help teachers to understand student performance better and provide customized learning experiences. This leads to improved learning outcomes and increased student engagement.

From an **economic perspective**, AI plays a crucial role in increasing productivity, optimizing business operations, and creating new job opportunities. Industries such as banking, agriculture, healthcare, and manufacturing are using AI to reduce costs, improve efficiency, and support data-driven decision-making. AI-driven automation is helping organizations to grow faster and compete globally.

In **science and research**, AI accelerates innovation by analyzing large datasets, predicting outcomes, and assisting in complex problem-solving. AI applications in medical diagnosis, climate studies, space research, and biotechnology have significantly improved accuracy and speed. Researchers are now able to achieve results that were once considered impossible.

Overall, AI acts as a bridge connecting education, economy, and science, driving sustainable development and technological progress. However, ethical concerns, data privacy, and skill development must be addressed to ensure responsible AI usage. This study emphasizes the need for balanced integration of AI for the benefit of society.

Keywords:- Artificial Intelligence, Education Technology, Economic Growth, Scientific Research, Digital Transformation, Automation.

Artificial Intelligence (AI) in Education: Using AI Tools for Teaching and Learning Process

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Abstract:

Quality based education is not only pillars but future of the nation. Advancement of new technology rapidly transforms each sector and opened the door of new opportunities for human beings. In 21st century world, education system faced several challenges and therefore, certain reforms are evident and adopt new resources in teaching and learning process. Nowadays, Artificial Intelligence (AI) emerged as a powerful tool. As far as education is concerned, Artificial Intelligence (AI) enabled to process daily activities including teaching and learning. The result analysis shows that AI has been widely applied to various educational technology platforms such as popular chatboats like Chat GPT, Gemini and Claude, Virtual Mentor Voice Assistant like Google Assistant (Google), Smart Content, Presentation Translator, Global Courses, for example, MOOCs, Automatic Assessment, Personalized Learning, Educational games, Intelligent Computer-Aided Instruction (ICAI). Artificial Intelligence (AI) is the process of modeling human thinking and designing a machine so it can behave like humans. In the future progress of science and technology, teachers' work such as correcting, student attendance, giving daily tests and exams, explaining knowledge, making administrative reports and other systemic work can be submitted to be completed by technology devices. Teachers can save more energy and can focus more on non-systemic work to create a golden generation with more character and quality with natural intelligence where robots cannot do it. Technology only runs systemically and is automated based on human commands, while the human mind, especially teachers deliver new knowledge. Therefore, the teacher's intelligence will be unmatched. AI that emerged as the industrial revolution is also the result of the creative minds of human natural intelligence.

Keywords:- Artificial Intelligence (AI), education, teaching and learning.

Integrating Artificial Intelligence with Physics-Based Characterization for Advanced Analysis of Structural and Physical Properties of Functional Materials

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Abstract

Artificial Intelligence (AI) is increasingly transforming scientific research methodologies, particularly in data-intensive domains such as physics and materials science. The integration of AI with experimental physics provides powerful tools for improving accuracy, efficiency, and interpretability in the study of functional materials. The present research focuses on the application of AI-assisted techniques for the investigation and analysis of structural and physical properties of functional materials using conventional physics-based characterization methods. Experimental data related to crystal structure, phase formation, microstructural characteristics, and key physical properties such as electrical conductivity, optical response, and thermal behavior are systematically acquired and analysed. AI and machine learning algorithms are employed to process large datasets, identify hidden patterns, establish precise structure–property correlations, and enhance predictive modeling. The AI-driven approach significantly reduces human bias and experimental redundancy while accelerating data interpretation and material optimization. The outcomes demonstrate that AI-assisted analysis improves the reliability and efficiency of material characterization, supporting the development of advanced materials for scientific and technological applications. This study highlights the growing importance of AI-enabled tools in physics research and their potential to advance data-driven, sustainable, and cost-effective scientific investigation.

Keywords:- Artificial Intelligence in Physics; Machine learning applications; Functional materials; Structural characterization; Physical property analysis; Solid state physics; Data-driven materials research.

AI: Uses and Misuses in Linguistic Study

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Abstract

Language is a fundamental medium of human interaction and a core subject of inquiry in linguistic studies. The present research explores the uses and misuses in linguistic study, focusing on the ways linguistic theories, methods, and analytical tools are applied across academic, educational, social, and technological domains. Linguistics plays a constructive role in understanding language structure, meaning, and use, contributing to areas such as language description, documentation of endangered languages, second language teaching, translation and interpretation, discourse analysis, sociolinguistics, and computational applications. These uses support effective communication, preservation of linguistic diversity, and informed language policy and planning.

However, alongside these positive contributions, linguistic study is often subject to misuse and misinterpretation. This research critically examines common misuses, including the rigid application of prescriptive norms, oversimplification of complex linguistic theories, misanalysis of linguistic data, and selective interpretation of language evidence to support ideological, political, or cultural biases. The study also highlights the unethical exploitation of linguistic knowledge in media discourse, political propaganda, advertising, and discriminatory practices based on language, accent, or dialect.

Special attention is given to the Indian multilingual context, where uncritical adoption of Western linguistic frameworks without proper socio-cultural adaptation may lead to distorted conclusions. Using a qualitative and analytical research methodology, this study aims to promote critical awareness, methodological rigor, and ethical responsibility in linguistic research. The findings emphasize that linguistic knowledge must be applied in a context-sensitive and socially responsible manner. Ultimately, the study argues that linguistics should function as a tool for inclusion, understanding, and intellectual clarity, rather than as a means of distortion, exclusion, or misuse.

AI: Contribution to Women's Health

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Abstract

Women's health has long been affected by issues such as late diagnosis, unequal access to healthcare, and limited inclusion of women in medical research. These challenges often result in poorer health outcomes and delayed treatment. In recent years, Artificial Intelligence (AI) has begun to play an important supporting role in healthcare, offering new ways to improve how women's health conditions are identified, monitored, and managed. This paper discusses the growing contribution of AI to women's health and highlights areas where it has shown meaningful impact.

The study is based on a review of published research articles, large clinical studies, and global health reports that examine the use of AI in healthcare settings. Key focus areas include reproductive and menstrual health, maternal care, cancer screening, mental health, and long-term disease management. Particular attention is given to machine learning-based tools and AI-assisted diagnostic systems that are already being used alongside clinicians.

The review shows that AI has been especially useful in improving early detection of breast and cervical cancer by supporting doctors in interpreting medical images more accurately. In maternal healthcare, AI-based risk assessment models help identify complications such as high-risk pregnancies at an earlier stage, allowing timely medical intervention. AI-driven digital platforms have also improved access to mental health support, fertility tracking, and personalized health monitoring, particularly for women living in underserved or remote areas.

At the same time, concerns related to data privacy, ethical use, and bias in AI systems cannot be ignored. Overall, AI should be viewed as a supportive tool rather than a replacement for clinical judgment. When implemented responsibly and combined with ethical guidelines and inclusive data practices, AI has the potential to significantly improve healthcare delivery and outcomes **for women.**

Keywords:- Artificial Intelligence; Women's health; Maternal Health; Cancer Screening; Digital Health; Ethical health.

बदलत्या काळात ग्रंथालयांमध्ये एआयचा वापर करण्याची गरज

धिरज रामचंद्र कोकाडे

व्यावसायिक सहाय्यक, कुंभलकर कॉलेज ऑफ सोशल वर्क, वर्धा, फोन नं.-९६३७७९३१०

प्रस्तावना :

आजचे युग हे माहिती तंत्रज्ञानाचे युग आहे. माहितीच्या वाढत्या प्रवाहामुळे पारंपारिक ग्रंथालय व्यवस्थापनात अनेक अडचणी निर्माण होत आहे. या बदलत्या काळात ग्रंथालये अधिक प्रभावी, वेगवान आणि वापरकर्ता केंद्रित बनवण्यासाठी कृत्रीम बुद्धिमत्ताचा (ए.आय.) वापरकरणे अत्यंत आवश्यक आहे.

एआय एक स्मार्ट असिस्टंट आहे. जो माहिती समजून घेऊन निर्णय घेण्यास मदत करते, समस्या सोडवणे, आणि संवाद साधणे या सारख्या कार्यांचा समावेश होतो. एआयला अशा प्रकारे प्रशिक्षित केले आहे की, जिथे माणसाला एक्सपर्टची गरज असते तिथे ते फक्त एआयच काम करू शकते. त्यामुळे प्रॉब्लेम सॉल्व्हिंग, रिपच रिक्रीशॅशन, व्हिज्युअल प्ररस्पेक्षन, डिजीजन पावर ही सर्व कामे एआय माणसा पेक्षा वेगाने करते.

एआय एक अशी संगणक प्रणाली किंवा तंत्रज्ञान आहे, जी माणसा सारखी विचार करणे, शिकणे, निर्णय घेणे आणि समस्या सोडवणे या सारखे कार्य करण्यास मदत करते. कृत्रीम बुद्धिमत्ता विविध क्षेत्रांमध्ये क्रांती घडवून आणत आहे, ग्रंथालय आणि माहिती विज्ञान याला अपवाद नाही. एआय तंत्रज्ञानाचा लाभ घेऊन ग्रंथालये त्यांच्या सेवासुधारू शकतात आणि वापरकर्त्यांना उत्तम सेवा देतात. कृत्रीम बुद्धिमत्ता म्हणजे मानवी बुद्धिमतेचे यंत्रा मध्ये केलेले अनुकरण, ज्यांना मानवां प्रमाणे विचार करण्यासाठी आणि शिकण्यासाठी प्रोग्राम केलेले असते. एआय तंत्रज्ञाना मध्ये मशीन लर्निंग, नैसर्गिक भाषा प्रक्रिया रोबोटिक्स आणि डेटा विश्लेषण यांचा समावेश होतो, जे कार्यक्षमता आणि निर्णय प्रक्रिया सुधारण्यासाठी विविध कामांमध्ये लागू केले जाऊ शकतात.

वाचक, वाचन साहित्य आणि ग्रंथालयीन कर्मचारी हे तीन घटक ग्रंथालयातील अत्यंत महत्वाचे घटक आहेत. ग्रंथालयाचा मुळ उद्देश ज्ञान व माहिती संग्रहण हा असतो. ग्रंथालयातून ही साधने वापरण्यासाठी नेता येतात व मर्यादित कालावधीत परत केली जातात. आधुनिक काळात ग्रंथालयाची संकल्पना बदलून ते माहितीचे देवाण-घेवाण करणारी संस्था अशी झाली आहे. कारण वाचक पुस्तक न मागता डेटाबेसची माहिती मागण्यासाठी येत आहे.

Artificial Intelligence in Business Management: A Study of Strategic Decision-Making and Organizational Performance

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Abstract

Artificial Intelligence (AI) is increasingly reshaping business management by enhancing strategic decision-making and improving organizational performance. This study examines the influence of AI adoption on managerial decision-making processes and overall organizational outcomes. Using a descriptive and analytical research design, the study is based on primary data collected from managers and executives through a structured questionnaire, supported by secondary sources from existing literature. The analysis reveals that AI significantly improves decision accuracy, forecasting ability, and operational efficiency, leading to enhanced organizational performance in terms of productivity and competitiveness. However, challenges such as implementation cost, data security, and skill gaps continue to affect effective AI integration. The study concludes that strategic alignment, managerial readiness, and supportive organizational frameworks are essential for realizing the full potential of AI in business management. The findings offer valuable insights for managers, policymakers, and researchers in understanding the strategic role of AI in modern organizations.

Keywords:- Artificial Intelligence, Business Management, Strategic Decision-Making, Organizational Performance.

Artificial Intelligence in Education

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Mahatma Jyotiba Fule Mahavidyalaya, Amravati

Abstract:

Artificial Intelligence (AI) is changing how we learn and teach. Schools and educators are using AI tools to create personalised learning experiences, increase student engagement, and improve learning results.

This abstract looks at how AI is currently used in education, including its benefits and challenges. The main points include:

- Personalised Learning: AI systems adjust lessons to fit each student's needs and abilities.
- Intelligent Tutoring Systems: Virtual tutors powered by AI offer one-on-one help, giving immediate feedback and support.
- Automated Assessment: AI tools make grading easier and quicker, allowing teachers to focus on important tasks.
- Learning Analytics: AI analytics help teachers find out where students need extra help, leading to better-informed decisions.

While AI can greatly improve education, we must address challenges like data privacy, bias, and teacher training to ensure fair and effective use.

Summary:- AI is improving education by making learning more personalised and efficient. We need to address the related challenges to fully realize its potential.

कृषी क्षेत्रात कृत्रिम बुद्धिमत्तेची भूमिका: एक विश्लेषणात्मक अध्ययन

महेंद्र पांडुरंगजी गावंडे

नारायणराव काळे स्मृती मॉडेल कॉलेज, कारंजा (घाडगे), जि. वर्धा
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निष्कर्ष-

भारत हा कृषीप्रधान देश असून ५४% लोक कृषीवर अवलंबून आहे. येथे हवामान परिवर्तन, संसाधनांचा अभाव आणि कमी उत्पादकता ही प्रमुख आव्हाने दिसून येते. त्यावर मात करण्याकरिता कृषी क्षेत्रात कृत्रिम बुद्धिमत्ता हे तंत्रज्ञान उपयुक्त साधन आहे. याद्वारे सांख्यिकीय माहितीचे विश्लेषण, हवामान पूर्वानुमान, मातीची गुणवत्ता, ओलावा, पोषकद्रव्ये आणि कीटक हल्ल्याची अचूक माहिती प्राप्त होते, त्यामुळे शेतकरी वर्ग वेळीच सावध होतो आणि योग्य वेळी, योग्य निर्णय घेऊन योग्य प्रमाणात खते, पाणी आणि कीटकनाशके यांचा वापर करून योग्य उपाय योजनेद्वारे पीक संरक्षण करू शकतो व दुष्काळ, अतिवृष्टीसारख्या संकटांचा सामना करण्यास सक्षम होतो. त्याच बरोबर बियाणे निवड, पेरणी वेळ ठरविणे आणि बाजारभावाच्या अडचणी सोडविण्याकरिता व योग्य निर्णय घेण्यास सहाय्यक ठरते. तसेच ड्रॉन्स, सेन्सर्स आणि इतर उपकरणांद्वारे सिंचन नियोजन, पिकांच्या आरोग्याचे निरीक्षण आणि कापणीची वेळ निश्चितीकरिता मदत मिळते, त्यामुळे कृषी उत्पादनात जवळपास ३०% पर्यंत वाढ होऊ शकते, त्याचबरोबर उत्पादन खर्च कमी करण्यास मदत प्राप्त होते. संसाधनांचा कार्यक्षम वापर होतो आणि शाश्वत शेतीला चालना मिळते.

दीर्घकाळात हे कृषी अर्थव्यवस्थेला मजबूत करते आणि जागतिक खाद्य सुरक्षेसाठी योगदान देते. शेतकऱ्यांना वेळेवर निर्णय घेता येतो, आर्थिक जोखीम कमी करून नफा वाढतो आणि कर्ज-विम्याच्या निर्णयात सुधारणा निर्माण होते. पर्यावरणपूरक कृषीकरिता रसायनांचा वापर घटतो व जलसंरक्षण घडून येते.

परंतु भारतात डिजिटल साक्षरतेचा अभाव, उच्च खर्च आणि ग्रामीण इंटरनेट समस्यांचे आव्हाने, सांख्यिकीय माहितीची गोपनीयता व गुणवत्ता, रोजगार कमी होण्याचा धोका, पारंपरिक ज्ञानाची लुप्त होण्याची भीती, तसेच तंत्रज्ञानासंबंधीत जागरूकतेचा अभाव, आर्थिक विषमता वाढीची आकांक्षा, पायाभूत सुविधांचा अभाव ह्या समस्या आहेत.

त्याचे निराकरण झाल्यास हे तंत्रज्ञान देशाकरता कृषी व आर्थिक विकासाचे एक साधन सिद्ध होईल यात शंका नाही व कृषी अर्थशास्त्रात कृषीचे आर्थिक नियोजन करून कृषी विकास घडून येईल.

The Interdisciplinary Evolution of Human-AI Collaboration

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Abstract:

Artificial Intelligence (AI) has shifted from a specialized computational tool to a fundamental pillar of interdisciplinary research, catalyzing a paradigm shift toward Human-AI Collaboration (HAIC). This paper explores the evolution of AI through the lens of socio-technical integration, where intelligent systems are no longer viewed as mere automated assistants but as proactive team members. By synthesizing advancements in Agentic AI, Explainable AI (XAI), and Human-Computer Interaction (HCI), we examine how "Collaborative Intelligence" is being operationalized across high-stakes domains such as precision medicine, sustainable engineering, and complex scientific discovery.

The research identifies three critical stages of this evolution: substitution, augmentation, and full-scale partnership. In the current 2026 landscape, the emergence of autonomous agents capable of multi-step reasoning has redefined the "Human-in-the-loop" model, necessitating new frameworks for Human-AI Teaming (HAIT). These frameworks prioritize cognitive alignment, where AI systems adapt to human mental models to foster trust and transparency. However, the interdisciplinary nature of HAIC introduces complex challenges, including the mitigation of algorithmic bias and the preservation of human agency. This paper argues that the success of modern AI lies in context-aware collaboration—the ability of systems to respect domain-specific ethical constraints while augmenting human creativity. We conclude that future innovation depends on a "bi-directional handshake" between human intuition and machine scalability. This interdisciplinary approach ensures that AI development remains aligned with societal welfare and human-centric values.

Thermogravimetric Study and Chelating Ion Exchange Properties of Functionalized Amberlite Xad-2 Resin By 1-Nitroso-2-Naphthol

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Abstract:

Functionalization of amberlite XAD-2 resin with 1-Nitroso-2-Naphthol was carried out by using -SO₂ spacer technique. Intermediates formed in a reaction scheme and the final products in the reaction were characterized by FTIR method. Final product was abbreviated as 1-Nit 2-Nap-SO₂-AXAD-2. The composition of newly functionalized amberlite XAD-2 resin (1-Nit 2-Nap-SO₂-AXAD-2) has been determined by elemental analysis. The number average subatomic mass of functionalized resin was determined by conductometric titration in a non-aqueous medium. **Thermo-kinetic parameters** of functionalized resin such as activation energy (E_a), free energy changes (ΔG), entropy change (ΔS) and order of degradation (n) were calculated by FC and SW methods. The order of degradation (n) obtained by the FC method was finally confirmed by SW method. Activation energy and entropy change calculated by both of these methods were found to be in good agreement. Similarly, low values of frequency factor suggest slow degradation. **The ion exchange properties** of 1-Nit 2-Nap-SO₂-AXAD-2 have also been studied by employing the batch equilibrium method. It was employed to study the selectivity of metal ion uptake over a wide pH range and in media of various ionic strengths. The overall rate of metal ions uptake follows the order: Pb⁺² > As⁺³ > Hg⁺² > Bi⁺³.

Keywords:- Amberlite XAD-2; -SO₂ spacer; resin; thermal degradation; metal ion uptake; batch equilibrium method.

Use of AI in UG Level Teaching

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Artificial Intelligence (AI) has appeared as a transformative force in education system during 21st century, it helps learners in acquiring various skills and to teachers in delivering instruction. In the context of under graduate level teaching learning process, AI technologies provide personalized, efficient, and interactive opportunities that were previously unimaginable. This paper explores the applications of AI in college level education, its benefits, various challenges and future prospects. Artificial Intelligence (AI) has the potential to cope up with number of difficulties and challenges in education today. Traditional methods of teaching (lecture, textbook-based instruction and manual correction) often struggle to provide individualized instruction, real-time feedback, or scalable practice for large learner populations. Recent advances in artificial intelligence helps to incorporate AI tools into education sector and thereby reshapes traditional teaching -learning process. AI has particularly brought revolution in natural language processing (NLP), speech recognition, and adaptive learning systems thus provide new possibilities for addressing these challenges. In short, AI-powered tools can cater to every age groups including high school level to undergraduate level students. Use of AI can provide Innovative teaching and learning practices, and thus accelerate learners progress. AI-powered tools such as natural language processing (NLP), automated assessment, speech recognition, and conversational agents promise to offer personalized, adaptive, and scalable language-learning experiences. This paper reviews recent research on the integration of AI in UG level teaching and analyses its benefits (e.g., individualized learning, enhanced engagement, better assessment and feedback), it also highlights challenges (technological, ethical, pedagogical), and discusses future directions. The study emphasizes on the fact that AI cannot — and should not — replace human teachers, rather it should be used thoughtfully to increase outcomes of teaching learning process at under graduate level. AI tools offer significant opportunities to enhance the educational journey of UG and PG students through personalized learning and immediate support, the research has addressed the associated risks and ethical challenges to ensure their benefits.

Keywords:— Reshaping, Adaptive Learning, Processing, Associated Risk.

The Impact of AI on Modern Financial Decision-Making

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Abstract:

The Role of Artificial Intelligence in Contemporary Financial Systems:

The continual growth of Artificial Intelligence (AI) has helped created new ways in which modern financial systems function. The development of algorithmic trading, the automation of customer services, and the detection of fraudulent transactions are examples of ways in which financial institutions have begun to reshape their activities, competition, and risk management. This paper addresses the increasing importance of AI in the field of finance, analyses the various applications in the industry, describes the associated benefits and challenges, and speculates on the future role of AI in creating a more efficient and intelligent ecosystem in finance.

To make effective and efficient decisions in the areas of credit scoring, investment management, forecasting and financial institutions require the ability to process large amounts of data in a timely manner. They have employed AI in the form of data-driven models in order to achieve this. The analysis and interpretation of customer behavior, transactions, and the market are fundamental components of predictive modeling. The algorithms that learn from these components are used to improve and personalise the experience of customers in order to provide optimal financial services and real-time assistance.

AI has also reduced the financial sector's dependence on humans in the areas of cybersecurity and fraud detection. Financial institutions such as banks and internet-based financial service providers are using pattern recognition and anomaly detection systems to combat fraud. Moreover business process automation systems

In the future, banks and insurance companies can look forward to closer cooperation from human know-how and smart systems. Continuing to evolve and innovate, AI will disrupt the traditional finance market structure; it won't simply automate today's financial processes, but is likely to create new investment approaches and business models. With the right application, AI can help promote market stability, bolster investor confidence and increase economic resilience. For this reason, it is important to grasp the changing role of AI in finance for policymakers, industry leaders and researchers interested in creating a future-proof financial system that is transparent, adaptive and globally competitive.

Keywords:- Artificial Intelligence, Machine Learning, Algorithmic Trading, Fraud Detection, Credit Scoring, Risk Management, Automation, Financial Inclusion, Digital Banking, Data Analytics, Cyber Security, Ethical AI.

हिन्दी भाषा तथा साहित्य शिक्षण में कृत्रिम बुद्धिमत्ता (AI) का उपयोग

श्यामप्रकाश पांडे

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वर्तमान काल में प्रत्येक क्षेत्र तकनीकी की तेज गति और उन्नत प्रौद्योगिकी, जिसमें कृत्रिम बुद्धिमत्ता (Artificial Intelligence) का समावेश है, से संयोजित हो कर तेजी से विकास की दिशा में गतिशील है, शिक्षा का क्षेत्र भी उन्हीं क्षेत्रों में से एक क्षेत्र है। हिन्दी भाषा तथा साहित्य शिक्षण भी शिक्षा के क्षेत्र का ही एक अंग है। हिन्दी भाषा के क्षेत्र में कृत्रिम बुद्धिमत्ता उपकरण Akhor AI हिन्दी टाइपिंग, फोनेटिक कीबोर्ड, शब्द पूर्वानुमान तथा वर्तनी सुझाव हेतु; Talkpal AI, Talkio AI तथा Google AI Studio नेटिव स्पीच जनरेशन तकनीक के माध्यम से वास्तविक बातचीत के द्वारा ध्वनि

सही उच्चारण, शब्दकोश बढ़ाने, शब्द के सटीक प्रयोग हेतु; Grammarly AI वाक्य संरचना निर्माण, परिच्छेद लेखन तथा व्याकरण त्रुटियों के निराकरण तथा शैलीगत सुझावों में योगदान हेतु निर्मित किए गए हैं। जिससे भाषा के अभ्यर्थी को विशेष सहायता मिलती है तथा कम से कम समय में

भाषा को सीख लेता है। उसी प्रकार ChatGPT 4.0, Google तथा Gemini उन्नत भाषाई मॉडल है, जो हिन्दी साहित्य की व्याख्या, कठिन शब्दों के संदर्भ और तुलनात्मक अध्ययन के लिए उपयोग किए जाते हैं।

इसी प्रकार Memrise/Anki AI कठिन हिन्दी मुहावरों और साहित्यिक शब्दावली को लंबे समय तक याद रखने हेतु; LingQ AI छात्रों की रुचि के अनुसार हिन्दी सामग्री (जैसे समाचार या उपन्यास) को अध्ययन सामग्री में बदलने और शब्दावली को ट्रैक करने करने की सुविधा देता है। CAMB AI उच्चस्तरीय ऑडियो-वीडियो सामग्री का 100 से अधिक भाषाओं में अनुवाद करता है, जिससे तुलनात्मक साहित्य के अध्ययन में सहायता मिलती है। इसी प्रकार से Magic School AI हिन्दी शिक्षकों के लिए पाठ तैयार करने मूल्यांकन प्रश्न और जटिल साहित्यिक विषयों के सारांश तैयार करने हेतु, DiffitAI कठिन हिन्दी लेख या वीडियो को छात्रों के स्तर के अनुसार अनुकूलित पाठ सामग्री तथा वर्कशीट में बदलने हेतु, Curipod AI उच्चस्तरीय हिन्दी कक्षाओं के लिए इंटरैक्टिव और एंगेजिंग पाठ तैयार करने हेतु प्रयोग में लाए जाते हैं। इनके अलावा भी कृत्रिम बुद्धिमत्ता आधारित अनेक उपकरण उपलब्ध हैं, जिनका प्रयोग हिन्दी भाषा तथा साहित्य शिक्षण के क्षेत्र में निरंतर किया जा रहा है।

बीज शब्द : तकनीकी, प्रौद्योगिकी, कृत्रिम बुद्धिमत्ता, हिन्दी भाषा, हिन्दी साहित्य, शिक्षण.

Artificial Intelligence Reshapes the Roles of Library Professionals

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Abstract

Artificial Intelligence (AI) is transforming the library profession by redefining the roles and responsibilities of library professionals. With the automation of routine tasks such as cataloging, classification, indexing, and circulation, librarians are no longer limited to traditional operational functions. AI-powered systems efficiently handle repetitive work, allowing professionals to devote more time to advanced and value-added services.

In the AI-enabled library environment, librarians increasingly serve as information consultants, digital curators, and research support specialists. They assist users with complex information needs, manage digital repositories, support data-driven research, and guide users in navigating vast digital resources. Library professionals also play a critical role in promoting information literacy, helping users critically evaluate information, including AI-generated content.

Furthermore, librarians are responsible for overseeing the ethical implementation of AI, ensuring data privacy, transparency, and fairness in information access. Continuous professional development in AI tools, data analytics, and emerging technologies has become essential. Overall, AI does not replace library professionals but reshapes their roles, empowering them to become strategic knowledge facilitators and leaders in the digital information landscape.

Keywords:- Artificial Intelligence (AI); Libraries; Library Professionals; Automation; Information Retrieval.

Artificial Intelligence: Its Uses in Modern Age

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Abstract:

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the modern age, reshaping the way humans interact with machines and redefining multiple sectors of society. Broadly defined as the ability of machines to simulate human intelligence, AI encompasses techniques such as machine learning, deep learning, natural language processing, computer vision, and robotics. In the contemporary world, AI systems are increasingly capable of learning from data, recognizing patterns, making decisions, and performing tasks that traditionally required human cognition.

The applications of artificial intelligence span a wide range of domains. In healthcare, AI is revolutionizing disease diagnosis, medical imaging interpretation, drug discovery, and personalized treatment planning, thereby improving accuracy and efficiency while reducing costs. In education, AI-driven tools support personalized learning, intelligent tutoring systems, and automated assessment, enabling adaptive and learner-centered educational experiences. The industrial and business sectors have also witnessed significant AI integration through automation, predictive maintenance, supply chain optimization, and customer service chatbots, enhancing productivity and decision-making processes.

In everyday life, AI-powered technologies such as virtual assistants, recommendation systems, smart home devices, and autonomous vehicles have become increasingly common, influencing how individuals communicate, consume information, and travel. Furthermore, AI plays a crucial role in scientific research, climate modelling, cyber security, finance, and governance by enabling the analysis of vast datasets and supporting evidence-based policymaking.

Despite its numerous advantages, the rapid adoption of artificial intelligence raises ethical, social, and economic concerns, including data privacy, algorithmic bias, transparency, job displacement, and accountability. Addressing these challenges requires responsible AI development, robust regulatory frameworks, and interdisciplinary collaboration. Overall, artificial intelligence stands as a cornerstone of modern technological advancement, offering immense potential to improve human life while demanding careful consideration of its long-term implications for society.

Role of Artificial intelligence (AI) in Semi- microanalysis of Acidic and basic Radicals for Inorganic salts

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Abstract

To identify the Inorganic compounds, there is high number of chemical reagents and time-consuming manual traditionally analysis technique, to overcome this difficulty by using Artificial intelligence (AI), we can reduce the time and chemical for identification of various acidic and basic radical. The separation of Basic radical we needed manually hydrous unpleasant smell of (Hydrogen Sulphites gas. (H₂S) and Classification of cations into six groups using group by number of reagents for process and its difficulty to finding number of cations from 10-100 mg sample or compound provided to manually analysis and centrifuges to get colour test of salts. Semi-Quantitative Estimation (AI-Based): AI, specifically Support Vector Machines (SVM) and Artificial Neural Networks (ANN), can analyze digital images and spectral data of chemical spots (precipitates/colors) to predict the concentration of metal ions (e.g., Fe, Pb, Hg) in inorganic pigments. Computer-Assisted Analysis: AI methods can process data from non-invasive visible reflectance spectroscopy and smartphone imaging to identify inorganic compounds. Advantages of AI-Enhanced Semimicro Analysis: Increased Speed and Efficiency. The spots test analyser of colour spectrum like U.V. Visible light Faster identification compared to traditional, fully manual methods. By Identification of colour spots, we visualized the particular colour test of smart phone spectrum by using irradiation of light and Enhanced Safety: Reduced handling of toxic or dangerous reagents. Accuracy: Improved precision in identification, particularly in distinguishing similar, subtle results. Like Ni -DMG spot test confirm the Ni Radicals. For Acid radical halogen group silver nitrates spot test confirms by colour spectrum.

AI in Physics: Application of AI for Research in Physics

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Abstract:

Artificial Intelligence (AI) has emerged as a transformative tool in physics research, enabling breakthroughs in data analysis, simulation, and theoretical modeling. The physics principles is revolutionizing artificial intelligence (AI) discovery by leveraging data, prior knowledge and fundamental laws across scales of matter, energy, and space-time. AI enhances physics research by analyzing complex datasets and uncovering hidden patterns. This paper explores and examines the relationship between AI and core physics domains including classical mechanics, electromagnetism, statistical physics and quantum mechanics while exploring AI applications in healthcare through pattern recognition in intricate medical data for diagnosis and treatments. Deep learning techniques, which employ parameterized functions to reveal underlying structures in raw data, enable reliable predictions from observed trends. We further demonstrate deep learning's efficacy in solving physical problems, providing concrete examples and comparisons with traditional methods to underscore AI superior advantages.

Keywords:- Physics, Artificial intelligence (AI)

AI and the Evolution of Digital Currency Systems in India

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Abstract

The rapid advancement of Artificial Intelligence (AI) has significantly influenced the transformation of digital currency systems across the globe, with India emerging as a key participant in this evolving financial landscape. This paper explores the role of AI in the development and evolution of digital currency systems in India, focusing on its impact on efficiency, security, transparency, and financial inclusion. AI technologies such as machine learning, data analytics, and intelligent automation are increasingly integrated into digital payment platforms, cryptocurrency exchanges, and blockchain-based systems to enhance transaction processing, fraud detection, risk assessment, and user experience. The study also examines the relevance of AI in supporting India's digital financial initiatives, including the growth of cashless transactions and the potential implementation of central bank digital currency (CBDC). Additionally, the paper highlights challenges related to regulatory frameworks, data privacy, cybersecurity risks, and technological infrastructure. The study concludes that AI plays a crucial role in shaping the future of digital currency systems in India by enabling smarter, safer, and more inclusive financial ecosystems, provided that ethical standards and regulatory mechanisms are effectively implemented.

Keywords:- Artificial Intelligence, Digital Currency, Cryptocurrency, Blockchain, Financial Technology, India.

AI-Enabled Fraud Detection Systems in FinTech Platforms: A Comparative Analysis of Traditional and Deep Learning Models

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Abstract

As the FinTech industry undergoes rapid digital transformation in 2026, the volume and complexity of financial transactions have reached unprecedented levels. While this evolution offers immense convenience, it has simultaneously empowered fraudsters to deploy sophisticated, AI-driven attacks such as Deepfake identity theft and synthetic fraud. This research provides a comprehensive comparative analysis between traditional machine learning (ML) models—such as Logistic Regression, Random Forests and Support Vector Machines (SVM)—and advanced Deep Learning (DL) architectures including Recurrent Neural Networks (RNNs), Long Short-Term Memory (LSTM) networks and Autoencoders. By evaluating performance metrics such as precision, recall, F1-score and AUC-ROC, the study demonstrates that while traditional models offer high interpretability and lower computational latency, deep learning models exhibit superior adaptability to evolving fraud patterns and higher accuracy in high-dimensional datasets. The findings suggest that a hybrid "ensemble" approach, combining the speed of traditional rules with the predictive depth of deep learning, represents the most robust defense for modern FinTech platforms.

Keywords:- Artificial Intelligence, Fraud Detection, FinTech, Machine Learning, Deep Learning, Financial Security.

Artificial Intelligence in Supply Chain Economics

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Artificial intelligence is becoming an integral part of our lives these days. We were introduced to this subject long ago through movies like Robot . In the present day, AI has rapidly entered every field and started a different revolution. AI is a transformative technology system in the modern economy. The use of AI in supply chain economics has brought about a significant change in demand forecasting, inventory management, and transportation cost control.

The objective of this research paper is to study the economic impact of artificial intelligence on supply chain management and to explain its benefits, limitations, and future opportunities. Secondary data has been used for the study.

In a world of increasing global competition, changing consumer preferences, and market uncertainty traditional supply chain management is becoming inadequate. In such a scenario, artificial intelligence-based systems are making supply chains more efficient by making data-driven decisions.

- Artificial intelligence can more accurately predict customer demand, thereby preventing overstocking by identifying fluctuations in supply and demand.
- Artificial intelligence-based route planning in logistics reduces transportation costs.
- Pricing and risk management happen more effectively.
- The use of AI in the supply chain leads to an increase in overall profitability.

In short, artificial intelligence is a very useful and transformative technology system for supply chain economics. From an economic perspective, AI increases productivity, reduces market uncertainty. As a result, artificial intelligence is effectively used to achieve cost reduction, efficiency, market stability, and long-term economic growth.

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AI-Driven Innovation in E-Commerce and Organizational Management

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Abstract

Artificial intelligence (AI) has rapidly evolved in recent years, enabling machines to perform human-like tasks such as learning, reasoning, problem-solving, and decision-making with increasing efficiency. This paper examines the expanding role of AI in e-commerce and business management, focusing on its impact on customer behavior analysis, personalized recommendations, chatbots, and virtual assistants. As AI continues to advance, organizations are using intelligent systems to predict consumer preferences more accurately and improve customer experiences through automation and data-driven insights. The study also explores the growing potential of AI-driven virtual assistants in supporting business operations and customer interactions.

The research problem

Despite the rapid growth of artificial intelligence (AI) in e-commerce and business management, many organizations struggle to use it effectively. The research problem centers on understanding how AI is transforming e-commerce and management, as well as identifying the benefits, challenges, and limitations of its adoption in improving customer experience and business efficiency. Overall, this research highlights AI's significant role in shaping the future of commerce and management.

Methodology

This study uses a descriptive research approach to examine the role of artificial intelligence (AI) in e-commerce and business management. Data is collected from secondary sources such as research papers, academic journals, industry reports, and reliable online resources. The information is analyzed to understand current trends, benefits, challenges, and the impact of AI on business operations and customer experience.

Key Findings

- ❖ AI improves customer experience through personalization and faster support.
- ❖ Businesses use AI to better predict customer behavior and increase sales.
- ❖ AI enhances management decisions with data-driven insights.
- ❖ Challenges include cost, data privacy, and skill requirements.
- ❖ AI's growing impact on commerce and business management.

Phytochemical Evaluation and FTIR Spectral Analysis of an Ethnomedicinal Plant, *Trichodesma zeylanicum* (Burm.f.) R. Br.

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Abstract

Trichodesma zeylanicum (Burm.f.) R. Br. (Boraginaceae) is an ethnomedicinally important herb widely distributed in tropical and subtropical regions, particularly across the Indian subcontinent, where it commonly grows in dry, open habitats and semi-arid environments. The present study aimed to investigate the phytochemical composition and functional group characteristics of the acetone leaf extract of *T. zeylanicum* to provide scientific support for its traditional use. Preliminary phytochemical screening revealed the presence of saponins, phenolic compounds, tannins and steroids indicating the selective extraction of moderately polar secondary metabolites by acetone. These constituents are well known for their antioxidant, antimicrobial, membrane-active and anti-inflammatory properties. In contrast, alkaloids, cardiac glycosides, flavonoids, terpenoids, proteins, carbohydrates, starch, phlobatannins, coumarins and emodins were absent suggesting limited extraction of highly polar and certain non-polar compounds.

Fourier Transform Infrared (FTIR) spectroscopic analysis further supported the phytochemical findings by revealing characteristic absorption bands corresponding to key functional groups. The broad O–H stretching band indicated the presence of hydroxyl-containing compounds such as phenols, while C–H stretching bands reflected aliphatic hydrocarbon chains. Additional peaks corresponding to O–H bending, C–O stretching, and ester or glycosidic linkages confirmed the presence of oxygenated secondary metabolites including phenols and saponins. The detection of C–H bending and C–Br stretching vibrations suggested structural diversity and the possible presence of halogenated moieties. Overall, the results demonstrate the chemical complexity of the acetone leaf extract of *T. zeylanicum* and highlight its potential as a source of bioactive compounds thereby providing a scientific basis for its traditional medicinal applications.

Keywords:- *Trichodesma zeylanicum*, Ethnomedicinal plant, Acetone leaf extract, Phytochemical screening, FTIR analysis, Phenolic Compounds, Saponins, Tannins, Steroids, Functional groups, Secondary metabolites

Role of AI in Biodiversity Conservation

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Abstract

Biodiversity is the variety of all life on earth from gene to population, species, function & ecosystem. This precious biodiversity is now being lost at an extremely rapid rate due to exploitation of natural resources. Sustainable management of ecological habitat is the challenge to biodiversity conservationist. This article examines how AI technologies are being combined with the internet to improve identification of species in danger, protects habitats & optimize resources management.

This paper explores the significant role of AI technology for conservation of biodiversity by providing powerful tools for real time monitoring, anti-poaching, habitat management, data analysis to protect flora & fauna species & ecosystem from threats like illegal human activities & climatic change. AI provides sensors, camera traps to identify species & monitor behavior non-invasively reducing human disturbances. It examines that AI technology is used to analyze sensor data, drone footage & patrol routes to detect illegal activities for protecting biodiversity. It also analyze satellite imagery to identify deforestation, monitors protected areas & tracks invasive species. It also analyzes data from animal attached sensors to detect illness or distress.

The study concludes that, by integrating AI capabilities the future of biodiversity conservation will automates large scale monitoring, enhancing species identification and integrating Indigenous knowledge with scientific data for presenting biodiversity loss and climatic action change. Overall, the paper underscores the growing impact of AI in biodiversity conservation & advancing sustainability efforts.

Keywords:- Ecosystem, Species, monitoring, Habitat, Flora and Fauna

Synthesis, Characterization And Biological Assessment of Several Acetyl Derivatives of Thiadiazolidene

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Abstract

Semicarbazide used as a starting material for the synthesis of 2-phenylimino-3-amido-5-aryl/alkyl imino 1,3,4-thiadiazolidine. Semicarbazide was treated with aryl/alkyl isothiocyanate to get 1-aryl-2-thio bis urea (2a) and phenyl-imino isocyanodichloride in refluxing chloroform medium followed by basification of resulting compound (3a-g). Compound (3) was converted to targeted molecule (5) by the base-induced condensation followed by basification. The compound (5a-g) on acetylation afforded mono acetyl derivatives. Structure of all the synthesized compounds has been confirmed on the basis of physical parameters, chemical tests and spectral studies. Final compounds were screened for antimicrobial activity.

Keywords:- 1,3,4-Thiadiazole derivatives Synthesis, Heterocyclic compound, Antimicrobial Activity, Biological effect.

The Role of Artificial Intelligence in Enhancing Women's Safety

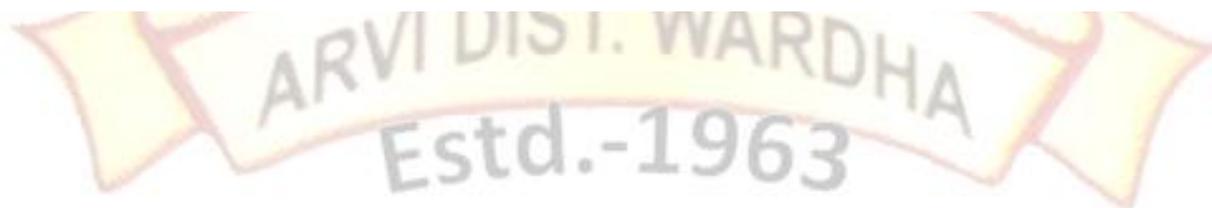
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Abstract

Artificial Intelligence (AI) has emerged as a transformative force across multiple sectors, including education, economy, and science. One of its most socially significant applications lies in addressing the persistent global challenge of women's safety. Women face risks such as physical violence, workplace harassment, cyber abuse, and restricted mobility in both public and digital spaces. This research paper explores the role of AI in enhancing women's safety through educational empowerment, economic inclusion, and scientific innovation. The paper analyses AI-driven tools such as intelligent learning systems, predictive crime analytics, smart surveillance, online harassment detection, and emergency response technologies. It also discusses ethical concerns, including privacy, bias, and misuse of AI. The study concludes that while AI has immense potential to improve women's safety, responsible governance, gender-sensitive design, and inclusive policies are essential to ensure its positive and equitable impact.

Keywords:- Artificial Intelligence, Women's Safety, Education, Economy, Science, Gender Equality, Smart Technologies.



Smart Recycling Technologies Using AI for Pollution Control

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Abstract

The growing volume of waste generated worldwide has emerged as a significant driver of environmental pollution, negatively impacting air, water, and soil quality. Traditional recycling methods often face challenges such as inefficient waste separation, limited processing efficiency, and high operational expenses, which undermine their effectiveness. To address these limitations, smart recycling technologies supported by artificial intelligence (AI) have gained recognition as an innovative approach to enhancing waste management practices and reducing environmental pollution. This paper investigates the contribution of AI-based smart recycling systems to pollution reduction and sustainable resource management. The research focuses on the integration of advanced AI technologies, including machine learning, computer vision, and robotic automation, across different stages of the recycling process. These technologies enable precise waste detection, classification, and sorting, resulting in improved recycling efficiency and lower contamination levels in recyclable materials. In addition, AI-powered systems support real-time monitoring and predictive analytics, helping recycling facilities optimize operational performance, decrease energy usage, and reduce material waste. The study further evaluates the environmental advantages of AI-enabled recycling solutions, particularly their role in lowering greenhouse gas emissions, preserving natural resources, and reducing reliance on landfills. Enhanced material recovery and reuse contribute to minimizing soil and water pollution while reinforcing circular economy practices. This work reports that artificial intelligence-driven smart recycling technologies hold considerable promise for effective pollution control and sustainable waste management. Achieving their full potential depends on supportive public policies, continued technological innovation, and greater public awareness to ensure long-term environmental and societal benefits.

Keywords:- AI powered recycling, Techniques, Environmental pollution, Pollution control.

The Impact of Artificial Intelligence on Traditional Educational System

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Abstract

Artificial intelligence is transforming traditional educational systems, offering personalized learning, automating tasks, and enhancing student outcomes. It is revolutionizing education by providing customized learning experiences and streamlining administrative tasks. A human and A.I. partnership is proposed to balance benefits and risks and improved engagement and efficiency. A.I. enhances personalized learning and student engagement which is not finding in traditional educational system. A.I. offers opportunities for improvement and challenges, careful integration, with educators at the center and enhances learning outcomes and educational efficiency. It promises more personalized, efficient, and inclusive learning environments. Traditional educational system struggles with curricula, teacher workload, and limited feedback loops. A.I. technologies like intelligent tutoring systems, learning analytics, generative models offer potential solutions to obstacles in traditional educational system. The role of teacher in traditional educational system is restricted with primary knowledge source, responsible for instruction, grading, and feedback while A.I. handles content delivery and routine assessment, freeing teachers for deeper interaction. The traditional educational system controlled by physical classroom size and teacher availability while A.I. based educational system can reach remote learners, scale to thousands of students, and provide all time support. So human and A.I. Collaboration brings effective models position as A.I. is a cognitive assistant for generating draft feedback, suggesting resources while teachers retain instructional design and moral judgment. A.I. influences on three core areas—pedagogy, administration, and assessment. A.I. offers transformative potential for traditional education, delivering personalization and operational efficiency, but its success depends on responsible stewardship, teacher empowerment, and continuous evaluation. With the help of A. I. a balanced, collaborative approach provides the most sustainable path forward for traditional educational systems.

Keywords:- Artificial intelligence, assessment, feedback, operational efficiency, sustainable path

Study of Honeybee Foraging Behaviour and Flower Morphology: A Comparative Study

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Abstract:

Study of Honeybee foraging behaviour and comparative study with flower morphology of selected Honeybee visiting plant species were undertaken in present study. The plants species were visited during flowering season and continuous field visits were made in Forest and agricultural lands from Hingoli district during the year 2022-2025. The studied species are *Aegle marmelos*, *Allium cepa*, *Azadirachta indica*, *Coriandrum sativum*, *Eucalyptus globulus*, *Moringa oleifera*, *Phyllanthus emblica*, *Punica granatum*, *Syzygium cumini*, *Tamarindus indica*, *Terminalia* Sp., *Tridax procumbens* and *Trigonella foenum*. The bee foraging activity was recorded to study the change in behaviour during visiting the specific flora. Honey bees were found to be visiting frequently on flowers which have red and yellow colour of petals and producing Nectar in amount 0.20 to 1.28 mL/100 Flowers. Such species are also obtained reward of large number of pollen grains.

Keywords:- Honeybee, Pollen grains, Hingoli.

Artificial Intelligence and Consumer Behavior: Emerging Trends in Marketing

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Abstract

Artificial Intelligence (AI) is reshaping the marketing landscape, fundamentally changing how companies comprehend, forecast, and influence consumer actions. The rapid advancements in digital platforms, big data analytics, and machine learning have allowed marketers to evolve from traditional mass-marketing tactics to personalized, data-centric strategies. AI-driven tools like predictive analytics, recommendation systems, natural language processing, sentiment analysis, and intelligent chatbots are being increasingly utilized to assess consumer preferences, predict buying behavior, and improve real-time customer engagement.

This paper investigates how AI influences consumer behavior and identifies key trends in AI-focused marketing strategies. Utilizing a conceptual and analytical research approach, it involves a thorough review of existing academic studies. The exploration includes significant applications of AI in marketing and how these affect consumer decision-making, brand perception, customer satisfaction, and loyalty. It particularly highlights the rising use of generative AI in marketing communications and content development, underscoring its ability to boost efficiency, creativity, and relevance in brand messaging.

Moreover, the paper discusses vital ethical and privacy concerns linked to AI in marketing, such as data security, consumer monitoring, algorithmic bias, and transparency. While AI-driven personalization offers extensive advantages for businesses and consumers alike, excessive data utilization and insufficient ethical protections could undermine consumer trust. The conclusion emphasizes that successfully integrating AI in marketing necessitates a balanced strategy that combines technological advancement with responsible data practices and consumer-focused approaches to maintain long-term trust and sustainability.

Keywords:- Artificial Intelligence, Consumer Behavior, Digital Marketing, Personalization, Predictive Analytics.

Role of Artificial Intelligence (AI) in Efficiency of Instruments & Edge Intelligence of Sensors

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Abstract

Integrating artificial Intelligence (AI) in scientific and industrial instruments marks a paradigm shift from passive data collection to intelligent, self-optimizing ecosystems. It is essential to recognize that AI is no longer a peripheral enchantment but the core engine driving the next generation of instrumental efficiency. By embedding machine learning algorithms directly into hardware interfaces, we can achieve unprecedented levels of precision, reliability, and speed that were previously limited by human intervention and traditional software constraints. The primary contribution of AI to instrumental efficiency lies in predictive maintenance and self-calibration; traditional instruments often suffer from "drift" of mechanical wear, leading to downtime and costly recalibration cycles. AI driven diagnostic tools can analyze subtle patterns in sensor data to predict component failure before it occurs and automate real-time calibration adjustments. This ensures that instruments maintain peak performance with minimal oversight, effectively eliminating unplanned outages in critical laboratory and industrial environments.

Furthermore, AI revolutionizes data throughput signal-to-noise ratios. In complex analytical fields like spectroscopy or electron microscopy, AI algorithms can filter background noise in real-time, extracting meaningful signals from massive datasets with superior accuracy. This "edge intelligence" allows instruments to process information locally, reducing the bandwidth required for data transfer and accelerating the transition from raw observation to actionable insight.

Finally, the autonomous optimization of experimental parameters enables instruments to "learn" the most efficient path to the result. Whether adjusting laser intensity in high-speed imaging or optimizing flow rates in chromatography, AI ensures that resources-time, energy and reagents-are used with maximal economy and instrumentation will be cornerstone of a more resilient, precise, and hyper-efficient scientific infrastructure.

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Awareness and Financial Literacy of Investment Avenues among Salaried Individuals: Empirical Evidence from Wardha District, Maharashtra

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Abstract

This study examines the level of awareness and financial literacy regarding various investment avenues among salaried individuals in Wardha District, Maharashtra. Using primary data collected from 2,000 salaried respondents, the study evaluates awareness across bank deposits, bonds and debentures, equity and derivatives, real estate, commodities, post office schemes, and other investment products. Descriptive statistics and one-sample t-tests were employed to test the hypotheses. The findings reveal that salaried individuals exhibit high awareness of traditional investment avenues such as bank deposits, insurance, real estate, and precious metals, while awareness of modern and market-linked instruments like corporate bonds, derivatives, and crypto currencies remains comparatively lower. The results confirm that although overall financial awareness exists, significant knowledge gaps persist in sophisticated investment products. The study highlights the need for targeted financial literacy programs to improve informed investment behavior and enhance household participation in capital markets.

Keywords:- Investment awareness, financial literacy, salaried people, deposit interest rate, Wardha district.

Role of Artificial Intelligence in Heterogenous Catalysis: Current Trends and Future Directions

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Abstract

Heterogenous catalyst is a material that accelerate the chemical reaction without consume in reaction and exists in heterogenous phase (solid) than the reactant or product. A numerous heterogenous catalyst have been reported but polymer-supported catalyst attracted more due to the convenience in handling, easy workup procedures, and reusability of the reagents. In the process of development in the synthesis of polymer-supported heterogenous catalyst by shifting outdated methods trial and error to collect data toward Artificial Intelligence (AI). AI can accelerate the process by allowing faster stimulation, recognizing optimization of reaction conditions and permitting sophisticated experimentation. The current trends of AI in heterogenous catalysis are accelerate the catalyst design and screening, optimization of synthetic reaction condition, automated experimentation, mechanism to understanding and data interpretation. In future AI may help to design novel catalyst based on human recruitment, integration of multimodal data and sustainable heterogenous catalyst development. AI may help to plan optimizing process to be more efficient and environmental benign, bring into line of green chemistry.

Keywords:- Heterogenous catalysis, Artificial Intelligence, Novel Catalysis.

AI in Education: Balancing Innovation with Ethical Responsibility

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Abstract

By enabling data-driven decision-making, intelligent tutoring systems, automated assessment, and personalized learning, artificial intelligence (AI) has completely transformed the teaching and learning process. AI has the potential to significantly increase productivity, accessibility, and student involvement in learning environments. Alongside these developments, important ethical concerns have emerged, including data privacy, algorithmic bias, lack of transparency, over-reliance on technology, and the marginalization of human judgment in education. This paper critically examines the dual role of AI as both an enabler of educational innovation and a source of ethical quandaries. Its significant ethical issues are student data protection, equity in assessments powered by AI, inclusivity, accountability, and the impact of AI on teacher autonomy and student agency.

The study emphasizes the need for ethical frameworks, responsible AI policies, and human-centric approaches to prevent technological advancement from undermining educational values. By encouraging a balanced approach that incorporates innovation, social responsibility, ethics, and transparency, the paper furnishes strategies for responsibly integrating AI in education. The study argues that for AI to be effectively utilized in education for sustainability and equity, ethical considerations must be taken into account at every stage of design, implementation, and governance.

Library Science in AI

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Abstract

Artificial Intelligence (AI) is rapidly transforming the field of Library and Information Science (LIS) by improving the way information is organized, accessed, and delivered to users. Traditional libraries mainly focused on manual cataloguing, classification, and reference services, but the integration of AI technologies has introduced automation, efficiency, and personalized user experiences. This study explores the role and impact of Artificial Intelligence in modern library science and highlights its applications, benefits, and challenges.

AI tools such as machine learning, natural language processing, chatbots, and expert systems are increasingly used in libraries for tasks like automated cataloguing, metadata generation, information retrieval, and digital preservation. Intelligent search systems help users find relevant information quickly by understanding user behavior and search intent. AI-based chatbots and virtual assistants provide reference services, reducing the workload of library professionals while improving user satisfaction.

Furthermore, AI supports collection development through data analysis and predictive modelling, helping libraries make informed decisions about resource acquisition. It also plays a significant role in managing big data, digital libraries, and institutional repositories. However, the adoption of AI in library science also presents challenges such as high implementation costs, lack of technical skills among library staff, ethical concerns, data privacy, and the fear of job displacement.

Despite these challenges, AI should be viewed as a supportive tool rather than a replacement for librarians. Human expertise remains essential for critical thinking, ethical decision-making, and user guidance. The study concludes that integrating Artificial intelligence will greatly improve library operations and services and will upgrade and heighten the relevance of libraries in an ever-changing digital society.

Artificial Intelligence Across the Spectrum of Chemistry Education Transforming Teaching, Learning, and Research

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Abstract

Artificial Intelligence (AI) is rapidly reshaping chemistry education by transforming traditional pedagogical approaches into intelligent, adaptive, and learner-centered systems. Across the educational spectrum—from secondary education to postgraduate and research training AI enhances conceptual understanding, laboratory instruction, assessment strategies, and curriculum development. In chemistry, where abstract concepts, complex mathematical formulations, and invisible molecular-level phenomena pose significant learning challenges, AI-driven tools such as intelligent tutoring systems, adaptive learning platforms, virtual laboratories, molecular visualization software, and data analytics offer effective solutions. These technologies support personalized learning, improve visualization of chemical structures and processes, enable safe and sustainable laboratory training, and facilitate automated yet insightful assessment of student performance. At advanced levels, AI contributes to research-oriented education by assisting in literature analysis, spectroscopic data interpretation, materials design, and predictive modeling, thereby bridging the gap between education and innovation. Furthermore, AI promotes inclusivity and accessibility by supporting multilingual learning and scalable educational models, aligning well with green chemistry principles and modern educational reforms. Despite challenges related to ethics, data privacy, and over-reliance on automation, the thoughtful integration of AI as a supportive tool rather than a replacement for educators—holds immense potential. This work highlights the transformative role of AI across the spectrum in chemistry education and emphasizes the need for a balanced human AI partnership to cultivate deeper understanding, innovation, and sustainability in chemical sciences.

Keywords:- Artificial Intelligence; Chemistry Education; Adaptive Learning; Intelligent Tutoring Systems; Virtual Laboratories; Molecular Visualization; Data Analytics; Research-Oriented Learning; Green Chemistry; Educational Innovation.

AI-Women Safety

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Abstract

Women's safety is a critical social issue affecting societies worldwide, both in physical and digital spaces. With the rapid advancement of technology, Artificial Intelligence (AI) has emerged as a powerful tool to enhance women's safety and security. AI-based systems such as smart surveillance cameras, facial recognition, behavior analysis, and predictive crime analytics help in monitoring public spaces and identifying potential threats in real time. Mobile safety applications powered by AI enable features like SOS alerts, live location tracking, voice recognition, and automatic emergency calls, providing immediate assistance to women during dangerous situations.

In addition, AI plays a significant role in combating cybercrime and online harassment by detecting abusive content, monitoring suspicious online behavior, and preventing digital violence against women. Law enforcement agencies benefit from AI-driven data analysis, which helps in crime prediction, faster investigations, and efficient resource allocation. However, the implementation of AI in women's safety also raises concerns related to data privacy, ethical use, surveillance misuse, and algorithmic bias.

Addressing these challenges through transparent policies and responsible AI development is essential. Overall, the effective and ethical use of Artificial Intelligence has the potential to significantly improve women's safety and contribute to the creation of a safer, more inclusive, and technologically empowered society.

The Role of Artificial Intelligence in Learning and Market Systems

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force reshaping both learning environments and market systems. In the domain of education, AI-driven technologies such as intelligent tutoring systems, adaptive learning platforms, and automated assessment tools have enabled personalized learning experiences that cater to individual learner needs. These systems analyse learner behavior, performance patterns, and preferences to enhance engagement, improve learning outcomes, and reduce educational disparities. AI also supports educators by automating administrative tasks, allowing them to focus more on mentoring and curriculum innovation.

In parallel, AI has significantly influenced market systems by optimizing decision-making, improving operational efficiency, and enabling data-driven strategies. Machine learning algorithms are widely used in market forecasting, customer behaviour analysis, supply chain optimization, and dynamic pricing models. AI-powered tools assist organizations in identifying trends, minimizing risks, and responding swiftly to market changes, thereby enhancing competitiveness and economic productivity. Furthermore, AI facilitates the growth of digital markets and e-commerce through recommendation systems, personalized marketing, and intelligent customer support.

Despite these advancements, the integration of AI in learning and market systems raises important ethical, social, and economic concerns. Issues related to data privacy, algorithmic bias, transparency, and workforce displacement require careful consideration and regulatory oversight. Ensuring responsible AI deployment is essential to maximize its benefits while minimizing potential risks.

This abstract highlights the evolving role of Artificial Intelligence as a catalyst for innovation in education and market systems. By fostering efficiency, personalization, and informed decision-making, AI continues to redefine how knowledge is acquired and how markets operate, emphasizing the need for balanced and ethical adoption across sectors.

Keywords:- Artificial Intelligence (AI), Learning Systems, Market Systems, Adaptive Learning, Machine Learning, Data-Driven Decision Making, Personalization, Market Forecasting, Digital Economy, Ethical AI.

Formulation And Evaluation of Oral Dissolving Films of Anacyclus Pyrethrum Extract: A Novel Approach for Oral Health

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Abstract

This study aimed to develop and evaluate oral dissolving films (ODFs) of Anacyclus pyrethrum extract, a herbal remedy with potential therapeutic benefits for various health conditions. The ODFs were prepared using a solvent casting method with varying concentrations of polymers, including hydroxypropyl methylcellulose (HPMC), polyvinyl alcohol (PVA), and polyethylene glycol (PEG). The films were evaluated for their physicochemical properties, such as thickness, folding endurance, tensile strength, and disintegration time. The optimized formulation showed satisfactory results in terms of film thickness (0.15 mm), folding endurance (120 folds), tensile strength (4.5 N/mm²), and disintegration time (30 seconds). The in vitro drug release study revealed that the optimized formulation released approximately 90% of the extract within 5 minutes, indicating a rapid release profile. The developed ODFs of Anacyclus pyrethrum extract offer a promising approach for improving patient compliance and therapeutic efficacy, particularly for patients with difficulty swallowing tablets or capsules. The ODFs can be a valuable alternative to traditional oral dosage forms, providing a convenient and patient-friendly delivery system.

Keywords:-

- Oral dissolving film (ODF)
- Anacyclus pyrethrum extract
- Solvent casting method
- Rapid release profile
- Patient-friendly delivery system
- Herbal drug delivery

Design, Synthesis and Computational Mechanistic Study of 1, 3-thiazole Derivatives to Constraint Cardiovascular Risk Factors

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Abstract

Cardiovascular diseases (CVD) remain the leading cause of global mortality, necessitating novel therapeutic agents targeting underlying risk factors. This study focuses on the design, synthesis, and computational evaluation of novel 1,3-thiazole derivatives aimed at modulating cardiovascular risk. Thirty-five novel thiazole analogues were designed using in silico approaches, including molecular docking and quantitative structure-activity relationship (QSAR) analysis, targeting the angiotensin-converting enzyme (ACE), a key regulator implicated in hypertension and cardiac dysfunction. Databases such as PubChem, ZINC, and Enamine confirmed the novelty of selected compounds. Molecular docking revealed promising binding affinities, particularly for compounds AP27, VP21, and VP20. ADME profiling indicated favourable drug-like properties and toxicity assessments predicted acceptable safety profiles. Eight lead compounds were synthesized via microwave-assisted methods and structurally characterized by IR, NMR, and mass spectroscopy techniques. Preliminary acute oral toxicity studies using OECD guidelines demonstrated non-lethal toxicity levels for selected compounds. The integrative approach of computational predictions and experimental validations suggests these novel thiazole derivatives as potential candidates for cardiovascular therapeutics. Further pharmacological and clinical evaluations are warranted to establish their efficacy and safety profiles.

Keywords:- Thiazole, Cardiovascular risk, Drug design, Molecular docking, QSAR

Big Data Analytics and Intelligent Query Advisory System for Real-time Financial Transaction Processing in Large-Scale Banking

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Abstract

Modern banks process millions of transactions every hour, creating massive amounts of data. However, their current systems struggle with slow query performance and delayed analytics problems that can impact fraud detection and customer insights. This research aims to build an intelligent query advisory system that works with big data technology to make financial transaction processing faster and smarter in real time. The project unfolds in four main stages: First, we design the overall architecture based on proven big data technologies like Apache Kafka and Spark SQL. Second, we build a scalable platform capable of handling 10 million transactions per hour while keeping response times under one second. Third, we develop an intelligent engine using machine learning techniques including neural networks and advanced algorithms to automatically suggest the best ways to execute queries, speeding them up by around 60% on average. Finally, we integrate everything into a live system for real-world banking tasks like detecting fraud, understanding customers, and assessing risk all happening in less than half a second. Our goals are ambitious: we want to make queries 80% faster, ensure 95% of banking queries respond in under one second, and cut down computer resource usage by half. We'll test our system using real Indian banking data (UPI and NEFT transactions) and measure it against industry standards. We also plan to publish our findings in top research conferences and create India's first banking transaction benchmark dataset. Ultimately, this research takes intelligent query concepts and applies them specifically to banking, solving real scalability challenges that banks face today.

Keywords:- Big Data, Query Optimization, Real-Time Analytics, Machine Learning, Fraud Detection.

Applications of Artificial Intelligence in Scientific Research

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Artificial Intelligence (AI) has become a powerful and essential tool in modern scientific research. It helps researchers handle large volumes of data, analyse complex patterns, and generate accurate results efficiently. AI technologies such as machine learning, deep learning, data mining, and natural language processing support researchers in improving the speed, quality, and reliability of scientific studies. By automating data analysis and repetitive tasks, AI allows scientists to focus more on interpretation, innovation, and decision-making.

In natural sciences such as physics, chemistry, biology, and environmental science, AI is widely used for data modelling, prediction, and simulation. In life sciences, AI plays a significant role in medical research, including disease diagnosis, drug discovery, genomics, and clinical data analysis. These applications reduce experimental time and cost while improving accuracy. In engineering and material science, AI supports design optimisation, fault detection, and performance evaluation through intelligent models and simulations.

AI also contributes to social science and humanities research by analysing large-scale survey data, digital records, and textual information. Techniques such as sentiment analysis and trend detection help researchers understand social behaviour and patterns more effectively. AI-driven laboratory automation improves reproducibility of experiments and reduces human errors, thereby enhancing research credibility.

Despite its many advantages, the successful application of AI in scientific research depends on the availability of quality data, ethical use of algorithms, transparency, and adequate technical skills among researchers. Training and awareness are necessary to ensure responsible and effective use of AI technologies. Overall, Artificial Intelligence acts as a supportive tool that enhances human intelligence, increases research productivity, and accelerates scientific discoveries across disciplines.

Keywords:- Artificial Intelligence, Scientific Research, Machine Learning, Data Analysis, Automation.

The New Literacy: Exploration of the Social, Ethical, and Affective Domains of AI Literacy in Higher Education

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Abstract

As Artificial Intelligence becomes commonplace in higher education, the meaning of literacy is radically changing. It is no longer sufficient for students to learn to operate hardware; they must learn to live in a world in which machines generate ideas, text, and art. While most research focuses on technical skills such as prompt engineering, the current study underlines the "human" dimension of the technology. The study explores the ways in which AI literacy shapes social interaction, moral decision-making, and the mental well-being of university students. In this research, AI literacy is seen as a "new literacy" important for personal and professional life. The study points toward an important paradigm in how we handle education; it's no longer a question of providing courses in artificial intelligence but instead one of incorporating artificial intelligence literacy within traditional educational frameworks. An important aspect in reaching this goal "involves shifting the discussion from 'how' - or how things work - toward 'why' or 'should' - or why we're even bothering with it at all." Socially, the study examines the role in which artificial intelligence poses concerning communication in the classroom environment. Ethically, it seeks an understanding concerning representation and prejudice in academic work. The emotional study examines the fear and assurance levels in artificial intelligence's presence within education preparation for an automated workforce in the future. However, if the emphasis is moved to include human judgment, it is then possible for the university itself to go beyond the production of computer-savvy students and instead aspire to the production of ethical leaders and emotionally intelligent citizens. It gives educators a roadmap to build a classroom environment in which human critical thought is just as important as computer literacy. It gives us the following conclusion: **"The new literacy sought in the new century is a literacy of empowerment enabling student leaders to lead humanly in an artificial intelligence kind of world."** This study followed an analytical design of Textual Analysis of university policy documents, syllabi, and academic integrity statements from different leading institutions & Universities.

Artificial Intelligence and the Future of Employment: Opportunities and Challenges for Emerging Economies

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Abstract

Artificial Intelligence (AI) is rapidly transforming global labour markets by reshaping employment structures, enhancing productivity, and influencing patterns of economic growth. While developed nations have swiftly integrated AI technologies across industrial and service sectors, emerging economies face a distinct set of opportunities and challenges due to differences in workforce composition, skill availability, and institutional capacity. This paper explores the implications of Artificial Intelligence for the future of employment in emerging economies, focusing on its potential to stimulate job creation, improve operational efficiency, and support inclusive economic development, alongside the risks of workforce displacement, skill gaps, and widening socioeconomic inequalities. The study adopts a qualitative and analytical research approach based on an extensive review of secondary sources, including academic publications, international labour reports, and policy documents. The analysis reveals that AI-driven innovations can generate new employment opportunities in areas such as data analytics, AI system supervision, digital platforms, and technology-enabled entrepreneurship, particularly within micro, small, and medium enterprises. In addition, the application of AI across key sectors such as agriculture, healthcare, finance, and manufacturing has the capacity to increase productivity, optimize resource utilization, and expand access to essential services in developing economies. Despite these benefits, the research identifies significant challenges, including the automation of routine and low-skilled jobs, unequal access to digital infrastructure, and limited reskilling and upskilling mechanisms. If inadequately addressed, these factors may intensify unemployment and income inequality. The paper underscores the necessity of proactive policy interventions to ensure a smooth transition toward an AI-driven labour market. Key policy recommendations include strengthening education systems, promoting continuous skill development, improving digital infrastructure, encouraging inclusive AI adoption, and establishing effective social protection frameworks. By aligning technological advancement with human capital development and inclusive governance, emerging economies can harness AI as a catalyst for sustainable employment generation and long-term economic resilience.

The Transforming role of AI in library services

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Abstract

The integration of Artificial Intelligence (AI) in library services is transforming the way libraries operate and provide services to their users. This paper explores the transformative role of AI in library services, highlighting opportunities, challenges, and future directions. AI technologies such as machine learning and natural language processing are being applied in libraries to automate tasks, enhance user experiences, and improve operational efficiency.

AI-powered applications in libraries include cataloging and classification, user services, content recommendation, and digital libraries. These applications have improved efficiency, enhanced user experience, and increased accessibility. However, challenges such as data quality, bias and fairness, security, and privacy need to be addressed.

This paper discusses case studies of libraries that have successfully implemented AI-powered services, highlighting best practices and lessons learned. The future directions of AI in libraries include AI-driven personalization, collaborative AI, and ethical AI. Recommendations include developing AI strategies, investing in staff training, and monitoring AI systems.

The paper concludes that AI has the potential to revolutionize library services, but it requires careful planning, implementation, and evaluation. By addressing the challenges and leveraging the opportunities, libraries can harness the power of AI to provide better services to their users and stay relevant in the digital age.

Artificial Intelligence useful for Women's Health containing Innovations, Challenges and Ethical Considerations

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force in various fields of healthcare, including women's health. AI applications in women's health have the potential to revolutionize disease prevention, detection and treatment. However, to fully realize these benefits, challenges related to data bias, privacy, regulation, and ethics must be addressed. Ethical considerations and responsible use of AI technologies will play an important role in shaping a future where AI empowers and improves the lives of women in the realm of healthcare. By embracing AI innovations while honouring ethical principles, we can strive for a more inclusive and progressive healthcare system for women worldwide. In this way, AI can contribute to a better understanding of women's health, more personalized and effective health care, and better health outcomes for women to the benefit of all.

Keywords:- Artificial Intelligence, Women's Health ,Innovation

Artificial Intelligence and Big Data Analytics in Scientific Research: Applications, Challenges and Future Directions

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Abstract

Artificial Intelligence (AI) and Big Data Analytics have emerged as transformative technologies in modern scientific research. The exponential growth of structured and unstructured scientific data has created significant challenges for traditional research methodologies in terms of data processing, integration, and interpretation. This study addresses the problem of managing large-scale scientific datasets and explores how AI-driven analytical approaches can enhance research efficiency, accuracy, and knowledge discovery.

The primary objective of this research is to examine the role of artificial intelligence and big data analytics in improving scientific research processes. The study adopts a systematic literature review methodology supported by analytical comparison of recent research models. Scholarly articles, conference proceedings, and reputable academic databases were reviewed to identify current trends and technological advancements. Machine learning and deep learning techniques are analyzed for their capability in predictive modeling, pattern recognition, and automated decision support. Particular emphasis is placed on Computer Vision applications for image-based scientific analysis and Natural Language Processing (NLP) techniques for extracting meaningful insights from large volumes of scientific text.

The findings indicate that the integration of AI with big data analytics significantly accelerates scientific discovery by improving data accuracy, reducing manual analysis, and enabling scalable research frameworks. These technologies contribute to enhanced reproducibility, interdisciplinary collaboration, and intelligent research automation. However, the study also identifies key challenges including data quality limitations, algorithmic bias, interpretability of AI models, ethical concerns, and infrastructure constraints.

The paper concludes that AI and big data analytics represent essential tools for future scientific research. Addressing existing challenges through explainable AI models, standardized data governance, and interdisciplinary collaboration will be crucial for developing reliable and sustainable intelligent research ecosystems.

सौ. सरिताताई गाखरे यांचे सांस्कृतीक कार्य

तिर्थनंदन बन्नगरे

स्व. वसंतराव कोल्हटकर कला महाविद्यालय, रोहणा

सारांश (Abstract) :-

भारतातील संविधानाने सर्व स्त्री-पुरुषांना समान राजकीय आणि नागरी हक्क प्रदान केलेले आहेत. या घटनेच्या कलम 324 आणि 326 प्रमाणे महिलांना मतदान करण्याचा आणि निवडणूक लढविण्याचा राजकीय अधिकार प्राप्त झाला आहे. तसेच संविधानाने मूलभूत अधिकारांची हमी देतांना मार्गदर्शक तत्वामध्ये लिंगभेदाच्या पलीकडे जावून स्त्री-पुरुषांचे आर्थिक, सामाजिक सक्षमीकरण सुनिश्चित केले. इ.स. 1951 च्या पहिल्या ते इ.स. 2024 च्या अठराव्या लोकसभा निवडणुकांपर्यंत नजर टाकली असता, स्त्रीयांचा राजकीय क्षेत्रात वावर निश्चितपणे वाढला आहे. स्त्रीया मतदार म्हणून अधिक जबाबदारीने आणि बहुसंख्येने आपला अधिकार बजावतांना दिसते. यामध्ये ग्रामीण आणि वंचित घटकातील स्त्रीयांचे प्रमाण जास्त आहे. राज्यातील अनेक जिल्हयांपैकी वर्धा जिल्हा एक आहे. या जिल्हयातील स्त्रीयाही राजकारणात मागे नसल्याचे दिसून येते. पुरुषप्रधान संस्कृतीत समाजाचे नैतृत्व निर्माण करणा-या सौ. सरिताताई गाखरे यांनी राजकीय क्षेत्रात मिळालेल्या संधीच सोनं केलं.

कारंजा (घा.) काटोल तहसिलच्या मध्ये असणा-या कार नदीच्या काठावर वसलेले कोल्हू हे लहानसे गाव नागपूर जिल्हयाच्या काटोल तहसिल मध्ये आहे. या गावी सरिताताईचा 5 एप्रिल 1985 रोजी जन्म झाला. त्यांचे वडील हनुमंतराव देशमुख यांनी राजकारणात जाण्यास पाहीजे तेवढे कन्येला प्रोत्साहन दिले नाही.

तरी पण या सरिताताई यांचा विवाह 22 मे 2003 ला धर्तीमूर्ती गावचे श्रीमंत विजय मनोहरराव गाखरे याचेशी झाला. त्यांचे पती पूर्वीपासूनच राजकारणात सक्रीय होते. 2017 मध्ये सरिताताईनी वर्धा जिल्हयातील कारंजा तालुक्यातील कन्नमवार गट क्र. 05 मधून जिल्हा परिषदेची निवडणूक लढविली. त्या 6322 मतांनी विजयी झाल्या. फेब्रू. 2017 मध्ये जि.प. सदस्यत्व प्राप्त केले. कालांतराने 6 जाने. 2020 मध्ये सरिताताई वर्धा जिल्हा परिषदेच्या अध्यक्षपदी विराजमान झाल्या. आपले कारकिर्दीत त्या फेब्रू. 2020 मध्ये आयोजित शिवजयंती कार्यक्रमात आर्वी जळगाव येथे सहभागी झाल्या. कोरोना काळात श्रीक्षेत्र संत लहानुजी महाराज टाकरखेडा येथील मंदीर उघडावे, याकरीता त्यांनी घंटानाद केला. आदीवासी (गोंड) समाजाची सांस्कृतीक अडचण लक्षात घेवून त्यांचेकरीता आर्वी येथे कुंआरा भिवसेन सभागृह बांधून दिले. मार्च 2020 पासून वर्धा जिल्हयावर आलेले कोरोना संकट दुर होण्याकरीता काटोल शहरात आपले माहेरी स्थापना झालेल्या गणेशाला साकडे घातले. तसेच वर्धा शहरात महात्मा गांधी सद्भावना रॅलीत सरिता गाखरे हिरीरीने सहभागी झाल्या. त्यांच्या जिल्हा परिषद अध्यक्षपदाची दाखल घेवून सुकळीबाई येथील विठ्ठल रुखमीनी संस्थान तर्फे सत्कार करण्यात आला. जिल्हयाच्या कानाकोप-यातील सौंदर्यीकरण करण्याचा विडा उचललेल्या सरिताताईने नारा गावातील डॉ. बाबासाहेब आंबेडकर पुतळा परिसर सौंदर्यीकरणाकरीता भूमीपुजन केले. त्या येथेच थांबल्या नाही तर जिल्हा परिषद सभागृहाला समाजसेविका सिंधुताई सपकाळ यांचे नाव दिले.

AI-Guardian: The Invisible Bodyguard That Predicts Danger and Acts Before You Have To

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Abstract

In today's world, safety shouldn't depend on a button. Most safety apps today have a major flaw: they are "reactive." They wait for a woman to unlock her phone and call for help. But in a real emergency, every second counts, and reaching for a phone is often impossible. AI-Guardian changes this by becoming a proactive, "always-on" protector.

This system works in three smart ways: It predicts, senses, secures.

By combining AI, smart sensors and cloud storage, AI-Guardian moves from just "sending an alert" to "preventing the crime," giving women the confidence to move freely and safely.

Keywords:- Invisible protection, smart routing, hands-free SOS, digital witness, threat intelligence.

When Machines Read: Artificial Intelligence and the Transformation of Literary Analysis

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Abstract

The swift and far-reaching advancement of Artificial Intelligence (AI) has begun to redraw the intellectual contours of numerous academic disciplines, and literary studies are no exception. Long anchored in human imagination, critical reflection, historical consciousness, and aesthetic sensibility, literary analysis has traditionally been regarded as an exclusively human enterprise. Yet the arrival of AI-driven technologies—capable of text mining, pattern detection, and sophisticated language modeling—has introduced new modes of reading that challenge and extend established critical practices. These developments invite a reconsideration of how literature is approached, interpreted, and taught in the contemporary academic landscape.

This paper explores the evolving impact of AI on literary analysis by examining its principal applications, benefits, constraints, and ethical implications. It engages with AI-based methodologies such as stylometry, sentiment analysis, topic modeling, and digital humanities research, which enable scholars to traverse vast literary corpora with unprecedented speed and analytical precision. Such tools illuminate patterns of authorship, thematic recurrence, linguistic texture, and emotional movement across texts, thereby broadening the horizons of traditional close reading without displacing its interpretative depth.

At the same time, the study remains attentive to the limitations of algorithmic interpretation. AI systems, for all their computational power, remain ill-equipped to grasp cultural nuance, symbolic resonance, irony, and emotional complexity—elements that lie at the heart of literary meaning. The paper also foregrounds ethical concerns surrounding authorship, academic integrity, algorithmic bias, and the uncritical reliance on automated readings.

Ultimately, the study argues for a balanced, human-centered approach in which AI serves not as a substitute for literary judgment but as a generative companion to human insight. By integrating technological literacy with critical theory, literary studies can embrace AI responsibly, ensuring that the discipline's interpretative richness and humanistic values continue to flourish in the age of intelligent machines.

Artificial Intelligence in Synthesis and Characterization of High Performance Polymers

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Abstract

AI recommends polymerization mechanisms, monomers and conditions from datasets of over 11,000 polymers, streamlining recipes. In processing, it maximizes throughput, reduces waste, and adjusts parameters in real-time for custom synthesis like drug delivery polymers. Multi-agent systems integrate this with natural language interfaces for complex tasks. AI significantly accelerates polymer science by predicting properties, designing new materials, and optimizing synthesis processes before lab work. This data-driven approach reduces trial-and-error, cuts costs and enables tailored polymers for applications like electronics and sustainability. Generative AI and virtual screening create novel polymers by combining "polymer genes" or using rule-based reactions to explore vast chemical spaces. High-throughput methods identify top candidates for validation, leading to high-performance materials for aerospace and energy storage. Tools like polymer fingerprints handle multiscale structures effectively. Machine learning models trained on polymer data forecast traits like thermal stability, tensile strength, and molar mass distributions from molecular structures. Techniques such as graph neural networks and kernel density regression achieve high accuracy ($R^2 > 0.99$), even with limited data via transfer learning. This allows screening millions of candidates quickly, as in NREL's PolyID tool. Dramatic challenges lay in data scarcity and quality limit model reliability though open science and multifidelity learning help. Complex multiscale structures require advanced representations like BigSMILES extensions. Interpretability and synthesizability of AI suggestions remain hurdles for practical use.

Keywords:- Artificial Intelligence, High performance polymers, Characterization, Generative AI.

कृत्रीम बुध्दीमत्ता आधुनीक उद्योगांमधील एक क्रांती

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सारांश – (Abstracts)

आज निरनीराळ्या क्षेत्रात AI चा वापर होत असतांना व त्याचा विकासाला फायदा होत असतांना उद्योगात सुध्दा AI तंत्राचा उपयोग केल्यास उद्योगात संतुलन साधण्याबरोबर उत्पादन वाढ व व्यापार विस्तृत होण्यास मदत होते. किरकोळ विक्री - खरेदीचा अनुभव वैयक्तीकृत करण्यासाठी, उत्पादनाची शिफारस करण्यासाठी आणि इन्वेंटरी व्यवस्थापीत करण्यासाठी AI चा वापर करता येतो. वाहतुक, स्वयं चालीत मोटार, विकसीत करण्यासाठी आणि वाहतुक व्यवस्थापन सुधारण्यासाठी AI चा वापर केल्या जात आहे. उर्जा कार्यक्षमता सुधारण्यासाठी आणि उर्जेची मागणी इत्यादींचा अंदाज घेण्यासाठी AI चा वापर केल्या जात आहे. कृत्रीम बुध्दीमत्ता अर्ज डाटा पॅटर्न एकत्रीत करण्यासाठी, डीप लर्निंग तंत्रे, चांगल्या ग्राहकांचे आकलन, इन्वेंटरी मॅनेजमेंट, शिफारस प्रणाली, उत्पादने सर्च करणे तसेच पध्दतशीर विक्री प्रक्रीया, सुधारीत ग्राहक सेवा तसेच चांगली निर्णय क्षमता, विक्री नंतर ग्राहकांना द्यावयाच्या सेवा, सायबर सुरक्षा इत्यादी गोष्टी AI च्या माध्यमातुन साध्य करणे शक्य होते. डिजीटल प्लॅटफॉर्म ने रिट्रेसर्स तसेच खरेदीदारांसाठी जिवन सोपे केले आहे. इकॉमर्स वेबसाईटवर त्यांच्या विक्रीमध्ये मोठ्या प्रमाणात वाढ घडुन येतांना दिसुन येत आहे. कृत्रीम बुध्दीमत्तेमुळे ई कॉमर्स च्या संशोधन क्षेत्रात वाढ होवुन ई-कॉमर्सच्या विक्रीचा फायदा होतांना दिसुन येत आहे.

इतकेच नव्हे तर उद्योग क्षेत्रात AI च्या वापराने, उत्पादन, नफा-तोटा खर्च, धोके, ग्राहक सेवा, नैसर्गिक आपत्ती, वस्तु स्वरुप बदलवीने, विमा, बाजारपेठ, जाहीरात, विक्रयकला या सर्व गोष्टींच्या वापरातुन उद्योग व्यवसाय भरभराटीस आणण्यास शक्य झाले आहे.

प्रस्तुत शोध निबंधात कृत्रीम बुध्दीमत्ता आधुनिक उद्योगांमधील एक क्रांती या अनुशंगाने शोध घेण्याचा प्रयत्न केला आहे.

ए आय तंत्रज्ञानाचा भाषिक- वाड्मयीन विश्लेषणावरील परिणाम : काही नोंदी काही निरीक्षणे

अण्णा वैद्य .

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सारांश (Abstract)

अलीकडल्या काळामध्ये ए.आय अर्थात कृत्रिम बुद्धिमत्ता हे तंत्रज्ञान संपूर्ण जगात प्रभावी ठरत असल्याचे चर्चा सर्वत्र होत आहे. या तंत्रज्ञानाने मानवीविज्ञान विद्याशाखेतील भाषेच्या क्षेत्रात प्रवेश केला आहे. त्याचे सकारात्मक प्रभाव व नकारात्मक परिणाम अलीकडे दिसून येते आहे. मानवी सर्जनशीलता, भाषिक विश्लेषणात्मक बुद्धिमत्ता, वाड्मयीन चिकित्सा, समीक्षा, वाड्मयीन शैली या सर्वांवर कृत्रिम बुद्धिमत्तेचा परिणाम होतो आहे.

जगामध्ये प्रत्येकच वेळी असे जेव्हा तंत्रज्ञान नव्याने येते तेव्हा त्या तंत्रज्ञानाचे सकारात्मक व नकारात्मक असे दोन्ही पैलू समाज स्वीकारत असतो. चाट जी पी टी, मेटा, असे हे संगणकाचे अप्लिकेशन मानवाच्या सामान्य बुद्धिमत्तेच्या पुढे जाऊन त्याला हवी ती चिकित्सा व समीक्षा करून देणार आहे. वाड्मयीन अथवा भाषेच्या क्षेत्राचा विचार केल्यास तिथे स्वयं चिकित्सा, चिंतन हे आपापल्या क्षमतेनुसार आकलनशक्तीला धरून प्रकट होत असते. अशा वाड्मयीन व भाषिक क्षेत्रात जर कुणी ए आय चा आधार घेऊन मशीनद्वारे, ॲप द्वारे भाषिक चिकित्सा, एखाद्या कलाकृतीचे आशय विश्लेषण अथवा एखाद्या कलाकृतीची साधक बाधक समीक्षा शोधण्याचा प्रयत्न करेल तर, ती कृत्रिम मांडणी त्याला यंत्राद्वारे, ॲप द्वारे मिळेल.

आता अलीकडच्या काळात काही प्रमाणात मिळते आहे. कालांतराने हे जर अधिक प्रमाणात उपलब्ध होत राहिल्यास, ए आय ने केलेली समीक्षा व मानवी बुद्धीची समीक्षा हे शोधण्यासाठी वेगळी यंत्रणा उभी करण्याची वेळ येईल. सर्व भाषिक वाड्मयीन व्यवहार गढूळ होईल ही भीती आहे. चिंतनाची जागा मशीन ने घेतली तर भाषिक चिंतन एकसुरी होण्याची भीती आहे. म्हणूनच ए आय तंत्रज्ञानाचा भाषिक वाड्मयीन विश्लेषणावरील परिणाम हा समीक्षा चिकित्सा व आकलन व्यवहार गढूळ होईल. वारंवार समीक्षेला प्लगरिझम अथवा चौर्य प्रक्रियेतून तपासणी करावी लागेल.

नवीन शिक्षण पध्दतीचे चिकीत्सक अध्ययन

काशिनाथ मानमोडे

पंडीत नेहरु कॉलेज, वाडी

सारांश : (Abstract)

प्राचीन काळांमध्ये आर्यांनी शैक्षणिक धोरणात स्पष्टता आणल्यामुळे स्थानिक लोकांना विद्याप्राप्त करणे महत्त्वपूर्ण ठरले. ऋषी, महर्षी, ब्रम्हर्षी यांना मान प्राप्त झाला. त्यानंतर मौर्य काळात समाजाचे राहणीमान उंचावण्याकरीता जास्तीत जास्त प्रोत्साहन शिक्षणाला मिळाले. त्याकरीताच नालंदा आणि तक्षशिला विद्यापीठाची स्थापना झाली.

कालांतराने सत्तेवर आलेल्या मुगल सम्राटांनी शिक्षण पध्दतीत पाहीजे तसे बदल केले नाही. परंतु इंग्रजांच्या आगमनानंतर मिशनरी लोकांनी ख्रिश्चन धर्माचा प्रसार करण्याच्या दृष्टीने शिक्षणाचा प्रसार केला. इ.स. 1871 मध्ये गव्हर्नर जनरल लॉर्ड हेस्टिंग्जने कलकता येथे मदरसा आणि बनारस येथे संस्कृत महाविद्यालयाची स्थापना केली. या महाविद्यालयामधून संस्कृत भाषेतून शिक्षण घेणे, ख्रिश्चन मिशनरींना पटले नाही म्हणून ईस्ट इंडीया कंपनी आणि मिशनरी मधील मतभेद दिवसेंदिवस वाढत गेले. अखेर राजाराम मोहन रॉय यांनी भारतीय लोकांना जगात काय चालले आहे हे कळावे याकरीता भारतीयांनी शिक्षण इंग्रजीमधून घ्यावे असे विचार व्यक्त केले. मुठभर इंग्रज लोक आपल्या देशाचा भविष्यकाळ ठरवित होते. पुढे लॉर्ड मेकॉलेने व्यापार आणि राज्यकारभार करण्याच्या दृष्टीने इंग्रजी भाषेचे समर्थन केले. त्याकरीता इंग्रजांची ईस्ट इंडीया कंपनी शिक्षणाकरीता दर वीस वर्षांनी चार्टर अक्ट सुधारीत असे. त्या अनुषंगाने इ.स. 1813 मध्ये एक लाख रुपये मिळणा-या अनुदानाचे इ.स. 1833 मध्ये दहा लाख रुपये झाले. इ.स. 1853 मध्ये चार्ल्स वुड च्या अहवालानुसार भारतातील शिक्षण पध्दतीचा पाया मजबुत झाला. त्या अनुषंगाने इ.स. 1857 मध्ये कलकता, मुंबई, मद्रास विद्यापीठाची स्थापना झाली. या विद्यापीठांतर्गत अनेक महाविद्यालयाची उच्च शिक्षणाकरीता स्थापना झाली. त्या महाविद्यालयांमध्ये नागपूरचे हिस्लॉप आणि मॉरीस कॉलेजची अनुक्रमे इ.स. 1883 आणि 1885 मध्ये स्थापना झाली. नव्याने स्थापन झालेल्या ब-याच महाविद्यालयांमधून अभियांत्रिकी, वैद्यकशास्त्र, गणित, रसायनशास्त्र विषयांमध्ये अनेक विद्यार्थी प्राविण्य दाखवू लागले. द्वितीय महायुद्ध काळात इ.स. 1944 मध्ये सार्जेंट अहवालानुसार शिक्षण पध्दती अंमलात आली. पुढे इ.स. 1947 मध्ये भारत स्वतंत्र झाल्यावर शैक्षणिक पुर्नबांधणीचे दृष्टीने वेगवेगळ्या आयोगांनी इ.स. 1948 ते 2009 पर्यंत अनेक शिफारशी केल्या. एप्रिल 2010 मध्ये जगात बालकांचा मुलभूत हक्क मिळून देणारा भारत हा एकमेव देश ठरला.

या दृष्टीने देशाचे पंतप्रधान नरेन्द्र मोदी यांचे नेतृत्वात 2020 मध्ये एकविसाव्या शतकाच्या गरजा लक्षात घेवून नवे शैक्षणिक धोरण अंमलात आणले. या धोरणात संस्थांची पुर्नरचना, बहूशाखीय शिक्षण, त्याकरीता विद्यार्थ्यांना आर्थिक मदत देणे, शिक्षकांचे शिक्षण, व्यावसायिक शिक्षण, प्रौढ आणि निरंतर शिक्षण, भारतीय भाषा, कला आणि संस्कृतीला प्रोत्साहन, विविध तंत्रज्ञानाचा वापर आणि एकात्मिकरण तसेच ऑनलाईन शिक्षणाची प्रभावी अंमलबजावणी करण्याची तरतुद आहे.

Ethnobotanical Documentation of Indigenous Medicinal Practices in Wardha District, Maharashtra

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Abstract

Ethnobotanical knowledge remains a vital component of traditional healthcare systems among indigenous communities. The present study documents medicinal plant-based practices followed by tribal communities of Wardha District, Maharashtra, India. Field surveys were conducted in selected tribal villages using semi-structured interviews and interactions with traditional healers and knowledgeable informants. Data on vernacular names, plant parts used, preparation methods, dosage, and therapeutic applications were systematically recorded. The study documented several medicinal plant species belonging to diverse angiosperm families, commonly used to treat ailments such as fever, gastrointestinal disorders, skin infections, respiratory complaints, wounds, and urinary tract disorders. Leaves were the most frequently utilized plant part, followed by roots, bark, seeds, and whole plants. Remedies were primarily prepared as decoctions, pastes, powders, and fresh extracts. The findings highlight the richness of indigenous medicinal knowledge and emphasize the need for its conservation and scientific validation in view of rapid socio-cultural and environmental changes.

Keywords -Ethnobotanical knowledge, indigenous communities, conservation, Wardha district.

Artificial Intelligence and Big Data Analytics in Scientific Research: Applications, Challenges and Future Directions

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Abstract

Artificial Intelligence (AI) and Big Data Analytics have emerged as transformative technologies in modern scientific research. The exponential growth of structured and unstructured scientific data has created significant challenges for traditional research methodologies in terms of data processing, integration, and interpretation. This study addresses the problem of managing large-scale scientific datasets and explores how AI-driven analytical approaches can enhance research efficiency, accuracy, and knowledge discovery.

The primary objective of this research is to examine the role of artificial intelligence and big data analytics in improving scientific research processes. The study adopts a systematic literature review methodology supported by analytical comparison of recent research models. Scholarly articles, conference proceedings, and reputable academic databases were reviewed to identify current trends and technological advancements. Machine learning and deep learning techniques are analyzed for their capability in predictive modeling, pattern recognition, and automated decision support. Particular emphasis is placed on Computer Vision applications for image-based scientific analysis and Natural Language Processing (NLP) techniques for extracting meaningful insights from large volumes of scientific text.

The findings indicate that the integration of AI with big data analytics significantly accelerates scientific discovery by improving data accuracy, reducing manual analysis, and enabling scalable research frameworks. These technologies contribute to enhanced reproducibility, interdisciplinary collaboration, and intelligent research automation. However, the study also identifies key challenges including data quality limitations, algorithmic bias, interpretability of AI models, ethical concerns, and infrastructure constraints.

The paper concludes that AI and big data analytics represent essential tools for future scientific research. Addressing existing challenges through explainable AI models, standardized data governance, and interdisciplinary collaboration will be crucial for developing reliable and sustainable intelligent research ecosystems.

Evaluation of Women Entrepreneurs Through Financial Assistance Schemes

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Women entrepreneurship plays a significant role in economic development and social empowerment; however, women entrepreneurs continue to face multiple financial, social, and institutional barriers. This study examines the effectiveness of financial assistance schemes in promoting women entrepreneurship in the districts of Vidarbha of Maharashtra. The research focuses on assessing the level of awareness, accessibility, and impact of government and organizational financial schemes, while identifying key challenges faced by women entrepreneurs, particularly in rural and semi-urban areas.

The study is based on primary data collected from 150 women entrepreneurs using a structured questionnaire. Inferential statistical tools, including Pearson correlation, t-test, and chi-square test, were employed to analyze the relationship between financial assistance schemes and business growth, as well as regional differences in access and challenges. The findings reveal a moderate positive and statistically significant relationship between awareness of financial assistance schemes and business success ($r = 0.35$, $p = 0.000$). The t-test results indicate that women entrepreneurs in districts of Vidarbha of Maharashtra have benefited more from financial assistance schemes than those in rest of Maharashtra areas, with a medium to large effect size ($t = 6.74$; effect size = 0.63). The chi-square analysis further confirms significant regional differences in barriers to accessing financial assistance, particularly regarding financial literacy and information availability.

The study concludes that financial assistance schemes play a crucial role in enhancing the growth, confidence, and leadership capabilities of women entrepreneurs, while also contributing to broader socio-economic empowerment and gender equality. The research highlights the need for improved awareness initiatives, effective policy implementation, and region-specific interventions to strengthen the impact of financial assistance programs and promote sustainable women entrepreneurship in Maharashtra.

A Study of Use of AI in Inflation Prediction and Monetary Policy Decisions

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Abstract

Accurate inflation forecasting is fundamental to the formulation of effective monetary policy, as it directly influences interest rate decisions, price stability, and overall macroeconomic performance. Conventional econometric models have long been employed for this purpose; however, their effectiveness is often constrained by assumptions of linearity, limited adaptability, and challenges in processing large and complex datasets. With rapid advancements in computational technologies, Artificial Intelligence (AI) has gained prominence as a powerful alternative for enhancing inflation prediction and supporting monetary policy decisions. This study investigates the application of AI-based models in forecasting inflation and examines their relevance for modern monetary policy frameworks. The paper analyses various AI techniques, including machine learning and deep learning methods such as neural networks, decision trees, support vector machines, and ensemble models, highlighting their ability to identify nonlinear relationships and dynamic patterns in macroeconomic indicators. Through an analytical review of empirical research and practical implementations, the study compares AI-driven forecasting outcomes with traditional statistical approaches. The research further evaluates how AI-generated insights assist policymakers in making timely and informed decisions related to inflation targeting, interest rate adjustments, and macroeconomic stabilization. The findings suggest that AI-based models demonstrate superior forecasting performance, particularly in volatile and uncertain economic environments, by effectively incorporating real time and high-dimensional data. Despite these advantages, the study also identifies significant challenges, including concerns over data reliability, model transparency, explainability, and the potential risks of over-reliance on automated systems in policy formulation. The paper concludes that AI should be viewed as a supportive decision-making tool rather than a replacement for expert judgment. Integrating AI technologies with traditional economic analysis and institutional knowledge can enhance the accuracy, credibility, and effectiveness of monetary policy decisions in an increasingly complex global economy.

बदलत्या काळात ग्रंथालयांमध्ये एआयचा वापर करण्याची गरज

धिरज रामचंद्र कोकाडे

ग्रंथालय विभाग,

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प्रस्तावना :

आजचे युग हे माहिती तंत्रज्ञानाचे युग आहे. माहितीच्या वाढत्या प्रवाहामुळे पारंपारिक ग्रंथालय व्यवस्थापनात अनेक अडचणी निर्माण होत आहे. या बदलत्या काळात ग्रंथालये अधिक प्रभावी, वेगवान आणि वापरकर्ता केंद्रित बनवण्यासाठी कृत्रीम बुद्धिमत्ताचा (ए.आय.) वापर करणे अत्यंत आवश्यक आहे.

एआय एक स्मार्ट असिस्टंट आहे. जो माहिती समजून घेऊन निर्णय घेण्यास मदत करते, समस्या सोडवणे, आणि संवाद साधने यासारख्या कार्यांचा समावेश होतो. एआय ला अशा प्रकारे प्रशिक्षित केले आहे की, जिथे माणसाला एक्सपर्टची गरज असते तिथे ते फक्त एआयच काम करू शकते. त्यामुळे प्रॉब्लेम सॉल्व्हिंग, स्पिच रिक्रियेशन, व्हिज्युअल प्ररसप्रेशन, डिसीजन पावर ही सर्व कामे एआय माणसापेक्षा वेगाने करते.

एआय एक अशी संगणक प्रणाली किंवा तंत्रज्ञान आहे, जी माणसासारखी विचार करणे, शिकणे, निर्णय घेणे आणि समस्या सोडवणे यासारखे कार्य करण्यास मदत करते. कृत्रीम बुद्धिमत्ता विविध क्षेत्रांमध्ये क्रांती घडवून आणत आहे, ग्रंथालय आणि माहिती विज्ञान याला अपवाद नाही. एआय तंत्रज्ञानाचा लाभ घेऊन ग्रंथालये त्यांच्या सेवा सुधारू शकतात आणि वापरकर्त्यांना उत्तम सेवा देतात. कृत्रीम बुद्धिमत्ता म्हणजे मानवी बुद्धिमतेचे यंत्रामध्ये केलेले अनुकरण, ज्यांना मानवांप्रमाणे विचार करण्यासाठी आणि शिकण्यासाठी प्रोग्राम केलेले असते. एआय तंत्रज्ञानामध्ये मशीन लर्निंग, नैसर्गिक भाषा प्रक्रिया रोबोटिक्स आणि डेटा विश्लेषण यांचा समावेश होतो, जे कार्यक्षमता आणि निर्णय प्रक्रिया सुधारण्यासाठी विविध कामांमध्ये लागू केले जाऊ शकतात.

वाचक, वाचन साहित्य आणि ग्रंथालयीन कर्मचारी हे तीन घटक ग्रंथालयातील अत्यंत महत्वाचे घटक आहे. ग्रंथालयाचा मुळे उद्देश ज्ञान व माहिती संग्रहण हा असतो. ग्रंथालयातून ही साधने वापरण्यासाठी नेता येतात व मर्यादित कालावधीत परत केली जातात. आधुनिक काळात ग्रंथालयाची संकल्पना बदलून ते माहितीचे देवाण-घेवाण करणारी संस्था अशी झाली आहे. कारण वाचक पुस्तक न मागता डेटाबेसची माहिती मागण्यासाठी येत आहे.

Literature review: Role and Importance

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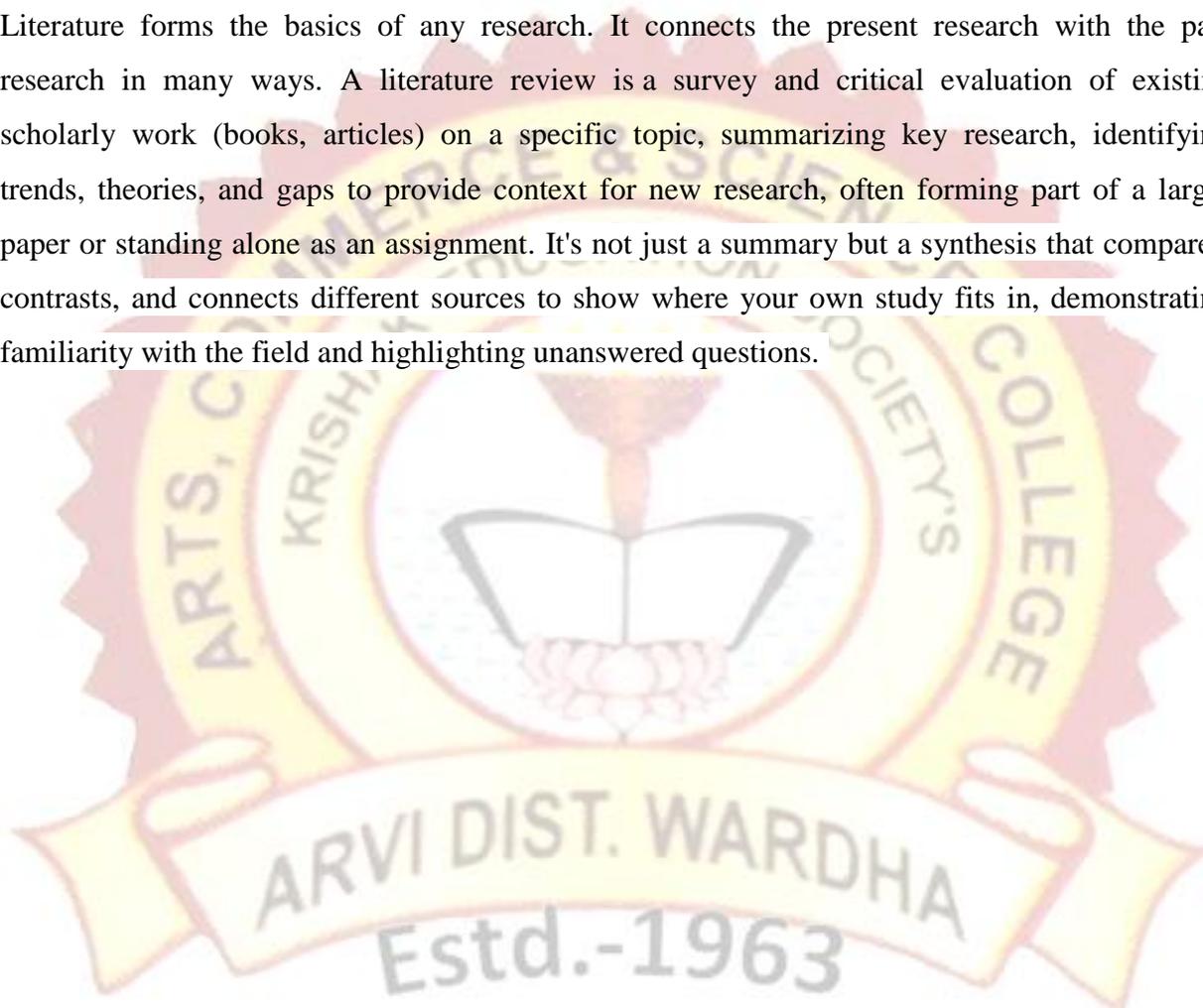
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Abstract

Literature forms the basics of any research. It connects the present research with the past research in many ways. A literature review is a survey and critical evaluation of existing scholarly work (books, articles) on a specific topic, summarizing key research, identifying trends, theories, and gaps to provide context for new research, often forming part of a larger paper or standing alone as an assignment. It's not just a summary but a synthesis that compares, contrasts, and connects different sources to show where your own study fits in, demonstrating familiarity with the field and highlighting unanswered questions.



Invisible Use of AI In Libraries: A Survey on Unaware AI Consumption by Users

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Abstract

Artificial Intelligence (AI) technologies are increasingly embedded in contemporary library systems, shaping information access, discovery, and user experience. However, a significant proportion of library users consume AI-driven services without being consciously aware of the presence or role of AI in these systems. This phenomenon, referred to in this study as invisible AI consumption, remains largely unexplored within Library and Information Science (LIS) literature. The present empirical survey investigates the extent of user's unawareness of AI applications in academic libraries, their patterns of interaction with AI-enabled services, and the implications of such invisibility for user trust, ethics, and information literacy.

The central **research problem of this study** is to examine the extent to which library users unknowingly interact with AI-enabled services and to assess their level of understanding, perception, and trust toward such technologies. The study also explores whether lack of awareness impacts ethical concerns, data privacy perceptions, and informed usage of library resources.

The **study adopts a survey -based empirical methodology** and collects data from academic library users across selected academic institutions using a structured questionnaire. The survey focuses on user's interaction with library systems, The awareness of AI tools, functionalities, perceived benefits, concerns regarding data usage, and expectations from libraries in terms of transparency and user education, attitudes toward transparency in AI-enabled library services. Quantitative data are analyzed using descriptive statistics and inferential techniques to identify significant relationships between awareness levels and variables such as academic discipline, digital literacy, and frequency of library use.

Findings reveal that while users regularly interact with AI-driven library systems, a majority lack explicit awareness of AI's role in mediating search results, recommendations, and access pathways, Despite this unawareness, users report high levels of satisfaction and paradox between usability and transparency. The study highlights critical ethical and pedagogical concerns, particularly regarding informed use, algorithmic bias, and the responsibility of libraries to promote AI awareness.

The **paper concludes** by proposing a conceptual framework for enhancing AI transparency and user-centered AI literacy initiatives within academic libraries. By foregrounding the notion of invisible AI consumption, the study contributes original empirical evidence to LIS research and offers practical implications for library policy, user education, and the future design of intelligent library systems. The **research contributes** to the field of LIS. The study aligns with emerging discussions on responsible AI and supports the development of user-centric, transparent, and ethically informed library services.

Keywords:- Artificial Intelligence, Academic Libraries, User Awareness, Invisible AI, Information Services.

Artificial Intelligence across Education

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force across the spectrum of education, the economy, and science, reshaping how knowledge is generated, disseminated, and applied. In education, AI-driven tools enable personalized learning, adaptive assessment, and improved access to quality instruction, enhancing learner outcomes and institutional efficiency. Economically, AI accelerates productivity, drives innovation, and creates new industries while simultaneously redefining labour markets and skill requirements. Within the scientific domain, AI enhances data analysis, modelling, and simulation, enabling breakthroughs in fields ranging from healthcare and climate science to materials discovery and space exploration. The convergence of AI across these sectors fosters a mutually reinforcing cycle in which scientific advances inform AI development, AI-powered education cultivates a future-ready workforce, and economic investment sustains innovation ecosystems. However, this rapid integration also raises critical ethical, social, and governance challenges, including equity, transparency, and accountability. Addressing these concerns is essential to harness AI's potential for inclusive growth and sustainable scientific progress.

Artificial Intelligence (AI) is increasingly transforming education by reshaping teaching, learning, and institutional management. AI-powered systems enable personalized learning experiences through adaptive content delivery, intelligent tutoring, and real-time assessment, addressing diverse learner needs and improving educational outcomes. Instructors benefit from AI-assisted analytics that support curriculum design, student performance monitoring, and early identification of learning gaps. At the institutional level, AI enhances administrative efficiency through automation, predictive enrolment modeling, and resource optimization. Despite these advancements, the integration of AI in education raises significant ethical and pedagogical concerns, including data privacy, algorithmic bias, and the evolving role of educators. Addressing these challenges through responsible design, policy frameworks, and digital literacy is essential to ensure that AI serves as an inclusive and effective tool for advancing equitable and lifelong learning.

Use of AI in the Creation of Educational Contents

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Abstract:

Artificial Intelligence (AI) has rapidly changed how we create and deliver educational content to students in many different ways. As technologies like machine learning, Natural Language Processing (NLP), and Generative Models continue to grow, so too does our ability to create and use AI to develop, adapt, and personalise our courses for students. The advantage of these types of technologies is that they allow us to create and distribute digital textbooks, quizzes, lesson plans, multimedia sources, and interactive simulations without requiring a large amount of time or effort from teachers to maintain a high-quality instructional product. The most significant way AI has impacted how we create educational content is through Personalization. AI uses the information it collects on student performance, preference, and engagement patterns to generate content based on each student's specific needs, thus developing adaptive Learning Paths and improving Learning Outcomes for students. In addition to Personalization, AI also promotes Accessibility and Inclusion through real-time Translation, Speech-to-Text, and Materials tailored to the needs of students with disabilities. AI-generated Analytics also support Teachers in identifying Knowledge Gaps and refining content to better fit the needs of students based on their Feedback and Assessment Results. Finally, as the advancement of AI technologies will continue to occur over time, there will be opportunities for teachers to continuously update all educational materials to ensure their relevance to both the ever-changing academic and industry standards. Although there are many benefits to using AI as part of the process of creating educational content, there are many Challenges that educators face while integrating AI into their classrooms.

Keywords:- Artificial Intelligence, Educational Content, Machine Learning, Generative Models

Application and Use of Artificial Intelligence in Library services for Academic Libraries

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In the recent years AI offering various opportunities to enhance library services and user experiences. Artificial Intelligence also growing significance in transforming Library and Information Science. The application and use of AI technology in academic libraries is setting a level of accuracy and effectiveness in library services delivery This paper presents a comprehensive review of the literature on use of AI in Academic Libraries. The review also discusses several challenges and limitations associated with AI implementations in LIS. Paper also highlighted user perspectives and user experiences with AI-driven library services.

In this paper the roles and skills of librarians and information professional in the AI era are also discussed. The study also focused on the importance of digital literacy, data management, and ethical decision-making. Finally, future directions and research agenda for AI in LIS are identified, including the development of AI-driven tools and services. The review underscores the transformative potential of AI in LIS.. The challenges and opportunities in implantation of AI and provides its benefits for libraries and their users are discussed in this paper.

In conclusion it is essential for libraries to remain vigilant, proactive, and ethically mindful for implementation of AI in LIS. AI technologies allows libraries to provide more efficient, personalized, and accessible services to their patrons which is need of hours. To integrate AI successfully, libraries must collaborate with professionals, researchers, and policymakers and adopt a continuing education approach to AI. Present study recommends that the library should provide alternative and reliable power supplies and the train library staff to stay relevant in this technology driven era.

Use of Artificial Intelligence for Student Assessment and Evaluation

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Abstract

In the evolving landscape of education, Artificial Intelligence (AI) is revolutionising student assessment and evaluation by shifting from traditional, subjective methods to data-driven, personalised approaches. AI tools, such as machine learning algorithms and natural language processing (NLP), enable automated grading of essays, quizzes, and projects, reducing teacher workload by up to 70% while ensuring consistency and scalability (D'Mello et al., 2023). Adaptive testing platforms like Duolingo and Dream Box dynamically adjust question difficulty based on real-time student performance, fostering individualised learning paths and accurate proficiency measurement.

Beyond grading, AI excels in formative evaluation through predictive analytics, identifying at-risk students via patterns in engagement data from learning management systems (LMS) like Moodle or Canvas. Tools employing computer vision analyse facial expressions during online exams to detect emotional states, enhancing holistic feedback on cognitive and affective domains. In India, initiatives like the National Education Policy (NEP) 2020 integrate AI for equitable assessments in diverse linguistic contexts, supporting multilingual evaluation via models like Indic BERT.

However, challenges persist: algorithmic biases can perpetuate inequities, data privacy concerns under GDPR-like frameworks demand robust safeguards, and over-reliance risks diminishing human judgment in creative assessments. Future directions emphasise ethical AI frameworks, hybrid human-AI models, and teacher upskilling to maximise benefits.

Ultimately, AI transforms assessment from a summative checkpoint to a continuous, empowering process, equipping educators to nurture 21st-century skills amid India's digital education push.

Artificial Intelligence and Library services

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Artificial intelligence has emerged as a transformative technology in the field of library and information services, reshaping traditional practices and introducing innovative service models. This research paper examines the application of artificial intelligence in libraries and its impact on core library functions such as cataloguing, classification, information retrieval, reference services, and library management. The study highlights the role of AI based tools including automated metadata generation, intelligent search systems, recommendation engines, chatbots, and data analytics in improving efficiency, accuracy, and user satisfaction. It also discusses the contribution of artificial intelligence to digital libraries through digitization, preservation, and content organization. While artificial intelligence offers significant opportunities for enhancing library services, the paper emphasizes that human expertise remains central to ethical decision making, user guidance, and professional judgment. Challenges related to data privacy, algorithmic bias, cost, and skill development are also addressed. The study concludes that the effective integration of artificial intelligence with traditional librarianship can strengthen libraries as dynamic, user centered knowledge institutions in the digital age.

AI in Business and Commerce: Transforming Education, Economy and Science

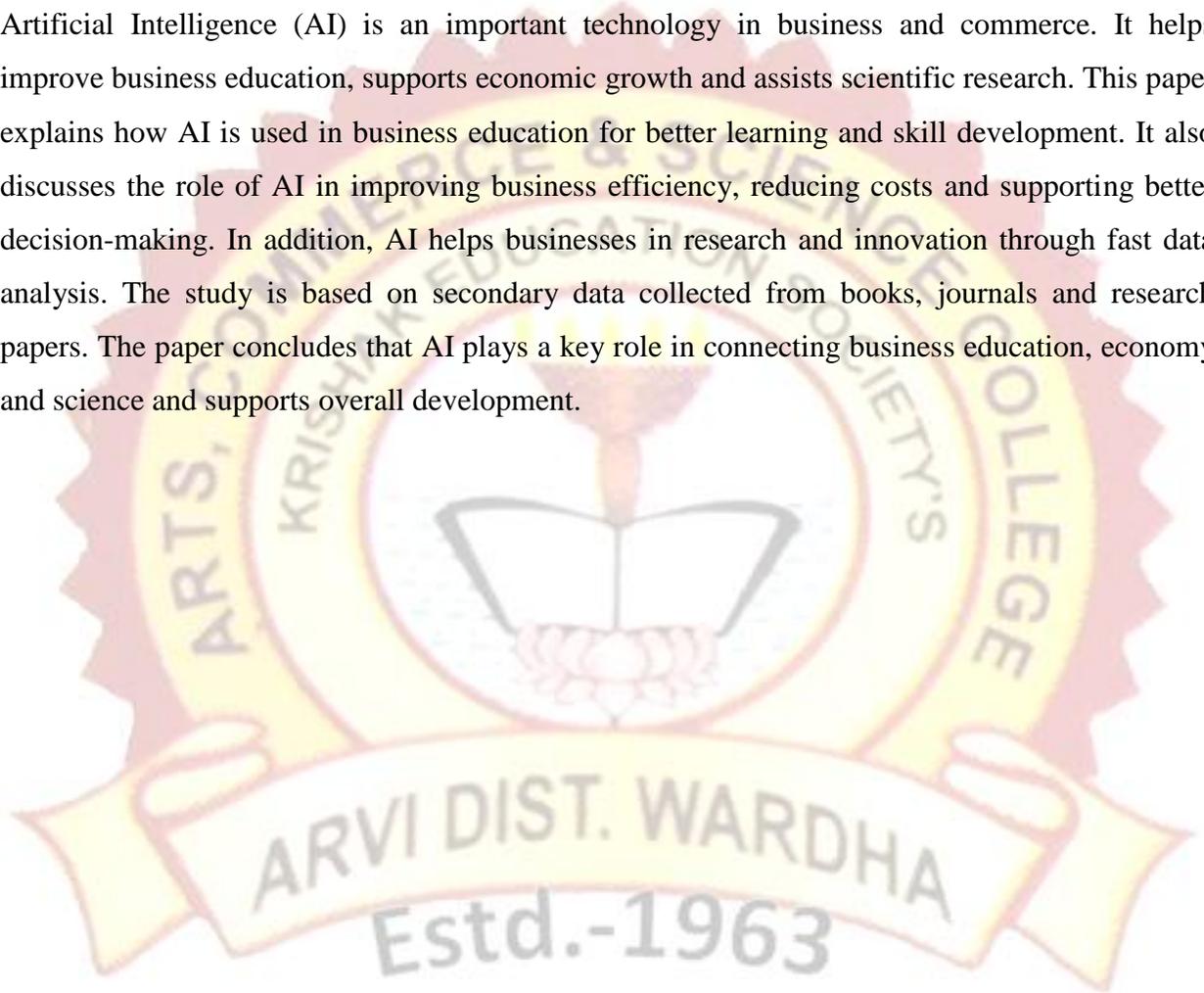
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Abstract

Artificial Intelligence (AI) is an important technology in business and commerce. It helps improve business education, supports economic growth and assists scientific research. This paper explains how AI is used in business education for better learning and skill development. It also discusses the role of AI in improving business efficiency, reducing costs and supporting better decision-making. In addition, AI helps businesses in research and innovation through fast data analysis. The study is based on secondary data collected from books, journals and research papers. The paper concludes that AI plays a key role in connecting business education, economy and science and supports overall development.



AI Tools for faculty professional development

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Abstract

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the landscape of higher education, particularly in the area of faculty professional development. AI-based tools offer innovative opportunities to enhance teaching effectiveness, research productivity, and administrative efficiency among faculty members. This paper explores the role of AI tools in supporting continuous professional development of faculty by enabling personalized learning pathways, intelligent content creation, automated assessment, data-driven feedback, and research assistance. AI applications such as learning analytics, virtual mentors, adaptive training platforms, and academic writing assistants help educators update pedagogical skills, integrate technology into teaching, and engage in lifelong learning. The study highlights how AI tools promote reflective teaching practices, improve instructional design, and support evidence-based decision-making. It also discusses challenges related to ethical use, data privacy, digital literacy, and institutional readiness. The paper concludes that strategic adoption of AI tools can empower faculty, foster innovation in teaching and learning, and contribute to sustainable professional growth in higher education institutions.

Keywords:- Artificial Intelligence, Faculty Development, Higher Education, AI Tools, Digital Pedagogy, Educational Technology.

Artificial Intelligence in Chemistry: Methods, Applications, Challenges, and Future Directions

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Abstract

Artificial Intelligence (AI) is revolutionizing the field of chemistry by enabling predictive modeling, accelerated discovery, process optimization, and autonomous experimentation. Across sub domains such as drug discovery, materials science, chemical synthesis, analytical chemistry, and green chemistry, AI-driven methods especially machine learning (ML) and deep learning (DL) is transforming workflows and scientific outcomes. This paper addresses interpretability, data quality, and ethical issues in addition to offering a thorough review of AI methods in chemical research, highlighting noteworthy applications, discussing present difficulties, and outlining future directions. Notwithstanding these achievements, there are still many challenges to be addressed, including data quality and availability, interpretability, generalization across the chemical domain, and the integration of AI with experimental procedures. Ethical issues, reproducibility, and the need for standardized benchmarks are also of concern. Looking ahead, future research directions include the development of explainable and informed AI models, better data sharing infrastructure, a closer integration of AI systems with laboratory automation, and collaboration between chemists, computer scientists, and engineers. Overall, AI has the potential to accelerate innovation in the chemical domain, lower the cost of experiments, and provide new paradigms for scientific discovery.

Keywords:- Artificial Intelligence, drug discovery, machine learning, chemical synthesis, deep learning.

कृषी क्षेत्रात AI चा वापर

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सारांश – (Abstracts)

एके काळी शेती व्यवसाय हा अनुभव, अंदाज आणि निसर्गावरच्या श्रद्धेवर चालणारा होता. पावसाची दिशा काय राहिल , किती पाउस राहिल, हे मातीचा स्पर्श, गंध, वाऱ्याची चाहूल या सगळ्यावर आधारीत शेतकरी शेतीविषयक निर्णय घेत असे. आजही हा अनुभव अमूल्य आहे. परंतु हवामानातील बदल, अनिश्चित पर्जन्यमान, वाढते तापमान, वाढते पर्यावरण प्रदुषण, किडरोगाचे नवनवीन प्रकार आणि वाढती लोकसंख्या या सगळ्या दबावांमध्ये केवळ शेतकऱ्यांचे अनुभव स्थिर उत्पन्न देवू शकत नाही. व शेतकऱ्यांच्या विकासाची कल्पना करणे विश्वासपूर्ण होत नाही. शेती क्षेत्रातील अशा अनेक समस्यांवर मात करून शेती व पर्यायाने शेतकऱ्यांच्या विकासाकरीता AI हा तंत्रात्मक व वैज्ञानिक प्रयोग एक दिलासा देणारा आहे. AI म्हणजे शेतीतील यंत्रमानव नव्हेत तर उपलब्ध माहिती किंवा डेटावर आधारीत निर्णय घेण्याची क्षमता जी माणसाच्या अनुभवाला वैज्ञानिक आधार प्रदान करते. राष्ट्रीय स्तरावर AI चा वापर केवळ एका शेतापुरता मर्यादीत राहिलेला नाही. तर देशभरातून प्राप्त माहिती जसे किड, रोग, हवामान आणि उत्पादनाची माहिती एकत्र करून AI आधारीत पॅटर्न, रिकग्निशन सिस्टीम (PRS) तयार केल्या जात आहे.

AI चा महत्वाचा उपयोग म्हणजे पिक उत्पादनाचा अंदाज यासाठी वापरले जाते. उपग्रह, प्रतीमा, एतिहासीक उत्पादन डेटा, हवामान मॉडेल्स, माती आणि पाण्याची माहिती या सगळ्या माहितीच्या आधारे खर्चावर नियंत्रण ठेवून व उत्पादनातील अनिश्चितता कमी करून AI मॉडेल उत्पादनाचा अंदाज 30% पर्यंत वाढवीता येवू शकते. प्रस्तुत शोध निबंधात AI चा कृषी क्षेत्रात वापर याचा शोध घेण्याचा प्रयत्न करण्यात आला आहे.

Role of AI-Driven Personalization in Shaping Consumer Behaviour in Vidarbha Region

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Abstract

Artificial Intelligence (AI) has significantly transformed modern marketing practices by enabling data-driven personalization, predictive targeting, and customized consumer engagement strategies. AI-driven personalization includes recommendation systems, targeted advertisements, chatbots, predictive analytics, and automated content generation, which collectively reshape consumer perceptions and purchasing decisions. While urban markets have been extensively studied, limited scholarly attention has been given to the impact of AI-based personalization on consumer behaviour in semi-urban and rural regions such as Vidarbha. This paper, based entirely on secondary data sources, examines the role of AI-driven personalization in shaping consumer behaviour in the Vidarbha region of Maharashtra. The study adopts a systematic review and analytical approach using published research articles, government reports, industry white papers, digital economy reports, and marketing studies. The findings indicate that AI-driven personalization positively influences consumer awareness, engagement, brand trust, and purchase intention by delivering relevant and customized marketing communication. The study also identifies major determinants such as digital literacy, data accessibility, language localization, and trust in AI systems as key factors affecting consumer adoption. The paper concludes that AI-driven personalization has strong potential to transform consumer markets in Vidarbha, provided that inclusive digital infrastructure, ethical AI practices, and localized marketing strategies are implemented.

Brain Tumor Detection using Digital Image Processing

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Abstract

Brain tumor detection is one of the most critical tasks in medical diagnosis, as early and accurate identification plays a vital role in effective treatment planning and patient survival. Magnetic Resonance Imaging (MRI) is widely used for brain tumor analysis due to its high resolution and non-invasive nature; however, manual interpretation of MRI scans is time-consuming and prone to human error. To overcome these limitations, this research proposes an automated brain tumor detection and classification system using digital image processing and machine learning techniques. The proposed approach involves pre-processing MRI images through gray scale conversion, noise removal, and segmentation to extract relevant tumor regions. Texture and color-based features are extracted and used to train machine learning classifiers. Support Vector Machine (SVM) and Random Forest algorithms are implemented and evaluated for tumor classification. Experimental results demonstrate that the proposed method achieves improved accuracy compared to individual classifiers, with an overall accuracy of 80%, outperforming SVM and Random Forest models. The findings indicate that machine learning-based Computer-Aided Diagnosis (CAD) systems can assist radiologists in achieving faster, more accurate, and reliable brain tumor detection. This approach reduces diagnostic burden and enhances decision-making in medical imaging applications.

Keywords:- Brain Tumor Detection (BTD), Magnetic Resonance Imaging (MRI), Digital Image Processing (DIP), Machine Learning (ML), Support Vector Machine (SVM), Random Forest (RF), Digital Image Segmentation (DIS), Computer-Aided Diagnosis (CAD).

Artificial Intelligence Applications in Customer Service in Indian Businesses

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Abstract

Artificial Intelligence (AI) is reshaping customer service across Indian industries most visibly in BFSI, telecom, and digital commerce—by enabling 24×7 assistance, multilingual support, personalization at scale, and proactive service recovery. Indian banks (e.g., HDFC, ICICI) deploy conversational agents and predictive systems for query resolution, fraud mitigation, and journey personalization, while telecom operators (e.g., Airtel) use AIOps and multi-agent assistants to compress response times and deflect contacts. At ecosystem level, policy shifts such as India’s **Digital Personal Data Protection Act, 2023 (DPDP)** and emerging sectoral guidance (RBI’s **FREE-AI** principles; TRAI recommendations on AI/Big Data) are aligning AI innovation with customer protection and model accountability. Despite measurable efficiency and CX gains, organizations contend with integration complexity, multilingual NLP challenges, bias/opacity risks, and fast-evolving fraud vectors in UPI and messaging channels. This paper synthesizes recent cases, regulatory directions, and technical enablers, and proposes a practitioner framework for responsible, high-ROI AI in Indian customer service.

Schizophrenia in the Era of Neuroimaging and Artificial Intelligence

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Abstract

Schizophrenia is a chronic and severe psychiatric disorder affecting approximately one percent of the global population. It is clinically characterised by a heterogeneous symptom profile that includes positive symptoms, such as hallucinations and delusions; negative symptoms, including affective flattening, social withdrawal, and reduced motivation; and cognitive impairments involving attention, memory, and executive functioning. These symptoms contribute to significant functional disability and reduced quality of life.

The etiology of schizophrenia is complex and multifactorial, involving interactions between genetic susceptibility, epigenetic regulation, neurodevelopmental disturbances, environmental exposures, and neurobiological processes. Evidence from neuroimaging and post-mortem studies consistently demonstrates structural and functional abnormalities in fronto-temporal, limbic, and subcortical brain regions, along with disrupted neural connectivity. Neurochemical dysregulation, particularly within dopaminergic, glutamatergic, and GABAergic systems, further contributes to the pathophysiology of the disorder.

Despite extensive research, the precise mechanisms underlying schizophrenia remain incompletely understood, which continues to limit early diagnosis and targeted treatment. However, recent advances in genomics, neuroimaging, and computational methods have improved the identification of biological risk factors and potential biomarkers. Emerging applications of artificial intelligence and machine learning show promise in enhancing diagnostic accuracy and supporting personalised treatment strategies. Together, these developments are advancing a more integrated and biologically informed understanding of schizophrenia.

Keywords:- Machine Learning(ML), Schizophrenia,MRI, Cognitive.

AI-Driven Approaches to Monitoring and Reducing Chemical Pollution

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ABSTRACT

Chemical pollution poses a significant threat to environmental sustainability and public health, driven by industrial activities, household activities, agricultural runoff, and urbanization. Conventional monitoring and mitigation methods often suffer from limited coverage, delayed response, and high operational costs. Recent advances in artificial intelligence (AI) offers insightful transformative solutions for monitoring and reducing chemical pollution across air, water, and soil. AI-driven techniques, including machine learning, deep learning, and data analytics, enable real-time analysis of sensor data, remote sensing imagery, and large environmental datasets to detect contaminants, identify pollution sources, and predict pollution trends. Furthermore, AI supports pollution reduction through process optimization, smart environmental management, and the development of safer chemical alternatives. By enhancing accuracy, efficiency, and scalability, AI-based approaches contribute to proactive environmental protection and informed decision-making. Despite challenges related to data quality, model transparency, and implementation costs, AI-driven systems represent a promising pathway toward sustainable pollution control and improved environmental governance.

Keywords:- Artificial Intelligence, Chemical Pollution, Environmental Sustainability, Machine Learning, Mitigation, Sustainable Development.

AI Tools for Faculty Professional Development

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Abstract:

The need for ongoing faculty professional development (FPD) has increased due to the quick changes in higher education brought about by multidisciplinary curricula, digitalization, and learner-centered pedagogies. The needs of individual faculty members, changing teaching methods, and the incorporation of developing technology are often ignored by traditional professional development programs, which are often workshop-based, time-bound, and homogenous. By investigating how Artificial Intelligence (AI) tools can improve faculty professional development, this study tackles the issue of limited personalization, scalability, and effectiveness in traditional faculty development programs.

Methodology

A comprehensive examination of current academic literature, policy reports, and documented case studies pertaining to AI-enabled faculty development provided support for the qualitative and analytical techniques used in this work. The study examines AI tools for instructional design, assessment development, and research assistance, including intelligent learning management systems, adaptive learning platforms, learning analytics dashboards, AI-powered mentoring systems, and generative AI applications. The analysis focuses on how these technologies help faculty members identify skill gaps, engage in self-directed learning, and provide ongoing feedback.

Findings

The main conclusions show that AI tools greatly increase the efficacy of faculty professional development by providing on-demand instructional support, real-time performance metrics, and individualized learning pathways. AI-driven technologies lessen administrative burden, improve pedagogical creativity, and enable data-driven decision-making, freeing up academic members to concentrate more on teaching and research. Additionally, by facilitating adaptable, inclusive, and scalable professional development models, AI tools support lifelong learning.

Conclusion

According to the study's findings, AI-enabled faculty professional development is a revolutionary strategy for enhancing higher education's potential. Although there are still issues with data protection, ethical use, and digital competency, the strategic application of AI tools can significantly improve academic excellence, institutional quality, and teacher effectiveness.

AI and Women's Safety

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Abstract

Women's safety has become a major social issue in the modern world due to the rising cases of violence, harassment, and insecurity faced by women in various social settings. In this scenario, Artificial Intelligence (AI) has emerged as a powerful technological tool in strengthening women's safety measures. This paper examines the role of AI in enhancing women's safety through intelligent surveillance systems, facial recognition, predictive analytics, AI-based mobile applications, emergency response mechanisms, and real-time threat detection. AI-driven solutions assist in identifying risky situations, enabling faster communication with law enforcement agencies, and providing timely assistance to women in distress. Additionally, AI helps in crime pattern analysis, prevention strategies, and awareness generation through digital platforms. However, the study also addresses challenges such as ethical concerns, privacy issues, data security, and unequal access to technology. The paper concludes that responsible use of AI, along with legal support and social awareness, can significantly contribute to ensuring women's safety and building a more secure and inclusive society.

Keywords:- Women's Safety, Artificial Intelligence, Smart Surveillance, Predictive Analytics, Social Protection Systems

Comparative Analysis and Assessment of Machine Learning Methods on COVID-19 Pandemic Dataset

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Abstract

The COVID-19 pandemic triggered an unprecedented global health crisis, prompting the rapid deployment of data-driven approaches to understand and mitigate its impact. Machine Learning (ML) techniques have played a vital role in modeling and forecasting pandemic trends, classifying COVID 19 cases, and aiding in resource allocation. This study conducts a comparative analysis and assessment of multiple Machine Learning methods applied to a COVID-19 pandemic dataset, focusing on classification accuracy, computational efficiency, and predictive reliability. We evaluate Logistic Regression, Support Vector Machine (SVM), Random Forest (RF), Gradient Boosting Machines (GBM), and Neural Networks. The results suggest that ensemble-based algorithms outperform traditional models in handling complex, high-dimensional pandemic data, offering more robust performance in predicting COVID-19 infection trends. Keywords: Machine Learning, COVID-19, Comparative Analysis, Ensemble Learning, Healthcare Analytics.

The Role of Artificial Intelligence in Learning and Market Systems

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force reshaping both learning environments and market systems. In the domain of education, AI-driven technologies such as intelligent tutoring systems, adaptive learning platforms, and automated assessment tools have enabled personalized learning experiences that cater to individual learner needs. These systems analyse learner behavior, performance patterns, and preferences to enhance engagement, improve learning outcomes, and reduce educational disparities. AI also supports educators by automating administrative tasks, allowing them to focus more on mentoring and curriculum innovation.

In parallel, AI has significantly influenced market systems by optimizing decision-making, improving operational efficiency, and enabling data-driven strategies. Machine learning algorithms are widely used in market forecasting, customer behavior analysis, supply chain optimization, and dynamic pricing models. AI-powered tools assist organizations in identifying trends, minimizing risks, and responding swiftly to market changes, thereby enhancing competitiveness and economic productivity. Furthermore, AI facilitates the growth of digital markets and e-commerce through recommendation systems, personalized marketing, and intelligent customer support.

Despite these advancements, the integration of AI in learning and market systems raises important ethical, social, and economic concerns. Issues related to data privacy, algorithmic bias, transparency, and workforce displacement require careful consideration and regulatory oversight. Ensuring responsible AI deployment is essential to maximize its benefits while minimizing potential risks.

This abstract highlights the evolving role of Artificial Intelligence as a catalyst for innovation in education and market systems. By fostering efficiency, personalization, and informed decision-making, AI continues to redefine how knowledge is acquired and how markets operate, emphasizing the need for balanced and ethical adoption across sectors.

Keywords:- Artificial Intelligence (AI), Learning Systems, Market Systems, Adaptive Learning, Machine Learning, Data-Driven Decision Making, Personalization, Market Forecasting, Digital Economy, Ethical AI.

Study of the interaction of 2CMPA with Bovine serum albumin: gel exclusion chromatography, FT-IR and Molecular modeling

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Abstract

Interaction of a carboxamide derivative of amino acids, 2-[[2-(cyclohexycarbamoyl) benzoyl] amino] propanoic Acid (2-CMPA), with Bovine Serum Albumin (BSA) was studied using gel exclusion chromatography at pH 3, 4, and 5. The association constant for 2CMPA was calculated using the Scatchard Plot, which is found to be 0.6152, 0.5817, and 0.5739 at pH 3, 4, and 5, respectively. It was found that the value of the association constant of 2CMPA decreases with an increase in pH value. The association of the compound with BSA has also been confirmed through an FT-IR and molecular modelling study. In FT-IR studies, it was observed that the secondary structure of BSA shows changes in the band. The efficient energy value for the 2CMPA-BSA complex, neglecting the effect of any solvent, was obtained using HEX software, which is found to be -235.66.

Keywords:- Gel Exclusion Chromatography, protein-drug binding, Scatchard analysis,

Impact of Internet Overuse on Study Habits of Adolescence

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In the modern digital era, the internet has become an integral part of daily life, especially for adolescents. With the rapid growth of smartphones, social media, online gaming, and digital learning platforms, adolescents are spending an increasing amount of time on the internet. While the internet offers numerous educational benefits such as easy access to information, online learning resources, and academic support, its excessive and uncontrolled use has raised serious concerns among parents and teachers. "Internet addiction is a type of technological addiction that involves excessive human-machine interaction leading to behavioural dependence." Griffiths (1998).

"Study habits are systematic and effective methods of learning that help students achieve academic success." Crow and Crow (1969). The purpose of the present study is to see impact of Internet Overuse on Study Habit of Adolescence. There were two hypotheses of the study: (1) Internet overuse affects study habits of adolescence, (2) There is negative correlation between internet overuse and study habits among adolescence. Sample of 200 adolescence is selected from various college in Amravati city. Age range from 16 to 20 years and 1:1 male female ratio is considered. Simple random sampling technique was used for data collection the responses are collected by using two questionnaires: i) Internet overuse scale by Dr. Darshana Shah and Prof. Urmi Nanda Biswas. ii) Study habit inventory by Dr. M. N. Palsane. In this study Pearson statistical correlational method used to assess the association between two variable internet overuse and study habits. The results of the study suggested that internet overuse is significantly correlated with study habits of adolescence. The present study also provides a room for future research to be done on a larger scale.

ज्ञान संकलनात भाकित विश्लेषण आणि प्रगत AI

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सारांश

माहितीच्या ओव्हरलोडच्या युगात ज्ञान संकलन ही एक धोरणात्मक गरज बनली आहे. डेटाच्या घातांकीय वाढीसह, पारंपारिक ज्ञान व्यवस्थापन दृष्टिकोन वेळेवर, संबंधित आणि कृतीशील अंतर्दृष्टी प्रदान करण्यासाठी अपुरे पडतात. भाकित विश्लेषण आणि प्रगत कृत्रिम बुद्धिमत्ता संकलनाला प्रतिक्रियाशील तंत्रे ज्ञान (एआय) प्रक्रियेतून सक्रिय, बुद्धिमान प्रणालीमध्ये रूपांतरित करत आहेत. हे पेपर ज्ञान संकलनात भाकित विश्लेषण आणि एआयचे एकत्रीकरण, त्यांच्या पद्धती, अनुप्रयोग आणि संशोधन, व्यवसाय आणि समाजासाठी भविष्यातील परिणामांचा शोध घेतो.

मुख्य शब्द (Keyword):- ज्ञान संकलनात भविष्यसूचक विश्लेषण, ज्ञान संकलनात प्रगत एआय, अनुप्रयोग, आव्हाने आणि नैतिक विचार, भविष्यातील दिशानिर्देश, अंदाज, वेळमालिका-, भाकित मॉडेलिंग, डेटा मायनिंग.

भारतीय लोकशाही वर कृत्रिम बुद्धिमत्तेचा प्रभाव एक चिकित्सक अध्ययन

आशिष बबनराव पेठे

सहाय्यक प्राध्यापक, राज्यशास्त्र विभाग, कला वाणिज्य व विज्ञान महाविद्यालय आर्वी

भारतीय लोकशाही ही संविधानिक मूल्ये, बहुपक्षीय व्यवस्था, स्वातंत्र्य, समानता व नागरिक सहभाग यांवर आधारित आहे. २१व्या शतकात कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) ही तंत्रज्ञानाची एक प्रभावी शक्ती म्हणून उदयास आली असून तिचा भारतीय लोकशाही प्रक्रियेवर बहुआयामी प्रभाव दिसून येतो. प्रस्तुत संशोधनाचा उद्देश भारतीय लोकशाहीवर कृत्रिम बुद्धिमत्तेचा होणारा प्रभाव चिकित्सक दृष्टीने अभ्यासणे हा आहे.

कृत्रिम बुद्धिमत्तेमुळे निवडणूक प्रक्रिया, प्रशासन, धोरणनिर्मिती, ई-गव्हर्नन्स, सार्वजनिक सेवा वितरण आणि राजकीय संवाद अधिक कार्यक्षम व वेगवान झाला आहे. मतदार नोंदणी, फसवणूक ओळख, डेटा-आधारित धोरणनिर्मिती, तसेच नागरिकांच्या तक्रारींचे त्वरित निवारण यामध्ये AI महत्त्वाची भूमिका बजावत आहे. तथापि, याचबरोबर गोपनीयतेचा भंग, डेटाचा गैरवापर, अल्गोरिदमिक पक्षपात (algorithmic bias), फेक न्यूज, डीपफेक तंत्रज्ञान व जनमतावर होणारा कृत्रिम प्रभाव ही गंभीर आव्हाने लोकशाहीसाठी धोका ठरू शकतात.

भारतीय समाजातील डिजिटल दरी, तांत्रिक साक्षरतेचा अभाव आणि नियामक चौकटीची मर्यादा या समस्या AI च्या वापराला अधिक गुंतागुंतीचे बनवतात. त्यामुळे कृत्रिम बुद्धिमत्तेचा वापर लोकशाही मूल्यांशी सुसंगत राहण्यासाठी पारदर्शकता, उत्तरदायित्व, नैतिकता व मजबूत कायदेशीर नियमन आवश्यक आहे.

हा अभ्यास असा निष्कर्ष मांडतो की, कृत्रिम बुद्धिमत्ता ही भारतीय लोकशाहीसाठी ना पूर्णतः लाभदायक आहे ना पूर्णतः घातक; तिचा प्रभाव तिच्या वापराच्या स्वरूपावर अवलंबून आहे. योग्य धोरणे, नैतिक मार्गदर्शक तत्त्वे आणि नागरिक जागरूकता यांच्या माध्यमातून AI चा वापर लोकशाही बळकट करण्यासाठी प्रभावी साधन ठरू शकतो.

Keywords:- कृत्रिम बुद्धिमत्ता, भारतीय लोकशाही, ई-गव्हर्नन्स, निवडणूक प्रक्रिया, डेटा गोपनीयता, अल्गोरिदमिक पक्षपात, लोकशाही मूल्ये

भारतीय लोकशाही समोरील आव्हाने

नितिन दादाराव गौरखेडे

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सारांश

लोकशाही हा सर्व शासन प्रकारात सर्वात श्रेष्ठ प्रकार मानला जातो. स्वातंत्र्यप्राप्तीनंतर भारताने भांडवलशाही किवा साम्यवाद यापैकी एकाची निवड न करता संविधानाद्वारे लोकशाहीचा स्वीकार केला.

भारत तर जगातील सर्वात मोठी लोकशाही असणारा देश आहे कारण यात सर्व सत्ता अप्रत्यक्षरीत्या जनतेच्याच हातात आहे. कायदेमंडळ, कार्यकारी मंडळ, न्यायमंडळ हे भारतीय लोकशाहीचे तीन मुख्य आधारस्तंभ आहेत, तर पत्रकारिता किवा प्रसारमाध्यमे याकडे लोकशाहीचा चौथा आधारस्तंभ म्हणून पाहिले जाते. भारतीय संविधान हे जगातील सर्वात मोठे लिखित संविधान आहे. याद्वारे भारतातील अस्तित्व आजपर्यंत टिकवून ठेवण्यात आले आहे पण स्वातंत्र्यप्राप्तीपासून तर आज पर्यंत भारतीय लोकशाहीसमोर अनेक आव्हाने निर्माण झाली आहेत. या आव्हानांचा स्वीकार करून त्यावर मात करून भारतीय लोकशाहीला अधिक बळकट करणे हे फार मोठे आव्हान भारतीय शासनापुढे आहे.

लोक हितापेक्षा सत्ता मिळविणे हा भारतीय लोकशाहीचा आज प्रमुख उद्देश झाला आहे. लोकप्रतिनिधींसाठी सत्ता हेच एकमेव साध्य झाल्याने कोणत्याही मार्गाने निवडणुकीत विजय प्राप्त करून सत्ता काबीज करण्यासाठी कायदे, नियम, नीतिमत्ता पायदळी तुडवली जात आहे. त्यामुळे भ्रष्ट आणि गुंड लोकांना राजकरणात महत्वाची पदे मिळू लागली आहेत. बरेच लोकप्रतिनिधी निरनिराळ्या गुन्ह्यात अडकलेले दिसतात. त्यामानाने त्यांना शिक्षा होण्याचे प्रमाण नागण्यच आहे. अशा भ्रष्ट लोकांच्या हाती देशाची सत्ता असल्याने भारतीय लोकशाहीसमोर अनेक आव्हाने निर्माण झाली आहे.

जसे जागरूक मतदानाचा अभाव, भ्रष्टाचार निर्मूलन, बेरोजगारी, धार्मिकता आणि दहशतवाद, वाढती महागाई, आजच्या 21 व्या शतकात भारतीय लोकशाहीला मानवी विकासाचे ध्येय प्राप्त करण्यासाठी अनेक आव्हानांचा सामना करावा लागणार आहे. देशाचा शाश्वत व सर्वांगीण विकास साधण्यासाठी भारतीय लोकशाहीने सकारात्मक दृष्टिकोनातून स्वताला नवीन दिशा दिली पाहिजे. नव्या युगाच्या नव्या गरजा पूर्ण करून स्वताची प्रस्तुतता टिकविण्यासाठी, तसेच भारतात, गुणात्मक, सहभागी व पारदर्शक शासन व्यवस्थेद्वारा जागरूक लोकमताच्या स्थापनेसाठी लोकशाहीने योग्य मार्गाचा अवलंब केल्यास येणाऱ्या काळात भारताची जगाच्या पटलावर महासत्ताक म्हणून ओळख होईल यात शंकाच नाही.

तंत्रज्ञान आणि मराठी साहित्य

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(Abstract) सारांश

मराठी साहित्य हे महाराष्ट्राच्या सांस्कृतिक, सामाजिक आणि राजकीय जीवनाचे प्रतिबिंब आहे. मध्यकाळापासून (संतपंतनंत) ते आधुनिक काळापर्यंत कथा, कादंबरी, काव्य, नाटक, चरित्र आत्मचरित्र, प्रवासवर्णन या ललित लेखनाचा समावेश होतो. यात पुन्हा मराठी वाङ्मयातील वेगवेगळे प्रवाह येतात. त्यात दलित, ग्रामीण, आदिवासी. स्त्रीवादी, ख्रिस्ती, मुस्लिम, भटक्या विमुक्तांचे साहित्य, जनसाहित्य, बालसाहित्य, विज्ञान, अनुवादित साहित्य, कामगार साहित्य आदींना समावेश होतो. एकविसाव्या शतकात तंत्रज्ञानाच्या प्रगतीमुळे साहित्यनिर्मिती, वाचन, प्रसार आणि अभिव्यक्तीच्या पद्धतीत आमूलाग्र बदल झाला. मराठी साहित्येतिहास समृद्ध असून त्यात सामाजिक, सांस्कृतिक आणि भावनिकतेचे सुंदर चित्रण येते. तंत्रज्ञानाचा वेगाने झालेला विकास साहित्यविश्वालाही मोठ्या प्रमाणात प्रभावित करतो आहे. इंटरनेट, सोशल मीडिया, ईपुस्तके, पॉडकास्ट्स आणि कृत्रिम बुद्धिमत्ता (AI) यांसारख्या साधनांमुळे साहित्याचा प्रसार आणि निर्मिती या दोन्ही पातळ्यांवर क्रांती घडली आहे. लेखक आता ब्लॉग, यूट्यूब चॅनेल्स व ऑडिओबुकसद्वारे वाचकांशी थेट संवाद साधत आहेत. पारंपरिक छापील पुस्तकांसोबतच डिजिटल स्वरूपातील साहित्य अधिक सहज उपलब्ध होत आहे. तसेच, नवोदित लेखकांसाठीही लेखन व प्रसिद्धीचे दरवाजे खुले झाले आहेत. मराठी भाषा आणि साहित्याचे डिजिटायझेशन सुरू असून, कृत्रिम बुद्धिमत्ता (AI) आणि अनुवाद साधनांनी जागतिक पातळीवर पोहोचण्याची क्षमता वाढली आहे. तथापि, या तंत्रज्ञानाच्या वापरात साहित्यिक गुणवत्ता आणि मौलिकतेचे जतन काळाची गरज आहे. त्यामुळे मराठी साहित्य आणि आधुनिक तंत्रज्ञान यांचा समन्वय साधताना संतुलन राखणे आवश्यक आहे. या बदलांचा योग्य वापर केल्यास मराठी साहित्याला एक नवीन आयाम मिळू शकतो. या शोधनिबंधात आपण मराठी साहित्याच्या ऐतिहासिक प्रवासाचा आढावा घेऊन आधुनिक तंत्रज्ञानामुळे झालेल्या बदलांवर प्रकाश टाकला आहे.

तंत्रज्ञानाला अनुकूल आपले साहित्य करण्यापेक्षा, साहित्याला अनुकूल असे तंत्रज्ञान आपण जर केले, तर साहित्य खूप प्रगतीपथावर जाणे शक्य आहे. त्यासाठी साहित्याचे लोकशाहीकरण होणे अत्यंत गरजेचे आहे. जगभरातील अनेक देशांचा अभ्यास केल्यास आपणास असे दिसून येते की, आपल्यापेक्षा कितीतरी कमी लोकसंख्या असलेल्या देशांमध्ये माहिती तंत्रज्ञानाला आपल्या साहित्यानुसार बदल करण्यास तेथील लोकांनी भाग पाडले आहे.

शिक्षण क्षेत्रातील कृत्रिम बुद्धिमत्ता आणि आव्हाने

गोवर्धन यादोराव वानखेडे

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संक्षिप्त सारांश

शिक्षण हे समाजाच्या सर्वांगीण विकासाचे महत्वाचे साधन असून माहितीतंत्रज्ञानाच्या युगात -
-केंद्रित शिक्षण प्रणाली आता विद्यार्थी-पारंपरिक शिक्षक .शिक्षणपद्धतीत मोठे बदल घडत आहेत
केंद्रित होत असून या परिवर्तनात **कृत्रिम बुद्धिमत्ता** महत्वाची भूमिका बजावत आहे.

कृत्रिम बुद्धिमत्तेमुळे शिक्षण क्षेत्रात वैयक्तिकृत शिक्षण, बुद्धिमान ट्यूटर प्रणाली, स्वयंचलित
मूल्यमापन, शैक्षणिक डेटा विश्लेषण आणि ऑनलाइन शिक्षण अधिक प्रभावी झाले आहेमशीन
लर्निंग, नैसर्गिक भाषा प्रक्रिया, डेटा विश्लेषण आणि स्वयंचलित निर्णय प्रणाली यांचा उपयोग
करून विद्यार्थ्यांच्या गरजा, क्षमता व शिकण्याची गती ओळखणे शक्य झाले आहेत।
अभ्यास प्रक्रिया अधिक सुलभ-अध्यापन, संवादात्मक व परिणामकारक बनली आहे.

तथापि, कृत्रिम बुद्धिमत्तेच्या वापरासोबत काही गंभीर आव्हानेही निर्माण होत आहेत।
गोपनीयता व सुरक्षितता, डिजिटल दरी, शिक्षकांची बदलती भूमिका, नैतिक व सामाजिक प्रश्न,
तांत्रिक मर्यादा तसेच मानवी संवादाचा अभाव ही प्रमुख आव्हाने आहेत.

निष्कर्ष:- शिक्षण क्षेत्रात कृत्रिम बुद्धिमत्ता अत्यंत उपयुक्त ठरू शकते, परंतु तिचा वापर योग्य
धोरणे, नैतिक चौकट, शिक्षक प्रशिक्षण आणि सर्वसमावेशक दृष्टीकोनातून केल्यासच तिचे फायदे
प्रभावीपणे साध्य करता येतील.

महिलांच्या सामाजिक सुरक्षेसाठी न्यायालयीन आणि घटनात्मक तरतूद

संशोधक विद्यार्थिनी
रश्मी राजेंद्र फुके

सारांश

भारतीय घटना ही महिलांच्या सामाजिक सुरक्षेचा मुख्य आधार आहे (२४ते १४अनुच्छेद) मूलभूत हक्क .समानता, भेदविरहितता आणि शोषणाविरुद्ध संरक्षण देतात-३८अनुच्छेद) राज्यनीतीच्या मार्गदर्शक तत्वांतर्गत .३९अआर्थिक न्या-राज्यावर सामाजिक (य, समान कामासाठी समान वेतन, कामगार महिलांसाठी अनुकूल परिस्थिती निर्माण करणे आणि सर्वांसाठी पुरेशा संधी उपलब्ध करून देणे याची जबाबदारी आहे (अ५१अनुच्छेद) मूलभूत कर्तव्ये . सर्व प्रथा आणि रूढी टाळण्याचे आवाहन करतात

न्यायालयांनी, विशेषतः सर्वोच्च न्यायालयाने, घटनात्मक तरतुदींचा विस्तृत अर्थ लावून सक्रिय भूमिका बजावली आहे . 'विशाखा मार्गदर्शक तत्त्वे' (१९९७ (.कामाच्या ठिकाणी लैंगिक छळाविरुद्ध संरक्षणाचा पाया ठरली'शाहबानो' केसमध्ये .विचारवंत मुस्लिम महिलांचे हक्क मान्य केले (१९८५)'सुचेता कृपलानी', 'मॅरी रॉय', 'निर्भया' सारख्या अनेक ऐतिहासिक निर्णयांद्वारे महिलांच्या आर्थिक, वैयक्तिक आणि शारीरिक सुरक्षेला चालना दिलीअलीकडील . निर्णयांतून, माहितीचा हक्क, आरोग्यसेवेचा हक्क यांसारख्या मूलभूत हक्कांचा आश्रय घेऊन सामाजिक सुरक्षेचा व्यापक अर्थ स्वीकारला आहे.

घटनात्मक आधारावर अनेक विशेष कायदे अस्तित्वात आले, जसे की समान वेतन कायदा (१९७६), गर्भलिंग निदान प्रतिबंध कायदा (१९९४), कामाच्या ठिकाणी महिलांचा लैंगिक छळ प्रतिबंध कायदा (२०१३), गृहनिर्मित हिंसा कायदा महिला आणि बालविकास मंत्रालय .इत्यादी (२००५), राष्ट्रीय महिला आयोग यांसारख्या संस्था निर्माण करण्यात आल्या क योजना आणिसरकारच्या विविध पंचवार्षिक . 'बेटी बचाओ बेटी पढाओ', 'मातृत्व लाभ योजना' सारख्या कार्यक्रमांद्वारे सामाजिक सुरक्षेचे जाळे विस्तारले गेले.

कायदेशीर तरतुदी आणि प्रत्यक्षातील अंमलबजावणी यामध्ये मोठे अंतर आहेसा .माजिकसांस्कृतिक अडथळे-, पितृसत्तात्मक मनोवृत्ती, जातीयधार्मिक - न्यायिक प्रक्रिया खर्चिक .भागणी ही मोठी आव्हाने आहेतवि, दीर्घकाळ चालणारी आणि गुंतागुंतीची असल्याने सहजपणे न्याय मिळणे अवघड आहे . अनौपचारिक क्षेत्रातील महिला, विकलांग महिला, वृद्ध महिला यांसारख्या गटांपर्यंत या संरक्षणाची पोहोच मर्यादित आहे.

गृहअर्थशास्त्र शिक्षणात कृत्रिम बुद्धिमत्तेची (AI) भूमिका एक विश्लेषणात्मक अभ्यास :

प्रतिभा सुभाषराव काटकर

गृहअर्थशास्त्र विभाग प्रमुख

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Abstract

सध्याचे शैक्षणिक क्षेत्र वेगाने तंत्रज्ञानाधारित होत असून, कृत्रिम बुद्धिमत्ता ही शिक्षण प्रक्रियेतील एक महत्त्वाची संकल्पना म्हणून उदयास आली आहे. गृहअर्थशास्त्र हा जीवनोपयोगी व कौशल्याधारित विषय असून त्यामध्ये पोषण, गृहव्यवस्थापन, कुटुंब संसाधन व्यवस्थापन, वस्त्रशास्त्र व ग्राहक शिक्षण यांचा समावेश होतोमात्र ., पारंपरिक अध्यापन पद्धतींमुळे या विषयाचे अध्यापन अनेक वेळा सैद्धांतिक मर्यादेत अडकते. गृहअर्थशास्त्र शिक्षणात AI टूल्सचा वापर कसा केला जाऊ शकतो आणि त्याचा शैक्षणिक गुणवत्तेवर काय परिणाम होतो, हे शोधणे ही या संशोधनाची मुख्य समस्या आहे. या संशोधनात गृहअर्थशास्त्र शिक्षणात AI चा वापर केल्याने अध्यापनअध्ययन प्रक्रियेत होणारे बदल-, विद्यार्थ्यांची सहभागिता, समज आणि कौशल्यविकास यांचा अभ्यास करण्यात आला आहे .

प्रस्तुत संशोधनासाठी वर्णनात्मक संशोधन पद्धती अवलंबण्यात आलीसंशोधनासाठी वर्धा शहरातील . महाविद्यालयीन स्तरावरील गृहअर्थशास्त्र विषय शिकणारे विद्यार्थी व अध्यापक यांची निवड नमुन्याकरिता करण्यात आली आहेमाहिती संकलनासाठी प्रश्नावली ., मुलाखत व निरीक्षण या साधनांचा वापर करण्यात आला असून, संकलित माहितीचे विश्लेषण टक्केवारी व तक्त्यांच्या साहाय्याने करण्यात आलेयामध्ये दुय्यम स्रोत जसे की शोधनिबंध ., अहवाल आणि शैक्षणिक मासिकांचा वापर करून माहिती संकलित केली गेलीतसेच ., विविध AI टूल्स चॅटबॉट्स .उदा), स्मार्ट न्यूट्रिशन ट्रॅकर्स, व्हर्च्युअल डिझाइन सॉफ्टवेअरगृहअर्थशास्त्राच्या विविध शाखांमध्ये कसे उपयुक्त ठरतात (, याचे निरीक्षण करण्यात आले आहे.

संशोधनातून असे आढळून आले की, AI आधारित अध्यापनामुळे गृहअर्थशास्त्र शिक्षण अधिक वैयक्तिकृत, परिणामकारक व कौशल्याभिमुख झालेले आढळून आलेनात्मक समजविद्यार्थ्यांची संकल्प ., अध्ययनातील रुची, सक्रिय सहभाग व स्वअध्ययन क्षमता यामध्ये लक्षणीय वाढ दिसून आलीतसेच ., त्वरित अभिप्राय, सिम्युलेशन आधारित शिक्षण व डिजिटल संसाधनांच्या वापरामुळे अध्यापनअध्ययन प्रक्रियेची गुणवत्ता - तथापि .सुधारली आहे, AI चा प्रभावी व नैतिक वापर करण्यासाठी शिक्षकांचे तांत्रिक प्रशिक्षण, योग्य पायाभूत सुविधा व संस्थात्मक पाठबळ आवश्यक असल्याचे अधोरेखित झाले आहे.

मुख्य शब्द : कृत्रिम बुद्धिमत्ता (AI), गृहअर्थशास्त्र, पोषण, वैयक्तिकृत शिक्षण, स्मार्ट तंत्रज्ञान.

Machine Learning Models as the New Catalytic agent for the synthesis of C-N bond via Cross Coupling reactions: Transitioning from Intuitive to Algorithmic plan

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Abstract

For decades, the pursuit of chemical synthesis has been defined by a challenging cycle of trial and error. Precisely forecasting the efficacy and yield of a reaction has historically cost scientists months of manual labour a process more analogous to educated speculation than exact science. This study explores a more efficient path by applying **machine learning (ML)** to predict the outcomes of **C–N cross-coupling reactions**, a fundamental process in creating modern medicines and materials. In C–N coupling, the combination of different catalysts, ligands, bases, and solvents creates thousands of possible variables. Humans simply cannot calculate how all these factors interact simultaneously to determine if a reaction will succeed or fail. Artificial intelligence utilizes a dataset of thousands of miniaturized reactions to "train" several machine learning models. Instead of relying on rigid chemical rules, Artificial intelligence converts chemical structures into numerical data that the computer could understand. The models successfully predicted reaction yields with remarkable precision, even when presented with chemical combinations they need to see before. The analysis revealed which parts of the chemical molecules (like electronic properties or steric bulk) were the most influential in driving the reaction toward success. By using these models, researchers can study thousands of reactions digitally, narrowing down the best candidates before ever picking up a pipette. This research demonstrates that machine learning isn't just a buzzword; it's a practical tool that can bridge the gap between theoretical chemistry and lab bench success. By shifting from **intuition-based** chemistry to **data-driven** chemistry, we can significantly accelerate the discovery of new drugs and high-tech materials.

Keywords:- Machine learning, C–N cross-coupling reactions, Discovery of new drugs.

AI-Driven Automation in Pollinator Census

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Abstract

To address the "taxonomic bottleneck" in biodiversity monitoring by replacing manual insect counting with AI-powered computer vision. The study utilizes high-resolution camera traps paired with Deep Learning models (such as YOLOv10). These systems are trained on large-scale datasets to detect and classify pollinators—bees, butterflies, and hoverflies—in real-time. To ensure accuracy, the AI incorporates motion-tracking algorithms to avoid double-counting the same insect during a single floral visit. Efficiency: AI processing reduces data analysis time by over 75% compared to human observation. Accuracy: Current models achieve 90%+ accuracy in identifying common genera in controlled environments. Scalability: Low-power "Edge AI" devices allow for continuous, 24/7 monitoring in remote areas where human presence is impractical. AI-driven census tools provide a non-invasive, scalable solution for tracking pollinator trends. This technology is vital for identifying rapid population declines and informing urgent conservation strategies.

Keywords:- Artificial Intelligence, Computer Vision, Pollinator Census, Biodiversity Monitoring, Deep Learning, YOLO Architecture, Conservation Technology.

Structural and Investigation of metal ligand (Isatin–Ethylenediamine) Complexes and Their Antibacterial Activity

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Abstract

A novel Schiff base ligand was synthesized by the condensation of isatin with ethylenediamine in ethanolic medium using acetic acid as a catalyst. The ligand was subsequently complexed with selected transition metal ions to obtain a series of metal–ligand complexes. The synthesized ligand and its metal complexes were characterized by uv absorption, NMR, infrared (IR) spectroscopy to investigate the mode of coordination and structural features. IR spectral data revealed coordination of the ligand to the metal ion through azomethine nitrogen and carbonyl oxygen atoms. The antibacterial activity of the ligand and its metal complexes was evaluated against selected Gram-positive and Gram-negative bacterial strains using standard agar diffusion techniques. The metal complexes exhibited enhanced antibacterial activity compared to the free ligand, which may be attributed to chelation and improved permeability across bacterial cell membranes. The results indicate that isatin–ethylenediamine metal complexes have potential as promising antibacterial agents.

Keywords:- Isatin, Ethylenediamine, Schiff base, Metal complexes, IR spectroscopy, Antibacterial activity.

The Role of AI and Big Data in Predictive Financial Analytics and Investment Strategies

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Abstract

The financial industry is undergoing a significant transformation driven by advancements in Artificial Intelligence (AI) and Big Data analytics, particularly in the areas of predictive analytics and investment strategies. Traditional analytical methods are increasingly inadequate for processing the vast volume, velocity, and variety of financial data generated on a daily basis. In response, AI-based approaches, especially those utilizing Machine Learning (ML), deep learning, and Natural Language Processing (NLP), have emerged as powerful tools for developing models capable of real-time decision-making and effective risk management.

This paper explores the convergence of AI and Big Data within the financial sector, with a specific focus on predictive financial analytics and investment strategies. These technologies enable more accurate market forecasting, improved risk assessment, portfolio optimization, fraud detection, and sentiment analysis. The study also reviews key Big Data platforms, such as Hadoop and Spark, alongside methodological frameworks including supervised learning, unsupervised learning, and reinforcement learning. Practical applications and inherent limitations are examined through a comprehensive literature review, methodological analysis, and case study evaluation. The results demonstrate significant improvements in forecasting accuracy and investment returns, underscoring the critical role of AI and Big Data in modern financial infrastructures.

Keywords:- Artificial intelligence, Big Data, Predictive analytics, Investment strategies, Machine learning, Financial forecasting, Portfolio optimization, Sentiment analysis, Risk management.

Role of Artificial Intelligence in Smart Education Systems

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Abstract

Artificial Intelligence (AI) is playing a significant role in the development of smart education systems by transforming traditional teaching– learning practices. AI-based technologies enable personalized learning by adapting content, pace, and assessment methods according to individual learner needs. Intelligent tutoring systems, chatbots, and virtual assistants support students by providing instant feedback and academic guidance, thereby improving learning efficiency and engagement. In smart education systems, AI enhances administrative processes such as student performance analysis, attendance management, and curriculum planning through data-driven insights. Machine learning algorithms analyze learner behavior and academic data to predict outcomes, identify learning gaps, and support early intervention. AI also facilitates inclusive education by offering tools such as speech recognition, language translation, and adaptive interfaces for learners with diverse needs. Furthermore, AI supports teachers by reducing workload through automated evaluation, content generation, and classroom analytics, allowing educators to focus more on mentoring and creative instruction. Despite its advantages, the implementation of AI in education faces challenges related to data privacy, ethical concerns, infrastructure limitations, and the need for teacher training. This paper discusses the role, applications, benefits, and challenges of Artificial Intelligence in smart education systems and highlights its potential to enhance educational quality, accessibility, and effectiveness in the digital era.

Keywords:- Artificial Intelligence, Smart Education, Personalized Learning, Machine Learning, Educational Technology.

Kinetic Study Of Oxalate Ion Exchange Equilibria In Strongly Basic Anion Exchanger Thermax -A127

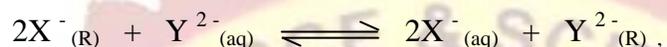
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Abstract

The equilibrium constant in the standard state K_{std} for the uni-bivalent ion exchange between the resin (R) and the aqueous solution (aq)



where $X^- = Cl^-$ and $Y^{2-} = C_2O_4^{2-}$, have been determined in anion exchange resin Thermax A127 with due regards to mean activity coefficients of ions both in the solution and in the resin. For this purpose the apparent equilibrium constants, K_{app} , for various equilibrium concentrations of the bivalent ion, $C_2O_4^{2-}$, in the solution have been calculated from the expression.

$$K_{app} = \frac{[C_{Y^{2-}}]_{(R)} [C_{X^-} \gamma_{\pm(aq)}]_{(aq)}^2}{[C_{X^-}]_{(R)}^2 [C_{Y^{2-}} \gamma_{\pm(aq)}]_{(aq)}}$$

where the 'C's are the concentrations of the ions and $\gamma_{\pm(aq)}$ is the mean activity coefficient of the ions in the solution. From this, the equilibrium constant in the standard state, K_{std} , is determined by a graphical method. The resin in its purely univalent anion form is chosen as the standard state. From K_{std} , for various temperature the enthalpy change for the ion exchange reaction has been evaluated.

Keywords:- Thermax A127, Oxalate ion, Exchange Equilibria.

Matrix Inequalities: Eigenvalues, Singular Values & Stability Applications

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Abstract

This paper explores matrix inequalities involving eigenvalues, singular values, determinants, and norms for complex $n \times n$ matrices, emphasizing their computational challenges and practical utility. Eigenvalues are roots of the characteristic polynomial $\det(A - \lambda I) = 0$, while singular values are positive square roots of eigenvalues of the positive semidefinite matrix A^*A ; for Hermitian positive semidefinite A , they coincide. Key applications include the condition number (ratio of largest to smallest singular value) for assessing ill-conditioning in $Ax = b$, bounds on real parts of eigenvalues for stability in delay differential equations, and convergence criteria for matrix power series $\sum \beta_k T^k$ based on eigenvalue locations within the scalar series radius. Results leverage tools like the Gershgorin theorem, derived from diagonal elements and row off-diagonal sums, with initial focus on non-negative matrices—including totally positive matrices (all minors positive)—which hold growing relevance in approximation theory.

Keywords:- Matrix Inequalities, Eigenvalues, Singular Values, polynomial det, differential equations.

Ethnobotanical Documentation of Indigenous Medicinal Practices in Wardha District, Maharashtra

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Abstract

Ethnobotanical knowledge remains a vital component of traditional healthcare systems among indigenous communities. The present study documents medicinal plant-based practices followed by tribal communities of Wardha District, Maharashtra, India. Field surveys were conducted in selected tribal villages using semi-structured interviews and interactions with traditional healers and knowledgeable informants. Data on vernacular names, plant parts used, preparation methods, dosage, and therapeutic applications were systematically recorded. The study documented several medicinal plant species belonging to diverse angiosperm families, commonly used to treat ailments such as fever, gastrointestinal disorders, skin infections, respiratory complaints, wounds, and urinary tract disorders. Leaves were the most frequently utilized plant part, followed by roots, bark, seeds, and whole plants. Remedies were primarily prepared as decoctions, pastes, powders, and fresh extracts. The findings highlight the richness of indigenous medicinal knowledge and emphasize the need for its conservation and scientific validation in view of rapid socio-cultural and environmental changes.

Keywords:- Ethnobotanical knowledge, indigenous communities, conservation, Wardha district.

New Dimensions in History Teaching and Research through Artificial Intelligence (AI)

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Abstract

In the twenty-first century, rapid progress in information and communication technology has brought major changes in the field of education and research. One of the most significant developments is Artificial Intelligence (AI), which is increasingly influencing various academic disciplines. Although history is generally viewed as a traditional subject based on written sources and human interpretation, the use of AI has introduced new methods and perspectives in history teaching and research.

This paper discusses the emerging role of Artificial Intelligence in history education and historical research. In the teaching of history, AI-based tools such as digital archives, intelligent learning platforms, virtual reality (VR), and augmented reality (AR) have made the learning process more interactive and student-centred. These tools help students to visualise historical events, places, and timelines, which improves their understanding of complex historical processes and enhances analytical and critical thinking skills.

In the area of historical research, AI plays an important role in the digitisation, organisation, translation, and analysis of large volumes of historical data, including manuscripts, inscriptions, archival records, and old texts. By using machine learning and data analysis techniques, historians can identify patterns related to social change, economic development, caste structure, gender relations, and political movements. This leads to new interpretations and a deeper understanding of the past. AI tools for plagiarism checking, reference management, and data organisation also help in maintaining research quality and academic integrity.

However, the use of AI also has limitations, such as technological bias, lack of emotional and cultural sensitivity, and over-dependence on automated systems. Therefore, AI should be used as a supportive tool rather than a replacement for human judgment and critical historical analysis.

The paper concludes that a balanced use of Artificial Intelligence and human intellect can strengthen history teaching and research, making the discipline more relevant, innovative, and future-oriented.

Keywords:- Artificial Intelligence, History Teaching, Historical Research, Digital Humanities, Educational Technology.

A Study of Use of AI in Inflation Prediction and Monetary Policy Decisions

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Abstract

Accurate inflation forecasting is fundamental to the formulation of effective monetary policy, as it directly influences interest rate decisions, price stability, and overall macroeconomic performance. Conventional econometric models have long been employed for this purpose; however, their effectiveness is often constrained by assumptions of linearity, limited adaptability, and challenges in processing large and complex datasets. With rapid advancements in computational technologies, Artificial Intelligence (AI) has gained prominence as a powerful alternative for enhancing inflation prediction and supporting monetary policy decisions. This study investigates the application of AI-based models in forecasting inflation and examines their relevance for modern monetary policy frameworks. The paper analyses various AI techniques, including machine learning and deep learning methods such as neural networks, decision trees, support vector machines, and ensemble models, highlighting their ability to identify nonlinear relationships and dynamic patterns in macroeconomic indicators. Through an analytical review of empirical research and practical implementations, the study compares AI-driven forecasting outcomes with traditional statistical approaches. The research further evaluates how AI-generated insights assist policymakers in making timely and informed decisions related to inflation targeting, interest rate adjustments, and macroeconomic stabilization. The findings suggest that AI-based models demonstrate superior forecasting performance, particularly in volatile and uncertain economic environments, by effectively incorporating real time and high-dimensional data. Despite these advantages, the study also identifies significant challenges, including concerns over data reliability, model transparency, explainability, and the potential risks of over-reliance on automated systems in policy formulation. The paper concludes that AI should be viewed as a supportive decision-making tool rather than a replacement for expert judgment. Integrating AI technologies with traditional economic analysis and institutional knowledge can enhance the accuracy, credibility, and effectiveness of monetary policy decisions in an increasingly complex global economy.

Role of Artificial Intelligence in Modern Drug Discovery and Healthcare Diagnostics

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Abstract

Artificial Intelligence (AI) has emerged as a transformative technology in modern healthcare, significantly reshaping drug discovery and clinical diagnostics. By integrating machine learning and deep learning algorithms with large-scale biomedical datasets In drug discovery, AI accelerates the entire development pipeline. AI-driven target identification utilizes genomic and proteomic data to accurately identify novel disease targets. Machine learning models enable high-throughput virtual screening of millions of compounds, predicting their biological activity, binding affinity, and safety profiles. This significantly reduces the reliance on time-consuming laboratory experiments. Furthermore, AI-supported lead optimization enhances drug efficacy, reduces toxicity, and improves pharmacokinetic properties. AI also improves clinical trial design by optimizing patient selection, dosage, and outcome prediction, thereby reducing failure rates. These advancements have the potential to shorten drug development timelines from 10–15 years to 3–5 years and reduce costs by up to 50%. Beyond drug discovery, AI is revolutionizing healthcare diagnostics. In medical imaging, AI systems analyze X-rays, CT scans, and MRI images with accuracy comparable to expert clinicians, enabling early and precise disease detection. In pathology and genomics, AI assists in identifying cancerous tissues, genetic mutations, and disease progression, supporting precision medicine. These systems enhance diagnostic accuracy, reduce interpretation time, and optimize clinical workflows. Despite its benefits, AI adoption faces challenges such as data bias, regulatory constraints, limited interpretability, and integration into existing healthcare systems. Addressing these issues through ethical governance, high-quality data, and interdisciplinary collaboration is essential. Overall, AI holds immense promise in delivering faster, more accurate, and personalized healthcare solutions worldwide.

Keywords:- Biomedical, Lead optimization, X-rays, CT scans, MRI

Artificial Intelligence and Make in India

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Abstract

Artificial Intelligence (AI) has become a transformative technology that holds the potential to drive economic growth, innovation, and global leadership. India, with its growing technological capabilities, has embraced AI as a core pillar of its Make in India initiative. The Government of India has recognized the strategic importance of AI, aligning it with its national development agenda through a series of policies and missions. AI is being applied across key sectors such as healthcare, agriculture, education, manufacturing, and governance, creating numerous opportunities for India to leapfrog in technology. This paper explores the development and applications of AI in India, with a focus on how it is driving the Make in India vision. By examining the opportunities, challenges, and future directions of AI in India, this paper highlights its potential to reshape the country's economic landscape and position it as a global leader in the digital economy.

Keywords:- Artificial Intelligence, Innovation, economic growth

Literature Review: Role and Importance

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Abstract

Literature forms the basics of any research. It connects the present research with the past research in many ways. A literature review is a survey and critical evaluation of existing scholarly work (books, articles) on a specific topic, summarizing key research, identifying trends, theories, and gaps to provide context for new research, often forming part of a larger paper or standing alone as an assignment. It's not just a summary but a synthesis that compares, contrasts, and connects different sources to show where your own study fits in, demonstrating familiarity with the field and highlighting unanswered questions.

Artificial Intelligence and Library Services

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Artificial intelligence has emerged as a transformative technology in the field of library and information services, reshaping traditional practices and introducing innovative service models. This research paper examines the application of artificial intelligence in libraries and its impact on core library functions such as cataloguing, classification, information retrieval, reference services, and library management. The study highlights the role of AI based tools including automated metadata generation, intelligent search systems, recommendation engines, chatbots, and data analytics in improving efficiency, accuracy, and user satisfaction. It also discusses the contribution of artificial intelligence to digital libraries through digitization, preservation, and content organization. While artificial intelligence offers significant opportunities for enhancing library services, the paper emphasizes that human expertise remains central to ethical decision making, user guidance, and professional judgment. Challenges related to data privacy, algorithmic bias, cost, and skill development are also addressed. The study concludes that the effective integration of artificial intelligence with traditional librarianship can strengthen libraries as dynamic, user centered knowledge institutions in the digital age.

Invisible Use of AI in Libraries: A Survey on Unaware AI Consumption by Users

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Abstract

Artificial Intelligence (AI) technologies are increasingly embedded in contemporary library systems, shaping information access, discovery, and user experience. However, a significant proportion of library users consume AI-driven services without being consciously aware of the presence or role of AI in these systems. This phenomenon, referred to in this study as invisible AI consumption, remains largely unexplored within Library and Information Science (LIS) literature. The present empirical survey investigates the extent of user's unawareness of AI applications in academic libraries, their patterns of interaction with AI-enabled services, and the implications of such invisibility for user trust, ethics, and information literacy.

The central **research problem of this study** is to examine the extent to which library users unknowingly interact with AI-enabled services and to assess their level of understanding, perception, and trust toward such technologies. The study also explores whether lack of awareness impacts ethical concerns, data privacy perceptions, and informed usage of library resources.

Artificial Intelligence across Education

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force across the spectrum of education, the economy, and science, reshaping how knowledge is generated, disseminated, and applied. In education, AI-driven tools enable personalized learning, adaptive assessment, and improved access to quality instruction, enhancing learner outcomes and institutional efficiency. Economically, AI accelerates productivity, drives innovation, and creates new industries while simultaneously redefining labour markets and skill requirements. Within the scientific domain, AI enhances data analysis, modelling, and simulation, enabling breakthroughs in fields ranging from healthcare and climate science to materials discovery and space exploration. The convergence of AI across these sectors fosters a mutually reinforcing cycle in which scientific advances inform AI development, AI-powered education cultivates a future-ready workforce, and economic investment sustains innovation ecosystems. However, this rapid integration also raises critical ethical, social, and governance challenges, including equity, transparency, and accountability. Addressing these concerns is essential to harness AI's potential for inclusive growth and sustainable scientific progress

Artificial Intelligence (AI) is increasingly transforming education by reshaping teaching, learning, and institutional management. AI-powered systems enable personalized learning experiences through adaptive content delivery, intelligent tutoring, and real-time assessment, addressing diverse learner needs and improving educational outcomes. Instructors benefit from AI-assisted analytics that support curriculum design, student performance monitoring, and early identification of learning gaps. At the institutional level, AI enhances administrative efficiency through automation, predictive enrolment modelling, and resource optimization. Despite these advancements, the integration of AI in education raises significant ethical and pedagogical concerns, including data privacy, algorithmic bias, and the evolving role of educators. Addressing these challenges through responsible design, policy frameworks, and digital literacy is essential to ensure that AI serves as an inclusive and effective tool for advancing equitable and lifelong learning.

Use of AI in the Creation of Educational Contents

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Abstract

Artificial Intelligence (AI) has rapidly changed how we create and deliver educational content to students in many different ways. As technologies like machine learning, Natural Language Processing (NLP), and Generative Models continue to grow, so too does our ability to create and use AI to develop, adapt, and personalise our courses for students. The advantage of these types of technologies is that they allow us to create and distribute digital textbooks, quizzes, lesson plans, multimedia sources, and interactive simulations without requiring a large amount of time or effort from teachers to maintain a high-quality instructional product. The most significant way AI has impacted how we create educational content is through Personalization. AI uses the information it collects on student performance, preference, and engagement patterns to generate content based on each student's specific needs, thus developing adaptive Learning Paths and improving Learning Outcomes for students. In addition to Personalization, AI also promotes Accessibility and Inclusion through real-time Translation, Speech-to-Text, and Materials tailored to the needs of students with disabilities. AI-generated Analytics also support Teachers in identifying Knowledge Gaps and refining content to better fit the needs of students based on their Feedback and Assessment Results. Finally, as the advancement of AI technologies will continue to occur over time, there will be opportunities for teachers to continuously update all educational materials to ensure their relevance to both the ever-changing academic and industry standards. Although there are many benefits to using AI as part of the process of creating educational content, there are many Challenges that educators face while integrating AI into their classrooms.

Keywords:- Artificial Intelligence, Educational Content, Machine Learning, Generative Models

Artificial Intelligence in Library and Information Science: Transforming Services, Skills, and User Engagement

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Abstract

The rapid advancement of Artificial Intelligence (AI) is transforming the field of Library and Information Science (LIS) by reshaping traditional library services, information management practices, and user engagement models. AI technologies such as machine learning, natural language processing, expert systems, and data analytics are increasingly being integrated into library operations to enhance efficiency, accuracy, and accessibility. This paper examines the growing role of AI in modern libraries and its impact on core LIS functions, including cataloguing, classification, indexing, information retrieval, and reference services. AI-powered tools enable automated metadata generation, intelligent search systems, personalized recommendation services, and virtual reference assistants, thereby improving user experience and reducing routine manual workloads for library professionals.

Furthermore, the study highlights the significance of AI in managing large volumes of digital information, supporting research analytics, and preserving digital resources through predictive maintenance and smart archiving systems. The integration of AI also promotes inclusive library services by enabling multilingual access, assistive technologies for users with disabilities, and 24/7 information support. However, alongside these benefits, the paper addresses key challenges such as ethical concerns, data privacy, algorithmic bias, skill gaps among library professionals, and the need for continuous professional development.

The abstract emphasizes the necessity for LIS education and training programs to incorporate AI-related competencies to prepare future librarians for technology-driven environments. By adopting AI responsibly and strategically, libraries can strengthen their role as dynamic knowledge hubs in the digital age. Overall, the study concludes that AI is not a replacement for librarians but a powerful tool that complements professional expertise, enhances service quality, and supports the evolving mission of libraries in a knowledge-based society.

Keywords:- Artificial Intelligence, Library and Information Science, Digital Libraries, Information Retrieval, User Services

Leveraging Artificial intelligence to Advance women's Health (Breast Cancer)

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Abstract

Breast cancer is a leading cause of mortality among women worldwide. Early detection is crucial for effective treatment and improved survival rates. Artificial intelligence (AI) has shown promise in improving breast cancer diagnosis and treatment outcomes. This review explores the current state of AI-powered predictive models for early detection of breast cancer in women, highlighting opportunities and challenges. We discuss the role of machine learning algorithms, medical imaging, and clinical data in developing predictive models.

In conclusion, AI-powered predictive models have the potential to revolutionize breast cancer detection and treatment. By leveraging machine learning algorithms and large datasets, these models can improve accuracy, reduce false positives, and enhance patient outcomes. However, addressing challenges such as data quality, bias, and regulatory frameworks is crucial for successful implementation.

When Intelligent Systems Fail: Milestones, Trajectories, and Systemic Vulnerabilities of Artificial Intelligence

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Abstract:

Artificial Intelligence (AI) has evolved from an experimental computational concept into a foundational technology that increasingly shapes contemporary social, economic, and institutional structures. Rapid advances in machine learning, deep neural networks, and generative systems have transformed critical domains such as healthcare, education, governance, industry, and scientific research. At the same time, the accelerated pace of AI development has produced complex structural dependencies, ethical dilemmas, and socio-economic disruptions that raise important questions about the long-term sustainability of intelligent systems.

This paper undertakes a critical and hypothetical inquiry into the possibility of systemic failure or collapse within artificial intelligence ecosystems. Rather than treating collapse as a technological end point, the study conceptualizes it as a condition marked by loss of scalability, withdrawal of institutional and economic support, regulatory constraints, infrastructural fragility, and erosion of public trust. The paper reviews major milestones in the evolution of AI to demonstrate how contemporary systems have emerged through layered technological, economic, and institutional processes. It then examines emerging trajectories of AI deployment across key sectors, highlighting both transformative potential and embedded vulnerabilities.

Using a qualitative, scenario-based analytical framework, the study identifies plausible collapse pathways, including technical stagnation, economic withdrawal, regulatory intervention, supply-chain disruption, and social backlash. Particular attention is given to the Indian policy and legal context, including national AI strategies, data protection legislation, higher education reforms, and ethical AI frameworks.

The paper argues that AI collapse is not an inevitable outcome of technological progress but a contingent risk shaped by governance choices, regulatory balance, and institutional preparedness. It concludes by emphasizing the need for resilient, human-centred, and ethically grounded approaches to AI development, especially within higher education and public policy.

Keywords:- Artificial Intelligence; AI collapse; generative AI; technological risk; future studies; AI governance; India

Application and Use of Artificial Intelligence in Library services for Academic Libraries

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In the re recent years AI offering various opportunities to enhance library services and user experiences. Artificial Intelligence also growing significance in transforming Library and Information Science. The application and use of AI technology in academic libraries is setting a level of accuracy and effectiveness in library services delivery This paper presents a comprehensive review of the literature on use of AI in Academic Libraries. The review also discusses several challenges and limitations associated with AI implementations in LIS. Paper also highlighted user perspectives and user experiences with AI-driven library services.

In this paper the roles and skills of librarians and information professional in the AI era are also discussed. The study also focused on the importance of digital literacy, data management, and ethical decision-making. Finally, future directions and research agenda for AI in LIS are identified, including the development of AI-driven tools are services. The review underscores the transformative potential of AI in LIS.. The challenges and opportunities in implantation of AI and provides its benefits for libraries and their users are discussed in this paper.

In conclusion it is essential for libraries to remain vigilant, proactive, and ethically mindful for implementation of AI in LIS. AI technologies allows libraries to provide more efficient, personalized, and accessible services to their patrons which is need of hours. To integrate AI successfully, libraries must collaborate with professionals, researchers, and policymakers and adopt a continuing education approach to AI. Present study recommends that the library should provide alternative and reliable power supplies and the train library staff to stay relevant in this technology driven era.

Impact of Artificial Intelligence in Library Services

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The integration of Artificial Intelligence (AI) in library services is transforming the way libraries operate and provide services to their users. This paper explores the transformative role of AI in library services, highlighting opportunities, challenges, and future directions. AI technologies such as machine learning and natural language processing are being applied in libraries to automate tasks, enhance user experiences, and improve operational efficiency. AI-powered applications in libraries include cataloging and classification, user services, content recommendation, and digital libraries.

These applications have improved efficiency, enhanced user experience, and increased accessibility. However, challenges such as data quality, bias and fairness, security, and privacy need to be addressed. This paper discusses case studies of libraries that have successfully implemented AI-powered services, highlighting best practices and lessons learned. The future directions of AI in libraries include AI-driven personalization, collaborative AI, and ethical AI. Recommendations include developing AI strategies, investing in staff training, and monitoring AI systems.

The paper concludes that AI has the potential to revolutionize library services, but it requires careful planning, implementation, and evaluation. By addressing the challenges and leveraging the opportunities, libraries can harness the power of AI to provide better services to their users and stay relevant in the digital age.

Upbringing in the Age of Screens: A Theoretical and Analytical Study of Changing Child-Rearing Practices, Digital Addiction, and Parental Responsibility

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Abstract:

The rapid expansion of digital technology has profoundly transformed childhood experiences and parenting practices across societies. Digital devices now function as influential agents of socialization, reshaping cognitive development, emotional regulation, and social interaction among children. While technology offers significant educational and informational advantages, its excessive and unregulated use has led to emerging concerns such as digital addiction, attention disorders, emotional detachment, and social isolation. Drawing conceptual insights from the socio-critical Marathi article "आपणच अपराधी"..., this paper provides a comprehensive analytical examination of the changing trends in child upbringing, the psychological, social, and physical effects of digital immersion, and the evolving responsibilities of parents in the digital age. Anchored in the theoretical frameworks of Erikson's Psychosocial Development Theory, Vygotsky's Sociocultural Theory, and Bandura's Social Learning Theory, the study argues that children's digital addiction is not an inevitable outcome of technological progress but a socially constructed phenomenon rooted in parenting practices, cultural priorities, and shifting value systems. The paper advocates for conscious parenting, digital discipline, and balanced technological integration to ensure holistic child development.

Keywords:- Child upbringing, digital addiction, parenting responsibility, psychosocial development, sociocultural learning

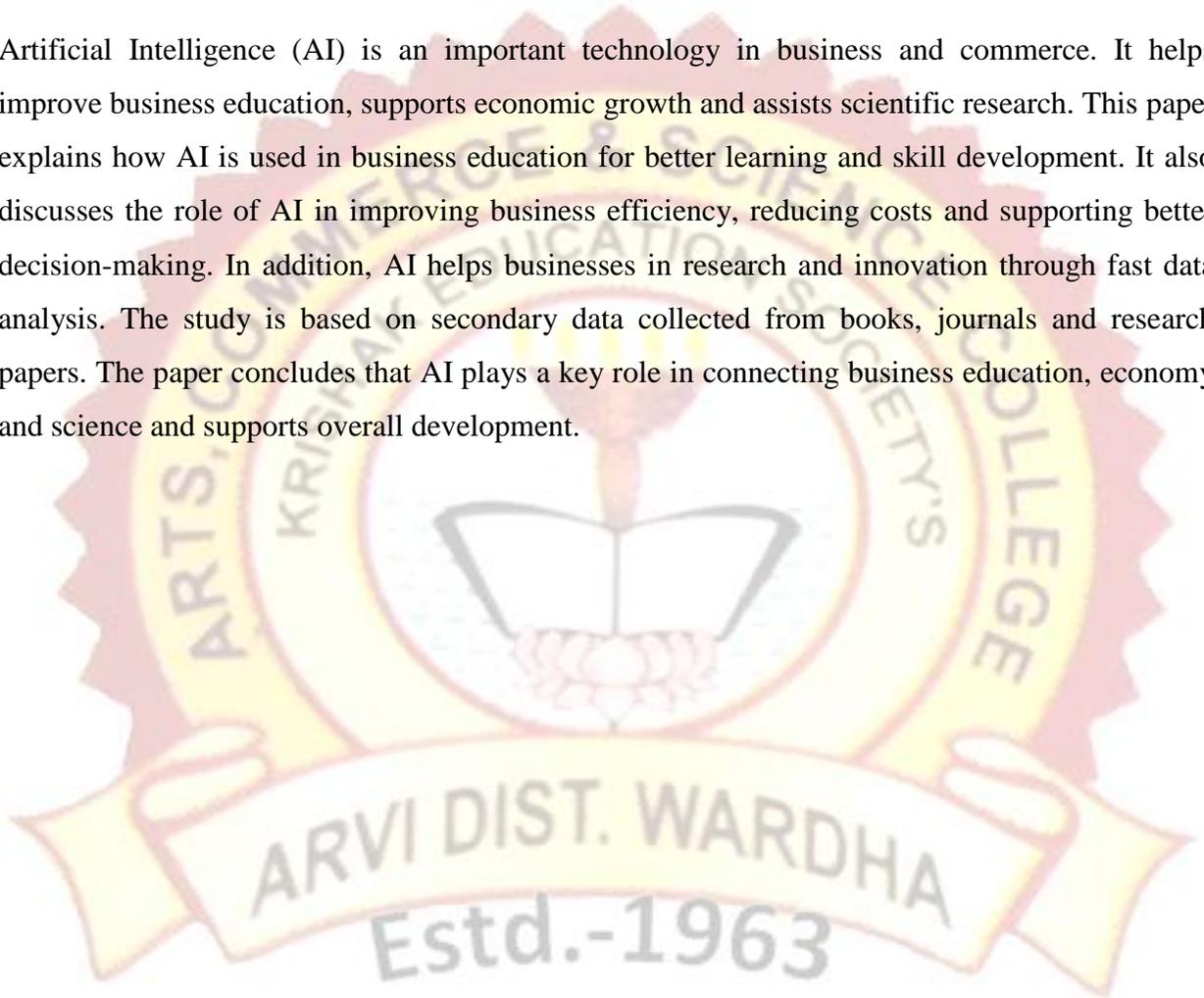
AI in Business and Commerce: Transforming Education, Economy and Science

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Abstract

Artificial Intelligence (AI) is an important technology in business and commerce. It helps improve business education, supports economic growth and assists scientific research. This paper explains how AI is used in business education for better learning and skill development. It also discusses the role of AI in improving business efficiency, reducing costs and supporting better decision-making. In addition, AI helps businesses in research and innovation through fast data analysis. The study is based on secondary data collected from books, journals and research papers. The paper concludes that AI plays a key role in connecting business education, economy and science and supports overall development.



AI Tool for Faculty Professional Development

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Abstract

The rapid advancement of Artificial Intelligence (AI) has significantly transformed the landscape of higher education, particularly in the area of faculty professional development. AI-based tools offer innovative opportunities to enhance teaching effectiveness, research productivity, and administrative efficiency among faculty members. This paper explores the role of AI tools in supporting continuous professional development of faculty by enabling personalized learning pathways, intelligent content creation, automated assessment, data-driven feedback, and research assistance. AI applications such as learning analytics, virtual mentors, adaptive training platforms, and academic writing assistants help educators update pedagogical skills, integrate technology into teaching, and engage in lifelong learning. The study highlights how AI tools promote reflective teaching practices, improve instructional design, and support evidence-based decision-making. It also discusses challenges related to ethical use, data privacy, digital literacy, and institutional readiness. The paper concludes that strategic adoption of AI tools can empower faculty, foster innovation in teaching and learning, and contribute to sustainable professional growth in higher education institutions.

Keywords:- Artificial Intelligence, Faculty Development, Higher Education, AI Tools, Digital Pedagogy, Educational Technology

Brain Tumor Detection using Digital Image Processing

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Abstract

Brain tumor detection is one of the most critical tasks in medical diagnosis, as early and accurate identification plays a vital role in effective treatment planning and patient survival. Magnetic Resonance Imaging (MRI) is widely used for brain tumor analysis due to its high resolution and non-invasive nature; however, manual interpretation of MRI scans is time-consuming and prone to human error. To overcome these limitations, this research proposes an automated brain tumor detection and classification system using digital image processing and machine learning techniques. The proposed approach involves pre-processing MRI images through gray scale conversion, noise removal, and segmentation to extract relevant tumor regions. Texture and color-based features are extracted and used to train machine learning classifiers. Support Vector Machine (SVM) and Random Forest algorithms are implemented and evaluated for tumor classification. Experimental results demonstrate that the proposed method achieves improved accuracy compared to individual classifiers, with an overall accuracy of 80%, outperforming SVM and Random Forest models. The findings indicate that machine learning-based Computer-Aided Diagnosis (CAD) systems can assist radiologists in achieving faster, more accurate, and reliable brain tumor detection. This approach reduces diagnostic burden and enhances decision-making in medical imaging applications.

Keywords:- Brain Tumor Detection (BTD), Magnetic Resonance Imaging (MRI), Digital Image Processing (DIP), Machine Learning (ML), Support Vector Machine (SVM), Random Forest (RF), Digital Image Segmentation (DIS), Computer-Aided Diagnosis (CAD)

कृत्रिम बुद्धीमत्ता आणि साहित्य

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मनुष्य हा मूलतःच जिज्ञास आहे. आपल्या अवतीभवतीच्या निसर्गाबद्दल त्याला नेहमीच कुतूहल वाटत असते. ह्या निसर्गाचे चक्र विशिष्ट क्रमाने चालू असते. ह्या ऋतुचक्रानुसार अनेक घटना घडत असतात. निसर्गाप्रमाणेच आकाशस्थ ग्रह, तारे ह्यांबद्दल मानवाला जिज्ञासा आहे. ह्या ग्रह ता-यांच्या स्थिती, त्याचे भ्रमण ह्याविषयीही त्याला आश्चर्ययुक्त कुतूहल असते त्याबाबत अधिकाधिक ज्ञान प्राप्त करून घेउन निसर्गावर मात करून निसर्गाचा मानवी जीवन मानवी जीवन सुखी करण्यासाठी उपयोग करून घेण्याच्या लालसेतून मानवाने अनेक शोध लावले व तंत्रे विकसित केले. त्यातून मानवी जीवन अधिक समृद्ध होत गेले. अगदी अश्मयुगाचा उदयही ह्याच विचारातून आणि जिज्ञासेतून झाला असे म्हणता येईल.

कृत्रिम बुद्धीमत्ता आणि साहित्या ह्याचा जेव्हा आपण विचार करू लागतो. तेव्हा एखाद्या गोष्टीचे ज्ञान आपणाला अवगत नसेल. त्या साहित्याविषयी माहिती आपण AI च्या माध्यमातून आपण सहज उपलब्ध करून आपल्या ज्ञानात भर घालू शकतो अर्थात ह्या वेगवेळ्या शाखाही परस्पर संबंधीत आहेत. मराठीचा अभ्यास करतांना साईडचा उपयोग करावा लागेल त्यामुळे मानव्यविद्या आणि विज्ञान यातील साम्यभेद स्पष्ट करणे सोपे होईल.

कृत्रिम बुद्धीमत्ता आणि साहित्या याचा परस्पर एकमेकांशी संबंध आहे. साहित्यातील एखादी गोष्ट आपणाला आठवत नसेल तर आपण नवीन टेक्नोलॉजी आपण स्विकारलेली पाहिजे. कारण AI मुळे आपले काम मिनीटमध्ये आपण करू शकतो. साहित्य कला-भाषा या मानवी अविष्कारांचा तपशीलवार अभ्यास होतो. हे लक्षात घेउन आपण पुढील प्रकरणात कलांची निर्मिती प्रेरणा, कलाची माध्यमे, त्यांची सौंदर्यतत्त्वे कला व्यवहार आणि समाजजीवनातील संबंध आपला शोधता येते.

The Role of Artificial Intelligence in Inorganic Chemistry: Accelerating Discovery and Catalyst Design

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Abstract

The vast chemical space of inorganic compounds—comprising nearly every element in the periodic table—presents a "search space" too large for traditional trial-and-error experimentation. This study explores the role of Artificial Intelligence (AI) and Machine Learning (ML) in streamlining the discovery, synthesis, and property prediction of inorganic materials and coordination complexes. The research highlights the transition from traditional Density Functional Theory (DFT) calculations to AI-accelerated workflows. Key methodologies include: Generative Models: Utilizing Variational Autoencoders (VAEs) and Diffusion models to design novel Metal-Organic Frameworks (MOFs) with optimized gas-storage capacities. Predictive Analytics: Employing Graph Neural Networks (GNNs) to predict the electronic properties and catalytic activity of transition metal complexes. Autonomous Labs: Integrating AI with robotic platforms (Self-Driving Labs) to perform closed-loop synthesis and characterization of inorganic catalysts. AI integration has transformed inorganic research in three primary ways: Speed: Computational screening that once took months is now achieved in hours, identifying promising catalysts for hydrogen production and carbon capture. Accuracy: ML potentials now rival the accuracy of quantum mechanical simulations at a fraction of the computational cost. Synthesis Prediction: AI models (e.g., MOSAIC) now accurately predict experimental "recipes," suggesting successful temperature, solvent, and ligand combinations for previously unreported compounds. AI is shifting inorganic chemistry from a descriptive science to a predictive one. By bridging the gap between theoretical modeling and benchtop synthesis, AI is accelerating the development of the next generation of semiconductors, superconductors, and sustainable catalysts.

Keywords:- Inorganic Chemistry, Machine Learning, Coordination Compounds, Metal-Organic Frameworks (MOFs), Catalyst Discovery, High-Throughput Screening.

महिलांच्या आरोग्यात (AI) आर्टिफिशल इंटेलिजन्सचे योगदान

सरिता म. राऊत

गृह अर्थशास्त्र विभाग

हुतात्मा राष्ट्रीय आर्ट्स अँड सायन्स कॉलेज आ टी. जि. वर्धा, महाराष्ट्र, भारत

सारांश (Abstract)

(AI) संगणक प्रणाली 'कृत्रिम बुद्धिमतेचे' महिला आरोग्य क्षेत्रामध्ये महत्वपूर्ण व सकारात्मक योगदान आहे. जसे ओव्ह्यूलेशन, गर्भधारणा, IVF (आय. व्ही. एफ.) व्दारे गर्भधारणा, बाळाची वाढ, बाळंतपण तेही नॉर्मल, हाय-रिस्क सिजेरियन, प्रजनन, आरोग्य व कुटूंब नियोजन, काय खावे काय टाळावे, बाळाची देखरेख, वंध्यत्व, या सर्वांसाठी विविध यंत्रांचा व मशीनचा उपयोग, स्तन कर्करोग, गर्भाशयाच्या मुखाचा कर्करोगाचे प्रादूर्भाव मॅमोग्राफी AI अल्गोरिदम, बायोप्सीव्दारे निदान, मासिक पाळीतील समस्या त्याचे असंतुलन, हार्मोनल बदल त्यासोबतच मानसिक आरोग्य बिघडल्यास चॅटबॉट्स आणि मॉनिटरिंग टूल्सव्दारे निदान, विविध ॲप्सच्या माध्यमातून ॲलेक्सा किंवा गुगल असिस्टंटसारखे आवाज आधारित साधने, ऑनलाईन समुदाय हे सर्व आरोग्य विषयक माहिती देणारे प्लॅटफॉर्म उपलब्ध झालेले आहेत. तसेच आरोग्य संस्थांमध्ये होणाऱ्या गुन्हेगारी घटनांचा मागोवा घेता येणे, कमी डॉक्टर असलेल्या भागात ग्रामीण व दुरूस्थ भागातील महिलांना टेलीमेडिसीन व्दारे उपचार व डॉक्टर – रूग्ण संवाद हे सर्व AI तंत्रज्ञानाच्या वापराने शक्य झाले आहे. त्यामुळे AI हा महिलांचे आरोग्य उत्तम ठेवण्यास कणा ठरू शकतो असे म्हणणे वावगे होणार नाही. महिलांच्या शारिरिक, भावनिक, मानसिक आरोग्य बिघडल्यास त्या विविध रोगांची लक्षणे, जोखीम ओळखून, रोगाचे निदान करून यशस्वी उपचार घेण्यात AI 'कृत्रिम बुद्धिमतेचा' मोलाचा वाटा आहे.

ए आय आणि महिलांची सुरक्षितता

योगिता रमेशराव ढगे

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महिलांना बहुआयामी धोक्यांचा सामना करावा लागतो ज्यामध्ये वैयक्तिक सुरक्षेच्या धोक्यांपासून ते सामाजिक रचनेत खोलवर रुजलेल्या भेदभावापर्यंतचा समावेश आहे,

सध्याच्या परिस्थितीत महिलांना भीती किंवा अडथळ्यांशिवाय समाजात पूर्णपणे सहभागी होता येईल याची खात्री करण्यासाठी नाविन्यपूर्ण धोरणांची आवश्यकता आहे, सरकारने महिलांवर हिंसाचारासाठी अतिशय कठोर कायदे आणले असले तरी, महिलांची सुरक्षा हा एक वादग्रस्त आणि उपक्रम आहे सध्याच्या युगात ए आय मध्ये लक्षणीय वाढ आणि प्रभाव दिसून येत आहे अनेक प्रमुख ट्रेंड आणि विकास विविध क्षेत्रांमध्ये ए आय ची भूमिका अधोरेखित करतात, आज आपण महिलांचा ज्ञानाचा उत्सव साजरा करीत असतानाही जागतिक स्तरावर त्यांचे खरे सक्षमीकरण अजूनही मागे आहे.

कामाच्या ठिकाणी महिलांना दडपशाही आणि अल्पसंख्यांक वागणूक सहन करावी लागत आहे, जी लिंग असमानता आणि मानवा मधील असुंकुचित मानसीकतेचा परिणाम आहे. शारीरिक हल्ले तसेच घरघुती अत्याचारांपासून ते लैंगिक छळ, तस्करी आणि लिंग आधारित गुन्ह्यांपर्यंत, महिलांना अशा विविध प्रकारच्या गुन्ह्यांचा सामना करावा लागतो.

महिलांना अनेकदा वस्तुनिष्ठ केले जाते, त्यामुळे महिलांचे शारीरिक आणि मानसिक असे दोन्ही प्रकारचे नुकसान होते, हे एक त्रासदायक वास्तव समाजात कायम आहे. महिलांचा सुरक्षिततेसाठी विविध तंत्रज्ञानाची उपलब्धता असूनही त्यांच्याकडे प्रभावीपणाचा अभाव आहे आणि गरज पडल्यास ते वेळेवर मदत करण्यास अपयशी ठरत.

निष्कर्ष: जगभरातील महिलांसाठी सुरक्षित वातावरण निर्माण करण्यासाठी ए आय आणि एम एल चा वापर आणि कृती करण्याचे एक आकर्षक आव्हान बनवून देखील काम करते.

Role of Artificial Intelligence to Improve Women's Health

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Abstract

The use of AI in medicine is currently an issue of great interest. AI technology is now capable of deriving algorithms which can be used for the Diagnosis and Treatment of Disease and Medical Research. The health issues in different body systems regarding women's health have been extensively investigated. Cardiovascular Disease, Osteoporosis, Breast Cancer, Cervical, and Endometrial Cancer have been the areas of interest of AI research in women's health. It has been suggested that AI also plays an important role in personalizing treatment for infertility with prediction of live birth, embryo implantation, endometriosis, and postpartum hemorrhage, which will assist in reproductive technology.

The present study aims to evaluate women's attitudes towards AI-based technology used in healthcare and assess patient monitoring, digital biomarkers, and support for medical decision-making.

In conclusion, regulations and guidelines are essential in handling patient data. There should be limitations in handling patient data and the probable situations where AI should or should not be used. There should be social, legal, and ethical implementation of using AI in medicine.

Keywords:- Diagnosis, Algorithm, Prediction, Reproductive

External Morphological Study of Seeds and Fruits in *Barleria*

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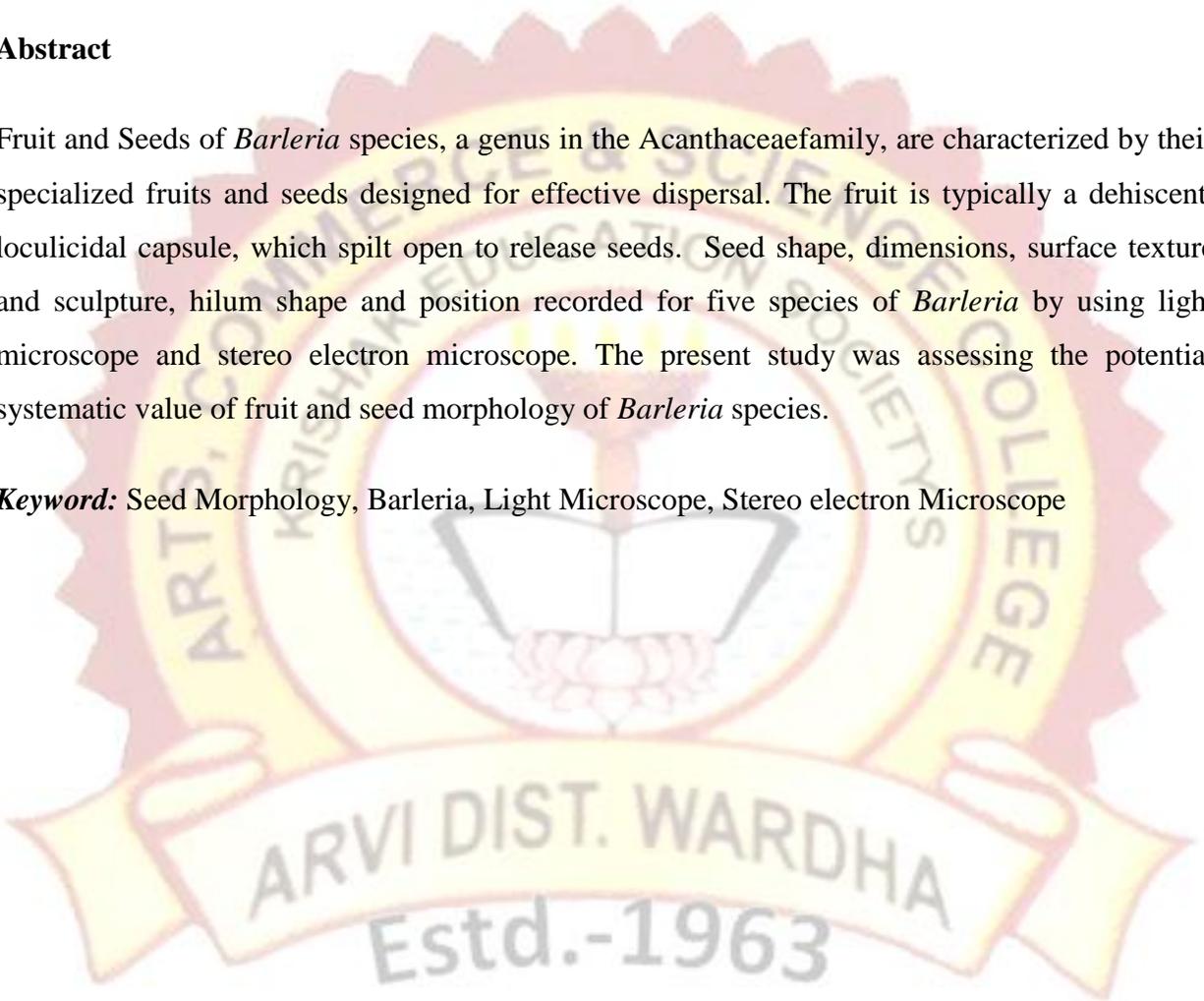
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Abstract

Fruit and Seeds of *Barleria* species, a genus in the Acanthaceae family, are characterized by their specialized fruits and seeds designed for effective dispersal. The fruit is typically a dehiscent, loculicidal capsule, which splits open to release seeds. Seed shape, dimensions, surface texture and sculpture, hilum shape and position recorded for five species of *Barleria* by using light microscope and stereo electron microscope. The present study was assessing the potential systematic value of fruit and seed morphology of *Barleria* species.

Keyword: Seed Morphology, *Barleria*, Light Microscope, Stereo electron Microscope



Study of AI for Educational used in PVA hydrogels Assessment and Evaluation

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Abstract

AI for educational used in PVA hydrogels Assessment mainly XG Boost , ML algorithms predictive modeling of PVA hydrogels mechanical properties RF, SVM, ANN, MLP are used to predict the PVA hydrogels tensile strength elasticity of PVA hydrogels and compressive non conductive materials PAV hydrogels based on freeze thaw preparation method of PVA hydrogels and mixture of PVA e.g.,molecular weight . AI method are used to provide Interpretable insights . AI helps resolves the PVA hydrogels properties such as balancing..ANN provided PVA swelling kinetics .24\7 support AI powered chat bots provided 24\7 support assistance to researchers.Evaluation Methodology Contributions static testing to dynamics Automated Essay Scoring (AES) provided structure PVA .AI in Education (AIEd) addressed application, personalized learning to individual data (e.g.PVA hydrogels Administrative Efficiency Reduced the manual work load for educators,Accesibility and Inclusion help researches with quality educations.Intelligents Tutoring Systems (ITS) adapting the typical stages of tasks based on researcher performance Multi Model Data analysis provided Interaction patters SHAP PVA analysis PVA molecular weight and degree of PVA hydrolysis Computer Vision and Convolutional Neural Network (CNNs) . AI is applied to analyze (SEM analysis technique) images of PAV based the quality of 3D printed Macroporous hydrogels.PVA molecular weight Vs. filler loading on acts AI for Educatinal problems Addressed PVA hydrogels error experiments with predictive modeling,for industries mainly PVA based macroporous hydrogel for Oil \Water mixture separation percentage of Oil absorbance and percentage of hydrogel swelling in water biocompatibility,highly water uptaking and drug delivery in medical fields and environmentally sustainable PVA hydrogels.

Keywords:- National Development, PVA, Academic Field.

कृत्रिम बुद्धिमत्ता आणि नीतिमत्ता

काशीनाथ विठ्ठलराव तरासे

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बीजशब्द : कृत्रिम बुद्धिमत्ता, मानवी मूल्ये, नीतिमत्तेचे अधिष्ठान, तंत्रज्ञान, कायदे
सारांश :

कृत्रिम बुद्धिमत्ता (AI) हे आधुनिक युगातील सर्वात शक्तिशाली तंत्रज्ञान मानले जाते. मानवी बुद्धिमत्तेची नक्कल करण्याची क्षमता असलेल्या या तंत्रज्ञानाने उद्योग, आरोग्य आणि दळणवळण क्षेत्रात क्रांती घडवून आणली आहे; परंतु जसजसा AI चा वापर वाढत आहे, तसतसे त्याच्याशी संबंधित नैतिक मूल्ये (Ethics) आणि सामाजिक परिणामांचा प्रश्न ऐरणीवर आला आहे.

मुख्य नैतिक आव्हाने :

1. डेटा गोपनीयता आणि सुरक्षा : AI प्रणाली मोठ्या प्रमाणावर वैयक्तिक डेटावर अवलंबून असतात. या माहितीचा गैरवापर झाल्यास नागरिकांच्या गोपनीयतेचा भंग होऊ शकतो. माहिती चोरीला जाणे किंवा तिचा अनधिकृत वापर होणे हे एक मोठे नैतिक संकट आहे.
2. अल्गोरिदम मधील पक्षपातीपणा : AI कडून दिली जाणारी उत्तरे ही त्याला दिलेल्या माहितीवर (Data) आधारित असतात. जर ऐतिहासिक डेटामध्ये जाती, वर्ण किंवा लिंगभेद असेल, तर AI प्रणाली देखील तोच पक्षपातीपणा दाखवू शकते. यामुळे सामाजिक विषमता वाढण्याची शक्यता असते.
3. उत्तरदायित्वाचा अभाव : जर एखाद्या AI रोबोट किंवा स्वयंचलित कारने अपघात झाला, तर त्याची कायदेशीर जबाबदारी कोणाची ? निर्माता कंपनीची की त्या सॉफ्टवेअरची ? या प्रश्नाचे उत्तर अद्याप स्पष्ट नाही, ज्यामुळे नैतिक पेच निर्माण होतो.
4. रोजगार आणि मानवी मूल्ये : AI मुळे अनेक क्षेत्रात स्वयंचलन (Automation) येत आहे, ज्यामुळे नोकऱ्या कमी होण्याची भीती आहे. केवळ नफ्याचा विचार न करता, मानवी अस्तित्वाचा आणि रोजगाराचा विचार करणे हे नैतिक कर्तव्य ठरते.

भविष्यातील दिशा :

AI तंत्रज्ञान सुरक्षित करण्यासाठी 'पारदर्शकता' (Transparency) अत्यंत आवश्यक आहे. तंत्रज्ञान विकसित करणाऱ्या कंपन्यांनी ते कसे काम करते, हे स्पष्ट करणे गरजेचे आहे. तसेच, जागतिक स्तरावर AI च्या वापरासाठी कठोर कायदे आणि नियमावली तयार करणे आवश्यक आहे.

निष्कर्ष :

थोडक्यात सांगायचे तर, AI हे मानवी प्रगतीसाठी एक वरदान ठरू शकते; परंतु त्यासाठी नीतिमत्तेचे अधिष्ठान असणे अनिवार्य आहे. जर आपण केवळ तांत्रिक प्रगतीवर लक्ष दिले आणि मानवी मूल्यांकडे दुर्लक्ष केले, तर हेच तंत्रज्ञान भविष्यात धोकादायक ठरू शकते. त्यामुळे 'मानवासाठी तंत्रज्ञान, तंत्रज्ञानासाठी मानव नाही' हे सूत्र लक्षात ठेवूनच AI चा विकास झाला पाहिजे.

Effects of NaCl Stress on Seed Germination and Early Seedling Growth of Castor Bean (*Ricinus communis* L.)

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Abstract

The castor bean (*Ricinus communis* L.) is an oilseed that produces excellent oil, it qualifies as important crop for energetic security. Salinity is one of the most environmental factors that affects different development stages of plants, especially germination stage. The objective of the research was to characterize the deleterious effects of salinity on seed germination and seedling growth of castor bean. The present study shows the effects of NaCl stress on seed germination and seedling growth of four castor bean cultivars (DSP-222, DSP- 555, GCH-4 and GCH-7) at different levels. For this purpose, seeds of castor were grown in sand culture and treated with aqueous solutions of different salinities which were prepared by dissolving the salt of NaCl. (25, 50 and 75mM) and distilled water was used as a control. Traits such as germination percentage, length of shoot and root, fresh and dry weight of seedling and seedling vigour index (SVI) were evaluated. The analysis of variance (ANOVA) showed that NaCl stress had significant effects on germination percentage, shoot length, root length, fresh and dry weight of seedling at different salinity levels. It is evident from the experiment that cv. DSP 555 showed higher germination % and seedling growth at all salinity levels as compared to control.

Keywords:- oilseed, cultivars, variance, castor bean, germination etc.

Reshaping Creative Writing in the AI Era

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Abstract:

The integration of Generative AI into the literary landscape represents a fundamental shift from traditional authorship to a collaborative, "centaur" model of creativity. Rather than merely automating text production, AI is reshaping the creative process by acting as an expansive brainstorming partner, capable of overcoming "writer's block" through instant prompt-based ideation and world-building. This evolution is characterized by several key transformations like lowering the barrier to entry for aspiring storytellers by providing sophisticated grammatical and structural scaffolding, shifting the writer's role from a primary generator to an editor-in-chief, where the focus lies in curating, refining, and injecting "human soul" into machine-generated drafts and enabling non-linear storytelling and personalized narratives that adapt to reader input in real-time. However, this transition introduces critical tensions regarding intellectual property, the "homogenization" of prose style, and the ethical implications of training models on human-authored corpora. Ultimately, the reshaping of creative writing through AI does not signal the death of the author, but rather the birth of a new hybrid medium where human intuition directs the vast, probabilistic potential of the machine.

Use of AI Tools for Research Paper Writing in the Field of Chemical Science

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Abstract:

The rapid advancement of Artificial Intelligence (AI) has significantly transformed research practices across scientific disciplines, including chemical sciences. AI-powered tools now play a crucial role in enhancing the efficiency, accuracy, and quality of research paper writing by supporting literature review, data interpretation, visualization, and scientific communication. This paper explores the effective use of AI tools in chemical science research, focusing on their applications in experimental design assistance, spectral and structural data analysis, molecular modeling, reaction prediction, and manuscript preparation. AI-driven platforms enable researchers to manage large datasets, identify hidden patterns, generate insightful correlations, and improve reproducibility while reducing time-consuming manual efforts. Additionally, AI-based language and editing tools assist in drafting well-structured manuscripts, ensuring clarity, technical accuracy, and adherence to journal guidelines without compromising scientific integrity. The ethical considerations, limitations, and responsible use of AI in academic writing are also discussed to promote transparency and originality. By integrating AI tools into chemical research workflows, scientists can accelerate innovation, improve research quality, and enhance global collaboration. This study highlights AI as a supportive and transformative technology that complements human expertise, paving the way for more efficient and impactful research in chemical sciences.

Keywords:- Artificial Intelligence (AI), Chemical Sciences, Research Paper Writing, Scientific Communication, Data Analysis, Molecular Modeling, Literature Review, Ethical Use of AI

Use of AI Tools in Education for Rural Youth: Will They Benefit?

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Abstract

Artificial Intelligence (AI) tools are rapidly transforming the field of education by making learning more accessible, flexible, and personalized. In the Indian context, rural and tribal youth often face serious educational challenges such as lack of trained teachers, limited learning resources, language barriers, geographical isolation, and poor digital infrastructure. This paper examines the use of AI tools in education for rural and tribal students and explores whether these tools can genuinely benefit them.

The study discusses the role of AI-based learning platforms, virtual tutors, adaptive learning systems, language translation tools, and skill-development applications in supporting students from rural and tribal backgrounds. These tools have the potential to provide quality educational content, personalized learning experiences, career guidance, and digital skills, thereby helping learners overcome traditional barriers to education.



Artificial Intelligence and the Digital Interpretation of Draupadi's Character in the Mahabharata

Manisha More

Abstract

The integration of Artificial Intelligence into the humanities has opened new pathways for interpreting classical texts and re-examining mythological characters through digital methods. This study explores the role of Artificial Intelligence in the digital interpretation of Draupadi's character in the *Mahabharata*, one of the most significant epics in Indian mythology. Traditionally understood through literary, philosophical, and cultural perspectives, Draupadi has been portrayed as a symbol of strength, dignity, suffering, and resistance. By applying AI-based tools such as text mining, sentiment analysis, and computational pattern recognition, this research seeks to uncover deeper narrative structures and evolving representations of her character across different episodes and interpretations.

The study demonstrates how digital technologies can systematically analyze large volumes of textual data to identify recurring themes, emotional tones, and character relationships that may not be immediately visible through manual reading. AI-assisted analysis highlights Draupadi's multifaceted identity as a queen, wife, political figure, and moral force, revealing the complexity of her role within the epic's social and ethical framework. At the same time, the research acknowledges the limitations of algorithmic interpretation, emphasizing that cultural context, symbolic meaning, and human sensitivity remain essential for understanding mythological narratives.

Rather than replacing traditional literary research, Artificial Intelligence functions as a supportive tool that strengthens critical inquiry and broadens interpretive possibilities. The combination of computational methods with human insight encourages a more interdisciplinary approach to mythology and literary studies. Ultimately, this paper argues that AI can enrich the study of ancient texts by offering fresh analytical perspectives while preserving the depth and emotional resonance of classical storytelling, thereby bridging the gap between technology and the humanities.

Keywords: Artificial Intelligence, Digital Humanities, Draupadi, Mahabharata, Mythological Interpretation, Text Mining, Computational Analysis

शिक्षण प्रक्रियेत कृत्रिम बुद्धिमत्तेची भूमिका :- एक अभ्यास

गणेश जानराव मस्के

कला, वाणिज्य व विज्ञान महाविद्यालय, आर्वी ता. आर्वी, जि. वर्धा

आर्टिफिशिअल इंटेलिजन्स ही संकल्पना काही व ापूर्वीची असली, तरी तिचा तंत्रज्ञानातील वापर अगदी अलीकडच्या काळातील आहे. तंत्रज्ञान कोणतेही असो ते स्वतः तटस्थच असते,पण कृत्रिम बुद्धिमत्तेचे तंत्रज्ञान मनु याच्या जडणघडणीत कमालीचे आणि अशक्यप्राय बदल घडवून आणत आहे, त्यामुळे सध्या तरी सर्वांगीण विकास साधणाऱ्या अनेक गोष्टींमध्ये आता या संकल्पनेचा वापर होऊ लागला आहे. गुगलची 'वेमो' नावाच्या स्वयंचलित टॅक्सी सर्व्हिसपासून ते कृषी क्षेत्रातील ड्रोनचा वापर ते घरातील कामे करणाऱ्या रोबटपर्यंत 'एआय' चा वापर सर्वसामान्य झाला आहे. त्याचा परिणाम ग्रामीण व शहरी जीवनशैली ते संस्कृती बदलण्यापर्यंत होत आहे. मात्र, तिचा कोणत्या क्षेत्रावर आणि कसा परिणाम घडून आला व भवि यात काय होऊ शकते याचा अचूक वेध या लेखातून घेणार आहोत.

'मशिन्स विचार करू शकतात का ?' असा प्रश्न १९५० साली अॅलन ट्यूरिंगने विचारून भवि यातल्या वक्यतांचे नवे दालन खुले करून दिले. आज आपण भा ांतर करणारे, आजारांचे निदान करणारे, आपल्याला वैद्यकीय सल्ला देणारे, आपल्या आवडीच्या विषयाचे नवीन पुस्तक बाजारात आल्याचे सुचवणारे तंत्रज्ञान पाहतो, ते खरे तर एखादा माणूस करत नसून कॉम्प्युटर करत असतो. त्यामुळे भविष्यात माणसासारखे विचार करणारे आणि चक्क आपल्याशी गप्पा मारणारे, आपल्याला नवीन कविता आणि कथा रचून दाखवणारे रोबोट्स निर्माण झाल, तर आश्चर्य वाटायला नको. असा विस्मयकारक भवि यकाळ दाखवणाऱ्या या तंत्राची मुळे भूतकाळात खोल रुतली आहेत, हे मात्र तितकेचे खरे आहे.

Electric Vehicles as a Sustainable Mobility Solution in India: A Comparative Study of Conventional and Electric Vehicles with the Role of Artificial Intelligence

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Abstract

The Indian automobile industry is experiencing a transformative shift towards sustainable mobility, driven by environmental concerns, energy security challenges, policy interventions, and rapid technological advancements such as Artificial Intelligence (AI). This study examines electric vehicles (EVs) as a sustainable mobility solution in India through a comparative analysis of conventional internal combustion engine (ICE) vehicles and electric vehicles with special emphasis on the emerging role of AI in the automobile sector. The study is based on secondary data collected from government reports, policy documents, industry publications, and international agencies. It analyzes technological characteristics, economic viability, environmental impact, and policy support mechanisms influencing vehicle adoption in India. In addition, the paper highlights how AI-enabled applications such as predictive maintenance, energy management, emission monitoring, demand forecasting and intelligent transportation planning are enhancing the efficiency, performance and sustainability of electric vehicles. The findings indicate that while conventional vehicles continue to dominate the Indian market due to established infrastructure and lower initial costs, they face long-term challenges related to fuel dependency, higher emissions and regulatory pressures. In contrast electric vehicles, supported by AI-driven innovations and government initiatives such as FAME, Production Linked Incentive (PLI) schemes and charging infrastructure development, offer significant advantages in terms of reduced operating costs, lower environmental impact, and alignment with India's climate and sustainability goals. The study concludes that the integration of Artificial Intelligence with electric mobility is a critical enabler in accelerating the transition towards sustainable transportation in India.

AI-Driven Changes in Employment Patterns and Human Resource Practices

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Abstract

Artificial Intelligence is rapidly reshaping employment patterns and human resource practices across organizations worldwide. From recruitment and talent acquisition to performance management and employee engagement, AI technologies are transforming how HR professionals attract, evaluate, and retain talent. This paper explores the impact of AI-driven changes on employment structures and HR processes, emphasizing both the opportunities and challenges presented by automation, predictive analytics, and intelligent decision-making tools.

Routine and repetitive tasks, such as resume screening, payroll management, and attendance tracking, are increasingly automated, allowing HR professionals to focus on strategic and value-driven activities. AI also enhances decision-making by providing data-driven insights into workforce performance, employee satisfaction, and skill gaps. Additionally, predictive analytics helps organizations anticipate talent needs, plan workforce development, and align human capital strategies with long-term business objectives. These transformations are gradually redefining the roles and responsibilities of HR practitioners, requiring greater emphasis on digital literacy, strategic thinking, and adaptability. However, the adoption of AI in HR also raises ethical and social considerations. Concerns regarding bias in algorithms, employee privacy, and the potential displacement of certain job roles necessitate thoughtful implementation and governance. Organizations must ensure that AI technologies are deployed responsibly, with a focus on inclusivity, fairness, and workforce upskilling.

This study concludes that AI should not be viewed as a replacement for human judgment but as an enabler that augments HR capabilities. By integrating human insight with AI-driven tools, organizations can create more efficient, equitable, and forward-looking workforce management strategies. Ultimately, the convergence of AI and HR practices offers the potential to transform not only organizational efficiency but also employee experiences and career development in the evolving world of work.

Keywords:- Artificial Intelligence, Human Resource Management, Workforce Transformation, Employment Patterns, Predictive Analytics, HR Technology

Impact of Materialism on Socio-Familial Relationships in Sudha Murty's House of Cards

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Abstract

The novel reflects ambition without ethics in social reality, human values and the fragile nature of relationships. Sudha Murthy is a contemporary writer who raises social reformation and gender equality in her works. This research paper aims to explore the impact of materialism on Dr Sanjay's family relationship in Sudha Murthy's *House of Cards*. The novel explores two major themes mainly. The first one act as the role model for society; a couple starts married life as an ideal Indian family, but later on destructive effects of money on close domestic relations. The second theme is the increasing rate of malpractices in the medical field in India. Both characters navigate a society that values wealth and status over domestic relationships. The theme is an attempt to bring out the serious concerns of loss of ethical values in the postmodern world due to the growing impact of materialism and hedonism. The relationship between Mridula and Sanjay in the initial phase was based on mutual love and trust. They knew each other pretty well. They had woven their destiny in each other's interdependence. This helped them build a palatial house for them and state of the art hospital for the needy patients. But then the things began to go wrong. Affluence spoiled their innocence. Sanjay began to play a game of hide and seek with Mridula for no specific reason. Wealth brought arrogance in him, which tore him from Mridula. Sanjay amassed tremendous wealth through unlawful medical practices. He created fake bank accounts to manipulate wealth. He filled his cupboards with currency notes. He has no time for his wife and son Sishir. At last, she left Sanjay on 'Silver Jubilee anniversary' and settled alone at her native, Aladahalli. Sanjay's hundred-beds nursing home and palatable house collapse like house of cards.

Role of AI Tools in Studying the Effect of Cold Acclimation on Glycogen Metabolism in *Semperula maculata*

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Abstract

AI tools act as powerful research enablers in studying cold acclimation and glycogen metabolism in *Semperula maculata*. By supporting literature synthesis, experimental design, data analysis, and interpretation, AI helps overcome limitations posed by scarce species-specific data and enables deeper insights into metabolic adaptation mechanisms under cold stress.

AI tools can rapidly analyse large volumes of scientific literature related to Cold acclimation in ectotherms, Glycogen metabolism under thermal stress and Metabolic adaptation in gastropods and mollusks.

The study of cold acclimation and its impact on glycogen metabolism in *Semperula maculata*, a terrestrial ectothermic mollusc, involves complex physiological, biochemical, and environmental interactions. This paper reviews the role of AI tools can significantly enhance this research by supporting data integration, analysis, and interpretation, particularly where species-specific information is limited.

Keywords:- Physiological stress, metabolic stress, sustainable environmental, Thermal stress, Cold acclimation

AI, Power and Inequality: Emerging Sociological Concerns

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Abstract

Artificial Intelligence (AI) has quickly become part of everyday life, influencing how economies function, how governments make decisions, and how people interact with one another. Although AI is often described as a neutral and objective technology, in reality it reflects the social values, power structures, and inequalities already present in society. This paper explores AI from a sociological point of view, focusing on how it reshapes power relations and deepens existing inequalities related to class, caste, gender, and unequal access to resources. Drawing on the ideas of **Karl Marx**, **Max Weber**, and **Michel Foucault**, the study views AI as a new form of authority operating within capitalist and bureaucratic systems. Based on conceptual analysis and secondary sources, the paper discusses issues such as algorithmic bias, increased surveillance, job displacement, and the digital divide, with special reference to the Indian context. It argues that without ethical regulation and sociologically informed governance, AI may strengthen social inequalities rather than contribute to equality and social justice.

Keywords:- Artificial Intelligence, Power, Inequality, Surveillance, Social Stratification

Integrating Artificial Intelligence into Green Chemistry for Sustainable Innovation

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Abstract

Green chemistry focuses on the development of chemical products and processes that reduce or eliminate the generation of hazardous substances, minimize waste, and improve energy efficiency, thereby promoting environmental sustainability and human safety. In recent years, artificial intelligence (AI) has emerged as a transformative technology with the potential to significantly enhance the implementation of green chemistry principles. This paper examines the growing role of AI in advancing sustainable chemical research and industrial practices through data-driven analysis, predictive modeling, and process optimization.

AI techniques, particularly machine learning and deep learning algorithms, enable the rapid analysis of large chemical datasets, allowing researchers to predict reaction outcomes, optimize reaction conditions, and identify environmentally benign catalysts and solvents. By reducing reliance on traditional trial-and-error experimentation, AI helps minimize chemical waste, lower energy consumption, and shorten development timelines. Additionally, AI-based predictive models are increasingly used to assess toxicity, biodegradability, and environmental impact of chemical compounds at early stages of design, supporting the creation of safer and more sustainable chemicals.

AI also plays a critical role in optimizing chemical manufacturing processes through real-time monitoring and control, leading to improved efficiency and reduced emissions. In renewable energy and resource management, AI supports innovations in biomass conversion, carbon capture and utilization, green hydrogen production, and the development of sustainable materials. Furthermore, AI-driven approaches in pharmaceutical and agrochemical research contribute to greener synthesis pathways and reduced environmental footprints.

Overall, the integration of artificial intelligence with green chemistry provides a powerful framework for accelerating sustainable innovation in chemical sciences. By enabling smarter decision-making, enhancing efficiency, and reducing environmental risks, AI represents a promising tool for achieving environmentally responsible, economically viable, and sustainable chemical technologies. The continued development and adoption of AI-based solutions are expected to play a vital role in addressing global environmental challenges and advancing the future of green chemistry.

The Effects of Food Manufacturing And Sustainable Agriculture On The Environment

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Abstract

In the globe, the agriculture industry is the most important. Sustainable farming is a societal need as well as the main source of fairness for environmentally friendly practices and equity in food production and agricultural systems. In addition to satisfying the needs of individuals, communities, the country, and subsequent generations, sustainable farming might maintain the ecosystem's equilibrium. The growing population's need for nutritious food, an increasing prevalence of poverty and hunger, declines in biodiversity, and the negative consequences of climate change are all posing significant challenges to global agricultural and food production systems. Conventional agricultural practices can meet the increasing demand for food due to the widespread use of chemical fertilizers, but there are no guarantees about health or safety.

It has the worst impact on the environment in addition to being hazardous to consumers. The adverse impacts on the environment can be lessened by appropriately handling chemical fertilizers and raising knowledge about animals and the need to preserve nature. To improve the country's economic performance, sustainable farming practices must be used; however, this can only be achieved when the whole agriculture sector employs the right amount of fertilizer, processes waste effectively, and has a firm understanding of branding and manufacturing procedures. As a result, this study concentrates on subjects that are beneficial for sustainable farming methods while taking into account the needs of the agricultural industry and community for nutrient sources.

Keywords:- Methods of Agriculture, Approaches to Produce More Food, Sustainable Agricultural Principles, Impact on The Environment

Enhancing Civil Engineering Education with Artificial Intelligence: A Framework for Implementation

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Abstract

The integration of Artificial Intelligence in civil engineering education has the potential to revolutionize the way students learn and prepare for the workforce. Civil engineering education is evolving to meet the demands of a rapidly changing industry. By embracing emerging technologies, interdisciplinary approaches, and innovative teaching methods, educators can prepare students for success in the Industry. A.I. is being increasingly adopted in various aspects of civil engineering, from design and construction to management and maintenance. Implementation of A.I. based virtual tutors will offer one-on-one support, guidance, and feedback to students. A.I. driven simulations and models will help students to explore complex civil engineering scenarios, promoting experiential learning and problem-solving skills. A.I. powered tools can help students analyze and design complex structures, enhancing their understanding of structural behavior and also help traffic flow, enabling students to optimize transportation systems. A.I. based models can simulate water flow and quality, helping students understand water management systems and construction processes, enabling students to optimize project planning and execution. A.I. enhanced learning experiences lead to better understanding and retention of complex concepts. A.I. prepares students for the future workforce by fostering skills such as data analysis, critical thinking, and problem-solving. For this educators need training and resources to effectively integrate A.I. into their teaching practices. A.I. has the potential to transform civil engineering education by providing personalized, adaptive, and immersive learning experiences. By implementing the proposed framework, educators can enhance learning outcomes, improve student engagement, and develop essential skills for the future workforce. To implement A. I. in education field of Civil Engineering it needs updating curricula to reflect emerging technologies and industry needs and providing faculty training and resources to effectively integrate new technologies and teaching methods. Also needs of fostering partnerships between academia and industry to ensure relevance and applicability.

Keywords:- Artificial Intelligence, Civil Engineering Education, Framework, Implementation, Personalized Learning, Intelligent Tutoring Systems.

Artificial Intelligence and the Future of Work Transformations in Employment and the Job Market

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Abstract

Artificial Intelligence is rapidly transforming the nature of work and redefining employment structures across the globe. From automated manufacturing systems to intelligent virtual assistants and data-driven decision-making tools, AI technologies are becoming deeply integrated into everyday organizational processes. This paper examines how Artificial Intelligence is reshaping the future of work by altering job roles, skill requirements, and workforce dynamics, while creating both opportunities and challenges within the labor market. Rather than viewing AI solely as a threat, the study presents a balanced perspective that recognizes its potential to displace certain jobs while generating new forms of employment.

Routine and repetitive tasks are particularly vulnerable to automation, especially in manufacturing, retail, and administrative services. At the same time, AI is expanding opportunities in emerging fields such as data science, machine learning, cybersecurity, and human–AI collaboration. Consequently, the labor market is shifting from manual and predictable work toward technical, analytical, and creative occupations that demand higher cognitive skills. This transition highlights the increasing importance of digital literacy, adaptability, and lifelong learning, as workers must continuously upgrade their competencies to remain competitive.

The study also addresses the broader social and ethical implications of AI adoption, including job insecurity, income inequality, and the digital divide. Without inclusive policies and structured reskilling initiatives, the benefits of technological progress may be unevenly distributed across society. Therefore, collaboration among governments, educational institutions, and organizations is essential to ensure equitable access to training and employment opportunities. Artificial Intelligence should be understood not as a replacement for human labor but as an enabling force that enhances productivity, innovation, and decision-making.

Keywords: Artificial Intelligence, Future of Work, Employment Transformation, Automation, Workforce Skills, Human–AI Collaboration

Preparation of Soap Using Coconut Oil by Saponification Reaction

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Abstract

Soaps are the sodium or potassium salts of stearic acids or any other fatty acids. They are prepared by the saponification process, which is reacting the oil which contains triglyceride with caustic soda (NaOH) to give the soap. Soap was prepared using coconut oil and NaOH extracts were into basic saponification reaction. Thus soap prepared using blend these oil has better properties than the soap prepared by individual coconut oil. The preparation of soap using coconut oil through the saponification reaction is a traditional and widely used method. Coconut oil, a rich source of medium-chain fatty acids, is an ideal feedstock for soap production due to its high lauric acid content. In this study, coconut oil was reacted with sodium hydroxide (NaOH) to produce soap and glycerol through the saponification reaction. The reaction was carried out at a controlled temperature and stirring rate to optimize soap yield and quality. The soap produced was characterized for its physical and chemical properties, including pH, moisture content, and foam retention. The results showed that the soap had a high foam retention capacity and a suitable pH range for skin use. The study demonstrates the feasibility of using coconut oil as a sustainable and renewable feedstock for soap production, highlighting its potential as an eco-friendly alternative to petroleum-based surfactants. Coconut oil is used to prepare soap through saponification reaction with sodium hydroxide, producing a high-quality soap with good foam retention and suitable pH for skin use. The process is a sustainable alternative to petroleum-based surfactants, utilizing a renewable feedstock.

Keywords:- Saponification, coconut oil, soap

Removal of Heavy Element from Waste Water using Chemically Modified Biopolymer

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Abstract

Removal of heavy metal ions from wastewater is of prime importance for a clean environment and human health. Different reported methods were devoted to heavy metal ions removal from various wastewater sources. These methods could be classified into adsorption membrane-, chemical-, electric-, and photocatalytic-based treatments. This paper comprehensively and critically reviews and discusses these methods in terms of used agents/adsorbents, removal efficiency, operating conditions, and the pros and cons of each method. Besides, the key findings of the previous studies reported in the literature are summarized. Generally, it is noticed that most of the recent studies have focused on adsorption techniques. The major obstacles of the adsorption methods are the ability to remove different ion types concurrently, high retention time, and cycling stability of adsorbents. Even though the chemical and membrane methods are practical, the large-volume sludge formation and post-treatment requirements are vital issues that need to be solved for chemical techniques. Fouling and scaling inhibition could lead to further improvement in membrane separation. However, pre-treatment and periodic cleaning of membranes incur additional costs. Electrical-based methods were also reported to be efficient; however, industrial-scale separation is needed in addition to tackling the issue of large-volume sludge formation. Electric- and photocatalytic-based methods are still less mature. More attention should be drawn to using real wastewaters rather than synthetic ones when investigating heavy metals removal. Future research studies should focus on eco-friendly, cost-effective, and sustainable materials and methods.

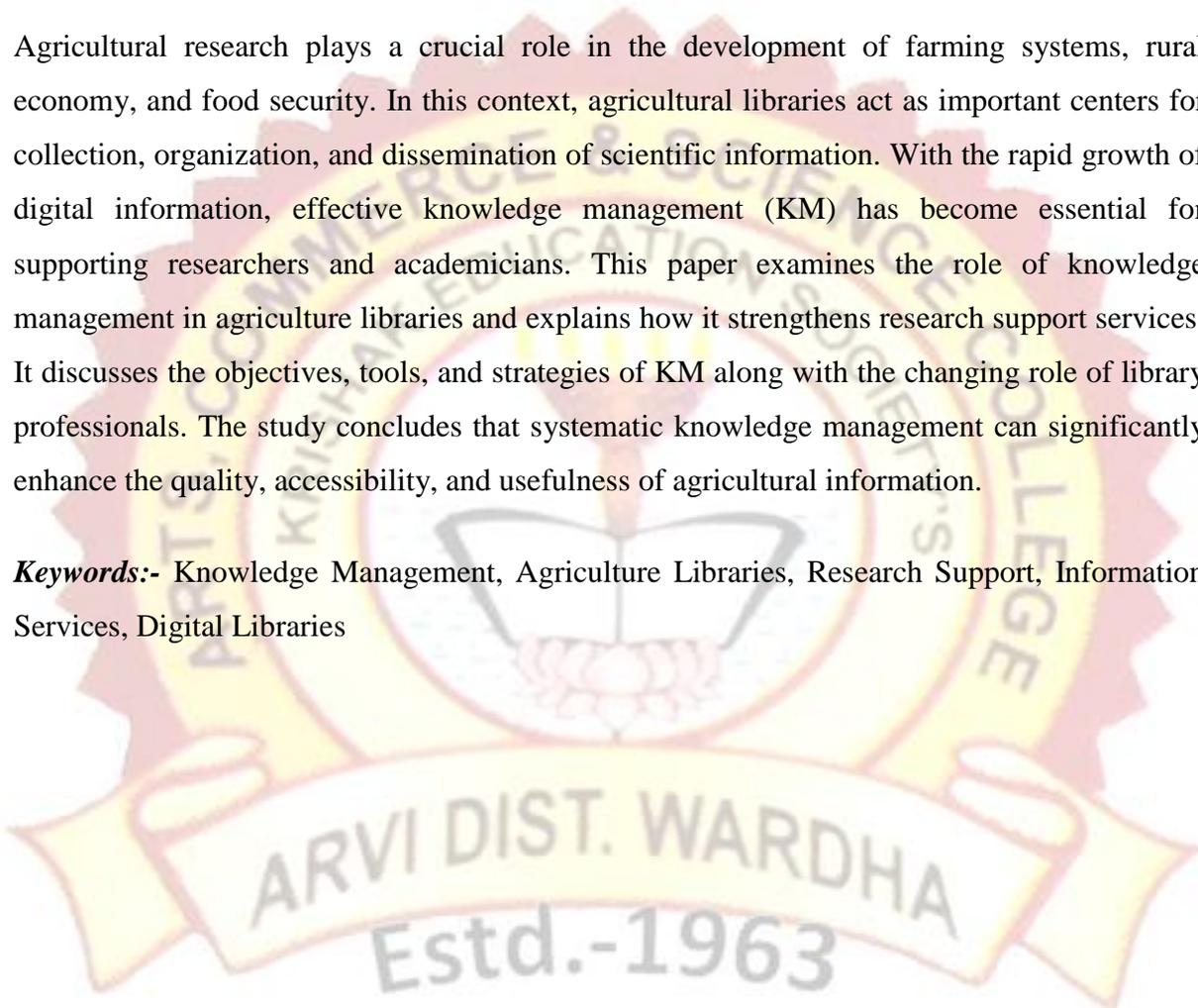
Enhancing Agricultural Research Support through Knowledge Management in Libraries

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Abstract

Agricultural research plays a crucial role in the development of farming systems, rural economy, and food security. In this context, agricultural libraries act as important centers for collection, organization, and dissemination of scientific information. With the rapid growth of digital information, effective knowledge management (KM) has become essential for supporting researchers and academicians. This paper examines the role of knowledge management in agriculture libraries and explains how it strengthens research support services. It discusses the objectives, tools, and strategies of KM along with the changing role of library professionals. The study concludes that systematic knowledge management can significantly enhance the quality, accessibility, and usefulness of agricultural information.

Keywords:- Knowledge Management, Agriculture Libraries, Research Support, Information Services, Digital Libraries



AI in Molecular Structure Prediction

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Abstract

AI-driven laboratory methods integrate machine learning, automation, and data analytics to enhance efficiency, accuracy, and reproducibility. AI-based systems can analyze large datasets generated from chemical experiments to identify patterns, predict reaction outcomes, and optimize experimental conditions. Automated instruments controlled by AI reduce variability in measurements and perform repetitive tasks with high precision. This leads to faster experimentation and more consistent results compared to conventional methods. Additionally, AI enables virtual screening and simulations, reducing the need for excessive chemical usage and costly laboratory trials. The integration of AI with traditional laboratory methods results in hybrid laboratories that combine human expertise with computational intelligence. Such collaboration improves research productivity, supports green chemistry by minimizing waste, and accelerates innovation in fields such as drug discovery, materials science, and industrial chemistry. As AI technology continues to evolve, its balanced integration with traditional laboratory methods will define the future of chemical research. The rapid advancement of Artificial Intelligence (AI) is significantly transforming laboratory practices in chemistry, challenging traditional experimental methods. In contrast, AI-driven laboratory methods integrate machine learning, automation, and data analytics to enhance efficiency, accuracy, and reproducibility. The integration of AI with traditional laboratory methods results in hybrid laboratories that combine human expertise with computational intelligence. Such collaboration improves research productivity, supports green chemistry by minimizing waste, and accelerates innovation in fields such as drug discovery, materials science, and industrial chemistry. As AI technology continues to evolve, its balanced integration with traditional laboratory methods will define the future of chemical research.

The Role of Artificial Intelligence in Enhancing Management Practices and Business Performance

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Abstract

Artificial Intelligence is rapidly transforming the landscape of modern management, offering tools and technologies that enhance decision-making, streamline operations, and improve overall business performance. From predictive analytics and process automation to intelligent decision-support systems, AI is enabling managers to make faster, data-driven, and more strategic choices. This paper explores the role of Artificial Intelligence in enhancing management practices across various domains, including operations, human resources, marketing, and strategic planning, highlighting its impact on organizational efficiency and competitiveness.

AI-powered tools allow organizations to process large volumes of data efficiently, identify patterns, and generate insights that inform critical managerial decisions. In operations management, AI optimizes resource allocation, supply chain management, and process efficiency. In human resource management, it improves recruitment, talent retention, and performance evaluation. Similarly, in marketing and customer relationship management, AI enhances personalization, forecasting, and decision-making. By integrating AI into these processes, organizations can achieve higher productivity, reduce operational errors, and align strategic initiatives with real-time data insights.

Despite its benefits, AI adoption also presents challenges, such as ethical considerations, employee resistance, and the need for digital literacy among managers. The study emphasizes that AI should not replace human judgment but complement it, enabling managers to focus on strategic thinking, innovation, and relationship building. Successful implementation requires a balance between technological capabilities and human insight, supported by training, change management, and ethical frameworks.

Ultimately, this research argues that Artificial Intelligence is not merely a technological tool but a transformative force in management practices. By harnessing AI effectively, organizations can enhance efficiency, foster innovation, and achieve sustainable business performance in an increasingly competitive and dynamic environment.

Keywords:- Artificial Intelligence, Management Practices, Business Performance, Decision-Making, Process Optimization, Strategic Management

AI in Science and Technology: Role of AI in Reducing Environmental Pollution

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Abstract

Environmental pollution has become one of the most serious global challenges, posing significant threats to ecosystems, public health, and sustainable development. Conventional pollution monitoring and control methods often suffer from limitations such as delayed responses, limited coverage, and high operational costs. This research paper examines the role of Artificial Intelligence (AI) in science and technology as an effective solution for reducing environmental pollution. The primary research problem addressed is how AI-based systems can improve the detection, prediction, and mitigation of pollution across air, water, and soil environments.

The study adopts a qualitative research methodology based on an extensive review of secondary sources, including research articles, reports, and real-world case studies. Various AI techniques such as machine learning algorithms, neural networks, deep learning, and data analytics are analyzed to understand their applications in environmental management. Key areas explored include AI-powered air quality monitoring, predictive modeling of industrial emissions, intelligent waste management systems, and water pollution detection using sensor data and image recognition technologies.

The findings indicate that AI significantly enhances the accuracy and efficiency of pollution monitoring by enabling real-time data analysis and early warning systems. Predictive models help governments and industries anticipate pollution trends and implement preventive measures. Furthermore, AI-driven automation reduces human error, lowers operational costs, and supports sustainable decision-making. The study concludes that AI has a transformative role in reducing environmental pollution and promoting sustainable development, provided challenges related to data quality, ethical concerns, and policy integration are effectively addressed.

Keywords:- Artificial Intelligence, Environmental Pollution, Sustainability, Machine Learning, Smart Environmental Monitoring

Enhanced Removal of Contaminants from Waste Water using Modified Cellulose-Based Biopolymer

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Abstract

Water contamination by toxic heavy metals, dyes, and organic pollutants poses a serious threat to environmental sustainability and human health. The present study focuses on the detoxification of contaminated water samples using a modified cellulose-based biopolymer as an eco-friendly, cost-effective, and efficient adsorbent. Cellulose, being abundant, biodegradable, and renewable, was chemically modified to enhance its surface functionality, adsorption capacity, and selectivity toward various water pollutants. Functional groups such as carboxyl, hydroxyl, and amine moieties introduced onto the cellulose backbone played a crucial role in binding toxic contaminants through electrostatic interactions, hydrogen bonding, and complexation mechanisms. Increasing levels of water pollution due to rapid industrialization, agricultural runoff, and urbanization have resulted in the presence of toxic heavy metals, dyes, and organic contaminants in water bodies, posing severe risks to ecosystems and human health. In this study, detoxification of contaminated water samples was investigated using a modified cellulose-based biopolymer as a sustainable and eco-friendly adsorbent. Cellulose, a naturally abundant, biodegradable, and renewable biopolymer, was chemically modified to improve its adsorption efficiency, mechanical stability, and affinity toward toxic pollutants. The growing demand for clean water and the increasing release of toxic contaminants into aquatic systems necessitate the development of innovative and sustainable purification materials. This study investigates the detoxification of polluted water samples using a structurally engineered modified cellulose biopolymer with enhanced multifunctional properties. Unlike conventional adsorbents, the modified cellulose was tailored to act as a dual-function material, enabling simultaneous removal of heavy metal ions and organic pollutants from aqueous media.

Overall, the study highlights the potential of modified cellulose biopolymers as efficient, green materials for water detoxification. Their high adsorption capacity, renewability, and environmental compatibility make them promising candidates for sustainable wastewater treatment and drinking water purification systems.

Synergizing Artificial Intelligence and Green Nanotechnology for Drug Discovery

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Abstract

Drug discovery faces persistent challenges related to high attrition rates, toxicity concerns, and the limited translational success of conventional synthetic compounds. In this context, green nanotechnology, combined with artificial intelligence (AI), offers a promising paradigm for the identification and optimization of novel drug candidates. The present study explores the drug discovery potential of green-synthesized selenium nanoparticles (SeNPs) derived from medicinal plant extracts, emphasizing their integration with AI-assisted analytical approaches.

Selenium nanoparticles were synthesized using aqueous extracts of selected medicinal plants through an eco-friendly, cost-effective, and sustainable green synthesis route. The synthesized SeNPs were characterized using standard physicochemical techniques to determine particle size, morphology, surface chemistry, and stability. Biological evaluations were performed to assess their antioxidant, antimicrobial, and anticancer activities, highlighting their potential as nano-drug candidates.

To strengthen the drug discovery pipeline, AI-based data analysis was employed to correlate nanoparticle characteristics with observed bioactivities. Machine learning-assisted pattern recognition enabled the identification of key physicochemical features influencing therapeutic efficacy, facilitating the prioritization of promising SeNP formulations. This AI-guided approach supports rapid screening, reduces experimental redundancy, and enhances predictive accuracy in early-stage drug discovery.

The synergistic integration of artificial intelligence with green nanotechnology demonstrates a scalable and efficient strategy for discovering novel nano-therapeutics from natural resources. The findings underline the potential of AI-enabled green-synthesized selenium nanoparticles as sustainable drug discovery platforms, paving the way for accelerated identification of safe and effective drug candidates. This study contributes to the growing intersection of AI-driven drug discovery and environmentally responsible nanomaterial development.

Artificial Intelligence in Creative Writing and Poetry Analysis A Comparative Study of Rabindranath Tagore and Sri Aurobindo

Yogesh Ingle

Abstract

The emergence of Artificial Intelligence has opened new dimensions in the field of creative writing and literary analysis. AI tools capable of generating text, analyzing stylistic patterns, and assisting in literary criticism are redefining traditional approaches to poetry and creative expression. This study explores the impact of Artificial Intelligence on creative writing and poetry analysis, focusing specifically on a comparative examination of two iconic Indian poets, Rabindranath Tagore and Sri Aurobindo. Both poets exemplify profound literary and philosophical thought, yet their styles, themes, and approaches to poetic expression differ significantly, providing a rich framework for exploring AI-assisted analysis.

Using AI-based techniques such as computational text analysis, pattern recognition, and sentiment mapping, this research investigates the stylistic distinctions, recurring themes, and emotional undertones in the works of Tagore and Aurobindo. AI's ability to process large volumes of text allows for the identification of subtle literary patterns, facilitating deeper understanding of poetic structures and philosophical motifs that may be overlooked in conventional reading. The study also examines how AI can support critical commentary and comparative literary studies, enhancing both interpretation and appreciation of complex poetic texts.

AI offers unprecedented analytical power, the study emphasizes the continued importance of human insight. Understanding the cultural, historical, and emotional contexts of poetry requires interpretive sensitivity, which AI cannot fully replicate. This paper demonstrates that Artificial Intelligence can serve as a bridge between traditional literary study and contemporary technological methods. By combining algorithmic precision with humanistic understanding, AI contributes to a richer, more subtle exploration of creative writing and poetry, exemplified through the works of Rabindranath Tagore and Sri Aurobindo.

Keywords: Artificial Intelligence, Creative Writing, Poetry Analysis, Rabindranath Tagore, Sri Aurobindo, Computational Literary Studies

कृत्रिम बुद्धिमत्ता व वर्धा जिल्ह्यातील ग्रामपंचायत निर्णय प्रक्रियेत महिला सदस्यांचा सहभाग : एक अध्ययन

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सारांश

१) समस्याचे स्वरूप व निराकरण

कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) व डिजिटल तंत्रज्ञानाच्या वाढत्या वापरामुळे प्रशासन व निर्णय प्रक्रियेत महत्त्वपूर्ण बदल घडून येत आहेत. ग्रामपंचायत स्तरावर शासनाच्या विविध योजना, माहिती व्यवस्थापन, सेवा वितरण व निर्णय प्रक्रिया अधिक कार्यक्षम करण्यासाठी AI आधारित प्रणालींचा वापर हळूहळू सुरू झाला आहे. तथापि, या प्रक्रियेत महिला सदस्यांचा सक्रिय व प्रभावी सहभाग अनेकदा मर्यादित राहतो. माहितीचा अभाव, तांत्रिक ज्ञानाची कमतरता, सामाजिक अडथळे आणि निर्णय प्रक्रियेत पुरुषप्रधान वर्चस्व ही मुख्य समस्या आहेत. वर्धा जिल्ह्यातील ग्रामपंचायतींमध्ये 2015-2020 या कालावधीत AI व डिजिटल साधनांचा महिला प्रतिनिधींच्या सहभागावर नेमका काय परिणाम झाला, हे स्पष्टपणे अभ्यासले गेले नव्हते. हीच संशोधन समस्या प्रस्तुत अध्ययनाद्वारे समजून घेण्याचा प्रयत्न करण्यात आला आहे.

२) वापरलेली संशोधन पद्धत

या अध्ययनासाठी वर्णनात्मक व विश्लेषणात्मक संशोधन पद्धतीचा अवलंब करण्यात आला. प्राथमिक माहिती वर्धा जिल्ह्यातील निवडक ग्रामपंचायतींमधील महिला सरपंच व सदस्यांच्या प्रश्नावली, वैयक्तिक मुलाखती आणि प्रत्यक्ष निरीक्षणाद्वारे संकलित करण्यात आली. दुय्यम माहिती शासकीय अहवाल, पंचायत राज विभागाची कागदपत्रे, ई-गव्हर्नन्स अहवाल, संशोधन लेख व पुस्तके यांद्वारे गोळा करण्यात आली. संकलित माहितीचे विश्लेषण संख्यात्मक (तक्ते, टक्केवारी) तसेच गुणात्मक पद्धतीने करण्यात आले.

३) प्रमुख निष्कर्ष व योगदान

अभ्यासातून असे दिसून आले की, AI आधारित माहिती प्रणाली, ऑनलाइन डेटा विश्लेषण, मोबाईल अॅप्स व डिजिटल निर्णय सहाय्य साधनांमुळे महिला सदस्यांचा ग्रामपंचायत निर्णय प्रक्रियेत सहभाग वाढलेला आहे. माहितीपर्यंत सुलभ प्रवेश, योजनांच्या अंमलबजावणीतील पारदर्शकता आणि आत्मविश्वासात वाढ हे प्रमुख सकारात्मक परिणाम आढळले. तथापि, AI व डिजिटल साक्षरतेचा अभाव, तांत्रिक प्रशिक्षणाची कमतरता आणि सामाजिक मर्यादा ही आव्हाने अद्याप कायम आहेत. हे अध्ययन स्थानिक स्वराज्य संस्थांमध्ये महिला सक्षमीकरणासाठी AI आधारित प्रशिक्षण, धोरणात्मक सुधारणा व समावेशक निर्णय प्रक्रियेचे महत्त्व अधोरेखित करते.

AI और भारतीय भाषाएँ : समस्याएँ एवं समाधान

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Abstract सारांश

कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) ने इक्कीसवीं सदी में मानव जीवन के लगभग प्रत्येक क्षेत्र— शिक्षा, प्रशासन, स्वास्थ्य, कृषि, मीडिया और उद्योग—को गहराई से प्रभावित किया है। AI की कार्यक्षमता का मूल आधार भाषा है, क्योंकि भाषा के माध्यम से ही मनुष्य और मशीन के बीच संवाद स्थापित होता है। वर्तमान वैश्विक परिदृश्य में AI का विकास मुख्यतः अंग्रेजी तथा कुछ सीमित यूरोपीय भाषाओं तक केंद्रित रहा है, जिसके परिणामस्वरूप बहुभाषी देशों, विशेषकर भारत जैसी भाषिक रूप से समृद्ध सभ्यता, को अनेक चुनौतियों का सामना करना पड़ रहा है। भारत में संविधान की आठवीं अनुसूची में 22 मान्यता प्राप्त भाषाएँ तथा सैकड़ों क्षेत्रीय बोलियाँ प्रचलित हैं, किंतु AI प्रणालियों में इन भाषाओं का प्रतिनिधित्व अभी भी सीमित और असंतुलित है।

यह शोधालेख कृत्रिम बुद्धिमत्ता और भारतीय भाषाओं के पारस्परिक संबंध का विश्लेषण करते हुए उन प्रमुख समस्याओं को रेखांकित करता है, जो भारतीय भाषाओं को AI-सक्षम बनाने में बाधक हैं। अध्ययन में प्रशिक्षण डेटा की कमी, भाषिक विविधता और बोलियों की जटिलता, लिपि एवं ध्वन्यात्मक संरचनाओं की कठिनाइयाँ, मशीन अनुवाद में अर्थ-सांस्कृतिक संदर्भ की हानि तथा तकनीकी और आर्थिक असमानता जैसी समस्याओं का विवेचन किया गया है। उदाहरणों के माध्यम से यह स्पष्ट किया गया है कि किस प्रकार भारतीय भाषाओं की संरचनात्मक और सांस्कृतिक विशेषताएँ AI के लिए अतिरिक्त चुनौती उत्पन्न करती हैं।

साथ ही, शोध में यह भी दर्शाया गया है कि वर्तमान समय में शिक्षा, ई-गवर्नेंस, मीडिया, स्वास्थ्य और कृषि जैसे क्षेत्रों में भारतीय भाषाओं में AI का सीमित किंतु महत्वपूर्ण प्रयोग प्रारंभ हो चुका है। इन प्रयोगों को अधिक प्रभावी और व्यापक बनाने के लिए लेख में संभावित समाधानों पर विस्तार से चर्चा की गई है, जिनमें भारतीय भाषाओं के लिए व्यापक डिजिटल कॉर्पस का निर्माण, बहुभाषी एवं क्रॉस-लिंगुअल AI मॉडल का विकास, भाषाविदों और तकनीकी विशेषज्ञों के बीच सहयोग, मातृभाषा आधारित तकनीकी शिक्षा को प्रोत्साहन तथा सरकारी और संस्थागत स्तर पर ठोस नीतिगत पहल शामिल हैं।

निष्कर्षतः, यह शोधालेख इस तथ्य को रेखांकित करता है कि भारतीय भाषाओं में AI का विकास केवल तकनीकी आवश्यकता नहीं, बल्कि सामाजिक समावेशन, सांस्कृतिक संरक्षण और लोकतांत्रिक सशक्तिकरण की दृष्टि से भी अत्यंत आवश्यक है। यदि कृत्रिम बुद्धिमत्ता भारतीय भाषाओं को आत्मसात करती है, तो यह डिजिटल असमानता को कम करते हुए एक समावेशी और सशक्त डिजिटल भारत के निर्माण में महत्वपूर्ण भूमिका निभा सकती है।

प्राथमिक शिक्षणावरील सार्वजनिक खर्च व शालेय शिक्षण प्रगति विश्लेषण संदर्भ - महाराष्ट्र

ममता राममिलन साहू

अर्थशास्त्र विभाग प्रमुख

स्व. वसंतराव कोल्हटकर कला महाविद्यालय रोहणा, ता. आवी जि . वर्धा

भारता मध्ये शिक्षण हे प्रामुख्याने सरकार द्वारे दिले जाते. हे केन्द्र , राज्य व स्थानिक स्वराज्य संस्थांच्या द्वारे पुरविले जाते या सोबतच काही खाजगी शाळा मधून ही शिक्षण दिले जाते. वय वर्षे ६ ते १४ या वयोगटातील शालेय विद्यार्थ्यांना शिक्षण हे पूर्णतः मोफत दिले जाते व ते अनिवार्य आहे. २००९ च्या शिक्षण हक्क कायद्याने याची तरतूद केली आहे उत्पन्न, लिंग व जात विचारात न घेता सर्वांना मोफत शिक्षण उपलब्ध करणे हा या मागील महत्वाचा भाग आहे. शिक्षणामधील प्रवेश गुणवत्ता समानता समावेशकता व रोजगारभिमुखता या सर्व बाजूने विचार करण्यात आला आहे. भारतीय संविधानाच्या - कलम ४५ मध्ये मोफत व अनिवार्य शिक्षण देण्याचा विचार मांडण्यात आलेला आहे.

निष्कर्ष:

* महाराष्ट्रा हे देशामध्ये लोकसंख्ये मध्ये दुसऱ्या क्रमांकाचे राज्य असून औद्योगिक दुष्ट्या प्रगत आहे स्वातंत्र्या नंतर ही महाराष्ट्रातील शिक्षणास प्राधान्य दिल्या जात आहे.

* महाराष्ट्रात प्राथमिक शिक्षणावर सार्वजनिक खर्चाची तरतूद करून वस्ती शाळा, आश्रम शाळांच्या माध्यमातून शिक्षणापासून वंचित त्या बालकांना प्राथमिक शिक्षण देणे सुरु असल्याने आज महाराष्ट्रातील मुलींच्या शिक्षणाचे प्रमाण समाधानकारक असल्याचे दिसून येते.

* महाराष्ट्रातील प्राथमिक शिक्षणा वर होणाऱ्या एकूण खर्चापैकी ९४ % खर्च हा वेतना वर होतांना दिसतो शिक्षणावरील भांडवली खर्चाचे प्रमाण १% पेक्षाही कमी आहे.

* आज खाजगी शाळा ह्या पालकांची पसंती दिसून येते.

* या शाळां मध्ये मुलांच्या नोंदणीचे प्रमाण वाढत आहे शहरा मध्ये खाजगी शाळा चांगले कौशल्य पूर्ण शिक्षण देतात ही धारणा पालकांच्या मनात घर करून गेली आहे.

* अलीकडील काळात खाजगी शिक्षणाद्वारे इंग्रजी माध्यमाच्या शाळांना पालकाची पसंती दिसून येते.

आज ची स्थिती विचारात घेता जिल्हा परिषद शाळेतील प्रवेशित विद्यार्थी ची संख्या लक्षणीयरित्या कमी होत असून मोफत शिक्षण व अनिवार्य शिक्षण साध्य करण्या मध्ये भविष्यकाळात अडचणी होण्याचे संकेत स्पष्टपणे जाणवत आहेत . जिल्हा परिषद शाळांमध्ये पायाभूत सुविधाकडे दुर्लक्ष होतानां दिसते याचाच परिणाम म्हणून खाजगी शाळांकडे पालक वर्ग वळत आहे.

AI-सक्षम स्मार्ट क्लासरूमचा उच्च माध्यमिक विद्यार्थ्यांच्या शैक्षणिक संपादन, सामाजिक व भावनिक अध्ययन (SEL) आणि संज्ञानात्मक व वैचारिक कौशल्यांवर होणाऱ्या परिणामांचा अभ्यास

विद्याश्री बाबाराव हिंगे

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सारांश (Abstract)

प्रस्तुत संशोधनाचा उद्देशपूर्व विदर्भातील (नागपूर, वर्धा, भंडारा, गोंदिया, चंद्रपूर व गडचिरोली) उच्च माध्यमिक विद्यार्थ्यांवर स्मार्ट क्लासरूमच्या वापरामुळे होणाऱ्या शैक्षणिक संपादन, सामाजिक व भावनिक अध्ययन (SEL) तसेच संज्ञानात्मक व वैचारिक कौशल्यां वरील परिणामांचे सूक्ष्म व सर्वंकष अध्ययन करणे हा आहे. 2015 ते 2025 या कालखंडात शिक्षण क्षेत्रात डिजिटल तंत्रज्ञाना सोबतच कृत्रिम बुद्धिमत्ता (Artificial Intelligence-AI) आधारित साधनांचा वापर लक्षणीयरीत्या वाढलेला असून स्मार्ट क्लासरूम ही 21व्या शतकातील अध्यापन-अध्ययन प्रक्रियेची एक प्रभावी व नवोन्मेषी संकल्पना म्हणून उदयास आली आहे.

AI-आधारित अडॉप्टिव्ह लर्निंग प्लॅटफॉर्म, वैयक्तिकृत शिक्षण प्रणाली, बुद्धिमान मूल्यांकन साधने, लर्निंग अनालिटिक्स, डिजिटल सिम्युलेशन व व्हर्चुअल लॅब्सच्या साहाय्याने विद्यार्थ्यांच्या अध्ययन गतीनुसार शिक्षण देणे शक्य झाले आहे. तथापि, या तंत्रज्ञानाचा प्रभाव प्रदेश निहाय, सामाजिक-आर्थिक परिस्थिती नुसार व तांत्रिक पायाभूत सुविधांनुसार वेगवेगळा दिसून येतो. पूर्व विदर्भ हा शहरी, ग्रामीण व आदिवासी भागांचा समावेश असलेला सामाजिक व भौगोलिक दृष्ट्या विविध प्रदेश असल्याने स्मार्ट क्लासरूम व AI-आधारित शिक्षणाच्या प्रभावाचे मूल्यांकन करणे विशेष महत्त्वाचे ठरते. प्रस्तुत संशोधनात मिश्र-पद्धती (Mixed Method) अवलंबण्यात आली असून 600 उच्च माध्यमिक विद्यार्थ्यांचा प्रतिनिधिक नमुना गैर-संभाव्यता नमुना पद्धतीने निवडण्यात आला आहे. तथ्य संकलनासाठी AI-आधारित शैक्षणिक संपादन चाचण्या, सामाजिक व भावनिक अध्ययन (SEL) स्केल, संज्ञानात्मक व वैचारिक कौशल्य चाचण्या, मुलाखती, निरीक्षणे व शाळेच्या नोंदींचा वापर करण्यात आला आहे. या अभ्यासातून स्मार्ट क्लासरूम व AI-समर्थित अध्यापनाचा विद्यार्थ्यांच्या शैक्षणिक कामगिरी व रसकारात्मक व सांख्यिकी दृष्ट्या लक्षणीय परिणाम आढळण्याची अपेक्षा आहे. तसेच विद्यार्थ्यांच्या आत्मविश्वास, सहकार्य, संवादकौशल्य, भावनिक संतुलन व सामाजिक परस्पर संवादात सुधारणा होत असल्याचे निदर्शनास येण्याची शक्यता आहे. AI-आधारित समस्या-निराकरण क्रिया, डिजिटल सिम्युलेशन व डेटा-आधारित अभिप्राय प्रणालींमुळे विद्यार्थ्यांच्या क्रिटिकल थिंकिंग, विश्लेषण क्षमता व निर्णय क्षमतेत वाढ होत असल्याचे ही आढळू शकते. संशोधनातून शहरी, ग्रामीण व आदिवासी भागांतील AI व डिजिटल तांत्रिक असमानता, शिक्षकांच्या AI-प्रशिक्षणातील फरक आणि डिजिटल पायाभूत सुविधांचा परिणाम स्पष्ट होईल. हे निष्कर्ष शिक्षक, शाळा व्यवस्थापन, अभ्यासक्रम रचनाकार व धोरणकर्त्यांसाठी उपयुक्त ठरून स्मार्ट क्लासरूम व AI-आधारित शिक्षणाच्या प्रभावी अंमलबजावणी साठी दिशादर्शक ठरतील.

सुधारित मुख्य शब्द (Keywords):- स्मार्ट क्लासरूम, कृत्रिम बुद्धिमत्ता (AI), शैक्षणिक संपादन, सामाजिक व भावनिक अध्ययन (SEL), संज्ञानात्मक व वैचारिक कौशल्ये, उच्च माध्यमिक विद्यार्थी, शिक्षणातील माहिती व संप्रेषण तंत्रज्ञान (ICT), डिजिटल व AI-आधारित शिक्षण

AI आणि सामाजिक मूल्यविचार

सूर्यकांत हरिश्चंद्र गित्ते

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प्रास्ताविक

आजच्या काळात कृत्रिम बुद्धिमत्ता (Artificial Intelligence – AI) हे अतिशय महत्त्वाचे आणि प्रभावी तंत्रज्ञान म्हणून ओळखले जात आहे. संगणक, मोबाईल, इंटरनेट, सोशल मीडिया, स्मार्ट अ‍ॅप्स, ऑनलाइन शिक्षण, बँकिंग, आरोग्यसेवा, प्रशासन आणि माध्यमविश्व अशा अनेक क्षेत्रांत AI चा वापर झपाट्याने वाढत आहे. अनेक कामे आता यंत्रे स्वतः विचार करून, निर्णय घेऊन आणि अंमलात आणताना दिसतात. त्यामुळे मानवी जीवन अधिक सोयीस्कर, जलद आणि कार्यक्षम झाले आहे. मात्र, या तंत्रज्ञानाचा इतका वेगाने होणारा प्रसार काही गंभीर प्रश्नही निर्माण करीत आहे. AI केवळ यांत्रिक किंवा तांत्रिक साधन न राहता, समाजातील नातेसंबंध, सत्तेची रचना, ज्ञान कसे निर्माण होते आणि ते कोणाच्या हातात असते, यावरही परिणाम घडवून आणत आहे. उदाहरणार्थ, कोणती माहिती आपल्यापर्यंत पोहोचावी, कोणते विचार महत्त्वाचे ठरावेत आणि कोणते दुर्लक्षित राहावेत, हे अनेकदा AI प्रणाली ठरवतात. त्यामुळे मानवी स्वायत्तता, विचारस्वातंत्र्य आणि निर्णयक्षमता यांवर प्रश्नचिन्ह निर्माण होत आहे.

AI चा वापर शिक्षण क्षेत्रात वाढत असला तरी त्यातून नवीन प्रकारची असमानताही निर्माण होत आहे. तंत्रज्ञान उपलब्ध असलेले आणि नसलेले विद्यार्थी, शहरी आणि ग्रामीण भाग, विविध सामाजिक-आर्थिक स्तर - तसेच वेगवेगळ्या पिढ्यांचा यांच्यातील दरी अधिक वाढण्याची शक्यता आहे. AI कडे पाहण्याचा दृष्टिकोनही वेगळा आहे तरुण पिढी. AI सहज स्वीकारत असताना, ज्येष्ठ पिढीमध्ये भीती, संभ्रम आणि अनिश्चितता दिसून येते. आज आपण अशा टप्प्यावर आलो आहोत की "मी AI वापरत नाही" असे म्हणणे जवळजवळ अशक्य झाले आहे. आपण थेट AI वापरत नसलो तरी, मोबाईल अ‍ॅप्स, सोशल मीडिया, ऑनलाइन सेवा, सरकारी प्रणाली अशा माध्यमांतून AI आपल्याशी सतत जोडलेले आहे त्यामुळे AI हे पर्यायी तंत्रज्ञान न राहता, समाजाच्या प्रत्येक पातळीवर कार्यरत असलेले व्यवस्थात्मक घटक बनले आहे.

एकीकडे AI मुळे वेळ व श्रम वाचत आहेत, माहिती सहज उपलब्ध होत आहे आणि अनेक समस्या सोडवणे सोपे झाले आहे. त्यांवर होणारा परिणाम परंतु दुसरीकडे मानवी नो, गोपनीयतेचा प्रश्न, नैतिक जबाबदारी, मानवी भावनांचा न्हास आणि बौद्धिक आरोग्यावर होणारा परिणाम यांसारख्या चिंताही वाढत आहेत त्यामुळे AI चा वापर करताना केवळ तांत्रिक फायदे पाहणे पुरेसे नाही, तर त्याचे सामाजिक, नैतिक आणि मूल्याधिष्ठित परिणामही समजून घेणे आवश्यक आहे. म्हणूनच, AI चा अभ्यास हा फक्त संगणकशास्त्र किंवा तंत्रज्ञानापुरता मर्यादित न ठेवता, समाजशास्त्र, तत्त्वज्ञान, शिक्षण आणि सांस्कृतिक अभ्यास यांच्या चौकटीतूनही करणे अत्यंत गरजेचे आहे अशा समग्र दृष्टिकोनातूनच AI चा मानवकल्याणासाठी योग्य, जबाबदार आणि नैतिक वापर शक्य होईल.

**मध्य प्रदेश विधान सभा चुनाव २०२३ में महिला श्रमिकों का मतदान व्यवहार अध्ययन :
नरसिंहपुर जिले के करेली तहसील के विशेष सन्दर्भ में**

हेमलता अहिरवार, सुलेखा मिश्रा
रानी दुर्गावती विश्वविद्यालय जबलपुर

सारांश

इस अध्ययन का उद्देश्य मध्य प्रदेश विधानसभा चुनाव 2023 के संदर्भ में नरसिंहपुर जिले की करेली तहसील की महिला श्रमिकों की मतदान व्यवहार का आई पर आधारित विश्लेषण उनके राजनीतिक सहभागिता को प्रभावित करने वाले कारकों की पहचान करता है इसके द्वारा मैंने महिला श्रमिकों की जो किसी न किसी प्रकार की श्रम कार्य से जुड़ी हैं जैसे खेतीहर मजदूर, निर्माण श्रमिक, घरेलू कामगार, फैक्ट्री श्रमिक जो कि संगठित महिला श्रमिक कहलाती हैं व ऐसी आसंगठित महिला श्रमिक जो किसी न किसी श्रमिक संगठन से जुड़ी हैं, दोनों का अध्ययन किया है तथा यह भी बताने का प्रयास किया है कि AI से संबंधित इस अध्ययन से सरकार को किस प्रकार का लाभ प्राप्त होगा जैसे -

१. AI पर आधारित अध्ययन से अनुमान नहीं बल्कि वास्तविक व जमीनी डाटा प्राप्त होगा
२. महिला श्रमिकों की वास्तविक स्थिति व उनकी समस्याओं की पहचान प्राप्त हुई है
३. सरकारी योजनाएं ज्यादा प्रभावित होगी
४. नीति निर्माण वैज्ञानिक होगा
५. सरकार जान सकेगी की कौन सी योजनाएं (जो की महिलाओं के लिए हैं) मतदान व्यवहार को प्रभावित कर रही हैं
६. सरकार की कौन सी योजना ऐसी है जिसका असर महिला श्रमिकों पर नहीं हो रहा है
७. सरकार को किस जगह सुधार की जरूरत है
८. सरकार की योजनाओं की सफलता मापी जा सकेगी । AI तकनीक के उपयोग से हमने इसके क्षेत्र व जनसंख्या का अध्ययन भी सहजता से प्राप्त किया है मैंने इसके अध्ययन के लिए AI तकनीक का उपयोग किया है जो की आने वाले भविष्य के लिए बहुत उपयोगी व फायदेमंद साबित हुआ है तथा सरकार को भी इससे लाभ होगा AI का प्रयोग हमारे विधानसभा चुनाव 2023 के कार्य को सुचारु रूप से करने हेतु अत्यंत उपयोगी एवं महत्वपूर्ण जानकारी प्रदान करने में सहायक रहा!

Artificial Intelligence as a Tool for Dramatic Analysis: A Study of Mahesh Dattani's Plays

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Abstract

The rapid development of Artificial Intelligence (AI) has opened new possibilities in the field of literary studies, particularly within Digital Humanities. Drama, as a literary genre that integrates dialogue, character interaction, narrative structure, and performance elements, provides a rich area for AI-assisted analysis. This paper examines the application of Artificial Intelligence as a tool for dramatic analysis with special reference to the plays of Mahesh Dattani, a prominent playwright in Indian English drama known for his socially engaged themes and innovative dramaturgy. AI-based techniques such as thematic mapping, character-network analysis, sentiment analysis, and structural visualization are employed to explore how Dattani's plays construct meaning through language and performance. These methods help in identifying recurring thematic concerns such as gender inequality, identity crisis, patriarchy, marginalization, and social conflict. Character-network analysis reveals patterns of power, dominance, and emotional dependency among characters, particularly in plays like *Tara* and *Dance Like a Man*. Sentiment analysis enables the tracking of emotional shifts across scenes, highlighting moments of tension, repression, and resistance, while structural visualization assists in understanding Dattani's use of non-linear narratives and fragmented dramatic structures. AI tools offer valuable quantitative data and visual representations that enhance textual interpretation, they have inherent limitations. They often fail to fully grasp cultural specificity, performative nuances, symbolic meanings, and emotional depth rooted in Indian social realities. This study argues that AI should not replace traditional literary criticism but should function as a complementary analytical aid. A hybrid approach that combines AI-driven insights with human interpretative judgment allows for a more comprehensive and nuanced understanding of Mahesh Dattani's drama. The paper ultimately highlights the potential of AI to enrich dramatic analysis while reaffirming the indispensable role of human sensitivity in interpreting socially and culturally embedded literary texts.

Keywords:- Artificial Intelligence, Digital Humanities, Mahesh Dattani, Indian English Drama, Dramatic Analysis, Theatre Studies.

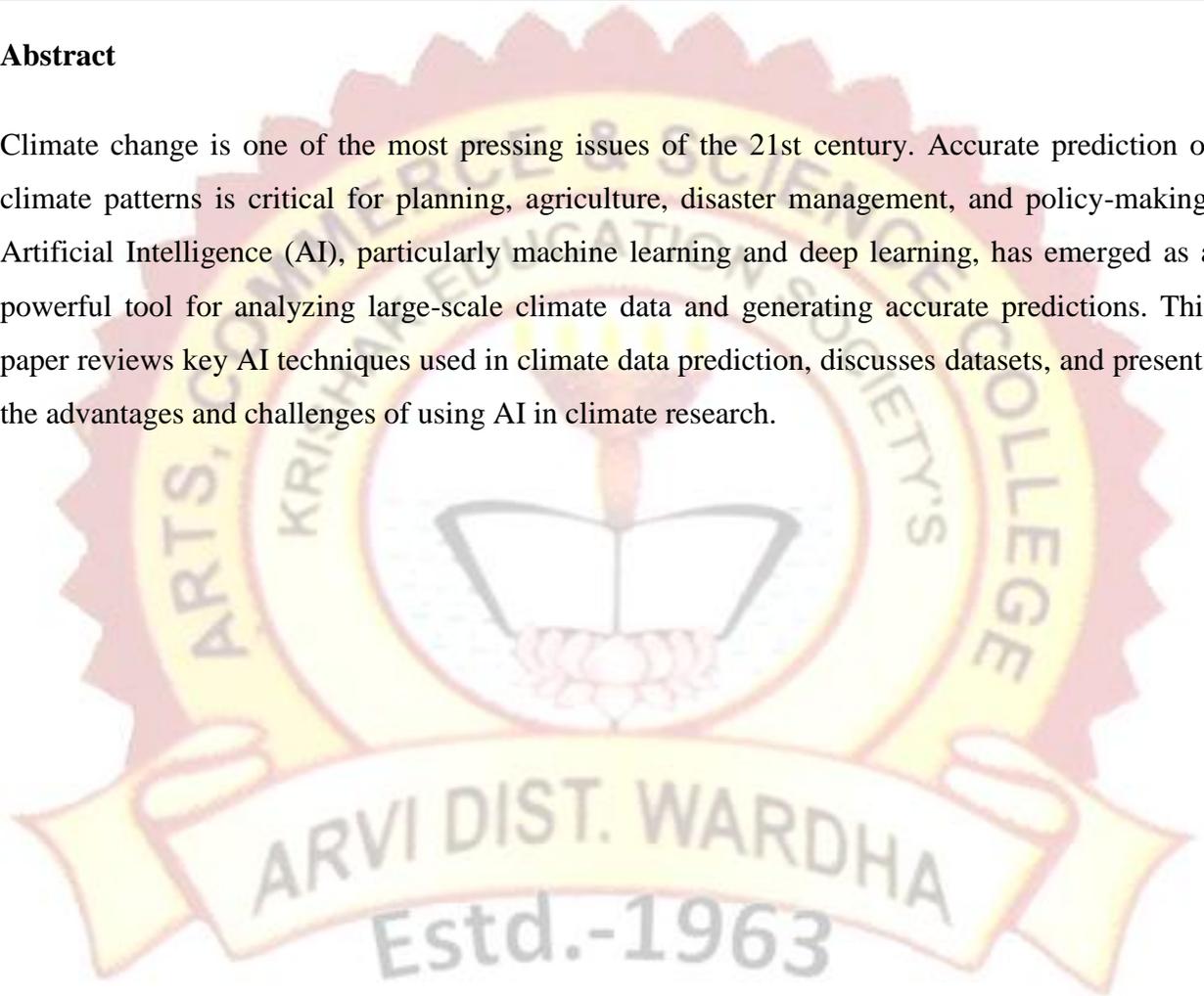
AI for Climate Data Prediction

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Abstract

Climate change is one of the most pressing issues of the 21st century. Accurate prediction of climate patterns is critical for planning, agriculture, disaster management, and policy-making. Artificial Intelligence (AI), particularly machine learning and deep learning, has emerged as a powerful tool for analyzing large-scale climate data and generating accurate predictions. This paper reviews key AI techniques used in climate data prediction, discusses datasets, and presents the advantages and challenges of using AI in climate research.



The AI Spectrum and Its Impact on Education

Sonam Haridas Devtale

Research Scholar

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Abstract

Artificial Intelligence (AI) has emerged as one of the most transformative technologies of the 21st century, reshaping multiple sectors, including education. The “AI Spectrum” — defined as the range of AI capabilities from narrow, task-specific systems to advanced generative and adaptive systems — is beginning to influence how students learn, how educators teach, and how educational systems are structured. This research investigates the multidimensional impacts of AI across educational contexts, examining benefits, challenges, ethical considerations, and future trajectories. Through a systematic literature review and cross-sector analysis, this study demonstrates that while AI holds substantial promise for personalized learning, administrative automation, and accessibility enhancements, it also raises concerns around equity, data privacy, teacher roles, and algorithmic fairness. The paper concludes with recommendations for policy, practice, and future research.

Keywords:- Artificial Intelligence, education, personalized learning, ethical AI, adaptive systems, educational technology.

प्राचीन भारतातील शिक्षण पद्धती एक ऐतिहासिक अध्ययन

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सारांश (Abstract)

प्राचीन भारतीय संस्कृतीत शिक्षणाला अत्यंत महत्त्वाचे स्थान होते शिक्षण हे केवळ उपजीविकेचे साधन नसून साधन नसून व्यक्तीचा सर्वांगीण विकास चारित्र्य निर्मिती व सामाजिक जबाबदारी घडविण्याचे प्रभावी माध्यम मानले जात होते शिक्षणाचे स्वरूप गुरुकुल पद्धतीचे होते. विद्यार्थी गुरूच्या आश्रमात राहून शिक्षण घेत असत.या कळतील शिक्षण मौखिक पद्धतीचे होते. ब्रह्मचर्या पासून शिक्षणाची सुरुवात गुरुकुलात होत होती .अभ्यासक्रम हा वेद (ऋग्वेद, यजुर्वेद, सामवेद, अथर्ववेद)वेदांग - शिक्षा, कल्प, व्याकरण, निरुक्त, छंद, ज्योतिष तत्त्वज्ञान, धर्म, नीतिशास्त्र, गणित, खगोलशास्त्र, आयुर्वेद, युद्धकला इत्यादी स्वरूपाचे होते. या काळातील शिक्षणाचा उद्देश आत्मज्ञान व मोक्षप्राप्ती, शिस्त, संयम, चारित्र्यनिर्मिती, सामाजिक व धार्मिक कर्तव्यांची जाणीव निर्माण करणे असे होते.

उत्तर वैदिक व स्मृती काळात शिक्षण अधिक संघटित व विस्तृत झाल्याचे दिसून येते. उपनिषदांना प्रथम धार्मिक क्रांतीचे ग्रंथ मानले जाते. उपनिषदांमधून तात्त्विक चिंतनाचा विकास मोठ्या प्रमाणावर झालेला दिसून येतो. स्मृती ग्रंथांद्वारे शिक्षणाचे नियम ठरवले जातांना दिसते. स्त्रियांचे शिक्षण मर्यादित असले तरी गार्गी, मैत्रेयी, अपाला, घोषा यांसारख्या विदुषींचे उल्लेख आढळतात.

बौद्ध व जैन काळात विहार, संघ, मठ ही शिक्षणाची केंद्रे बनली होती. शिक्षण सर्वांसाठी खुले होते. जाती भेद कमी झालेला दिसून येतो. या काळातील अभ्यासक्रमात बौद्ध तत्त्वज्ञान, त्रिपिटक, तर्कशास्त्र, व्याकरण, वैद्यक, गणित, शिल्पकला असा बदल झाला होता. शिक्षणात लोकशाही नैतिकता व व्यवहारिक ज्ञान यावर भर होता. मौखिक व लिखित दोन्ही पद्धती या काळात प्रचलित होत्या.

मौर्य व गुप्त काळ हा प्राचीन भारतीय शिक्षणाचा सुवर्णकाळ मानला जातो.या काळात प्रत्येक शिक्षणकेंद्राचे स्वतंत्र वैशिष्ट्ये होती. तक्षशिला - वेद, आयुर्वेद, युद्धविद्या या करिता प्रसिद्ध होते. नालंदा विद्यापीठ - बौद्ध तत्त्वज्ञान, विज्ञान, गणित इत्यादींसाठी प्रसिद्ध असलेले दिसून येते. वल्लभी, विक्रमशिला सारखी विद्यापीठे सुद्धा प्रसिद्ध असलेले दिसून येते. विद्यार्थ्यांना राहण्या करिता वसतिगृहे होती. त्याचप्रमाणे सुसज्य अशी ग्रंथालये होती.

या काळाचे अत्यंत महत्त्वाचे वैशिष्ट्य म्हणजे आंतरराष्ट्रीय स्तरावरील विद्यार्थी शिक्षण घेण्याकरिता भारतात येतांना दिसून येते.

प्राचीन भारतीय शिक्षण प्रणाली ही ज्ञान, धर्म, विज्ञान आणि जीवनमूल्यांचा समन्वय साधणारी होती. भारतीय शिक्षण व्यवस्थेने जगाला विद्यापीठ संकल्पना, तत्त्वज्ञान, गणित व विज्ञानातील अमूल्य योगदान दिले. आजच्या आधुनिक शिक्षणासाठीही ही प्रणाली प्रेरणादायी आहे.

The Role of Artificial Intelligence in Building Education, Sustainable Economies, and Advanced Science

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Abstract

Artificial Intelligence (AI) is playing an important role in improving education, supporting sustainable economies, and advancing scientific research. In education, AI helps create personalized learning experiences, supports teachers, and makes learning more accessible for students. Tools such as smart learning systems and automated assessments help students learn at their own pace and improve overall learning outcomes. In sustainable economies, AI helps industries use resources more efficiently, reduce waste, and increase productivity. It supports better decision-making in areas such as agriculture, energy, healthcare, and business, contributing to economic growth while protecting the environment. In advanced science, AI helps researchers analyze large amounts of data, understand complex systems, and speed up scientific discoveries. It has contributed to progress in fields such as medicine, climate research, and space science. Although AI offers many benefits, it also raises challenges related to data privacy, fairness, and job security. This paper discusses how AI can be used responsibly to support education, economic sustainability, and scientific development, highlighting the need for ethical and human-centered approaches to ensure long-term societal benefits.

The Transformative Impact of Artificial Intelligence in Revolutionizing the Shaping Modern Education

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Abstract

Artificial Intelligence (AI) is changing many fields, including education. AI helps improve teaching methods, learning experiences, and administrative tasks. This paper discusses the impact of AI in education, its benefits, challenges, and future scope. The goal is to explain how AI makes education more personalized, efficient, and accessible while also highlighting concerns such as data privacy and job displacement. Introduction

Education is one of the most important areas for social and economic development. Traditional education systems often use the same teaching method for all students, even though learners have different abilities and learning speeds. Artificial Intelligence offers solutions to these problems.

AI refers to computer systems that can perform tasks that normally require human intelligence, such as learning, reasoning, and decision-making. In education, AI is used in tools like intelligent tutoring systems, virtual assistants, automated grading, and personalized learning platforms. These technologies are helping teachers and students in many ways.

The Use of Artificial Intelligence for Improving Language Skills in ESL Learners

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Abstract

Artificial Intelligence (AI) has increasingly influenced modern educational practices, particularly in the field of second language learning. English as a Second Language (ESL) learners often encounter difficulties such as limited exposure to authentic language input, insufficient individualized feedback, and communication anxiety. AI-based technologies offer innovative solutions by providing adaptive learning environments, automated feedback, and interactive language practice opportunities. This research paper examines the role of artificial intelligence in enhancing language skills among ESL learners. It explores major AI technologies used in language education, their impact on speaking, writing, listening, and reading skills, as well as the challenges associated with their implementation. The study concludes that while AI cannot replace human instruction, it serves as a powerful supplementary tool that supports personalized and effective language learning.

Keywords:- Artificial intelligence, ESL education, language acquisition, AI-based learning, second language learning

Life Cycle Assessment of Polymers and Their Environmental Impact

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Abstract

The widespread use of polymers has transformed modern society due to their versatility, durability, and cost-effectiveness; however, their life-cycle environmental impacts have raised significant sustainability concerns. Life Cycle Assessment (LCA) is a systematic and quantitative tool used to evaluate the environmental impacts associated with polymers from raw material extraction through production, use, and end-of-life management.

This paper presents a comprehensive life cycle assessment of polymeric materials, focusing on energy consumption, greenhouse gas emissions, resource depletion, and waste generation across different stages of the polymer life cycle. The study critically compares conventional petroleum-based polymers with bio-based and biodegradable alternatives, highlighting the trade-offs between material performance and environmental sustainability. Special emphasis is given to end-of-life scenarios such as recycling, incineration, and landfilling, and their respective environmental burdens.

The findings indicate that while recycling and bio-based feedstocks can significantly reduce carbon footprints and resource use, challenges related to infrastructure, material quality degradation, and land use remain. This review underscores the importance of integrating life cycle thinking into polymer design, policy formulation, and industrial practices to mitigate environmental impacts and promote a circular economy. The outcomes of this study provide valuable insights for researchers, policymakers, and industry stakeholders aiming to develop sustainable polymer solutions.

Keywords:- Life Cycle Assessment (LCA), Polymerization Processes, Mechanical Recycling, Chemical Recycling, Bio-based Polymers, Circular Economy

A Comparative Study of Conventional and Electric Vehicle Industries in India: Environmental, Economic, Policy and Artificial Intelligence Perspectives

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Abstract

The Indian automobile industry is undergoing a significant structural transformation driven by environmental sustainability concerns, energy security challenges, policy interventions and rapid technological advancements such as Artificial Intelligence (AI). This study presents a comparative analysis of conventional internal combustion engine (ICE) vehicles and electric vehicles (EVs) in the Indian context, incorporating environmental, economic, policy, and AI-driven perspectives. Using secondary data sourced from government reports, regulatory authorities and international agencies, the study examines emission patterns, cost structures, lifecycle impacts and policy frameworks including FAME, Bharat Stage-VI norms, vehicle scrappage policy and production-linked incentive schemes. In addition, the study highlights the growing role of AI in enhancing manufacturing efficiency, optimizing energy consumption, improving emission monitoring, enabling predictive maintenance and supporting data-driven policy evaluation. The findings reveal that while conventional vehicles continue to dominate the current market, electric vehicles supported by AI-enabled innovations offer substantial long-term advantages in terms of reduced emissions, lower operational costs and alignment with India's sustainable mobility objectives. The study concludes that the integration of Artificial Intelligence with electric mobility is not merely a technological enhancement but a strategic necessity for the future transformation of India's automobile industry.

The Impact of AI on Literature Writing, Poetry and Critical Studies

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Abstract

Artificial Intelligence is increasingly influencing many creative and intellectual fields, including literature. In recent years, AI tools have begun assisting writers, poets, and critics in generating ideas, composing texts, and analyzing literary works. This paper examines the impact of AI on literature writing, poetry, and critical thought, and explores how these technologies are changing traditional notions of creativity and authorship. While literary expression has long been considered a uniquely human ability, AI now plays a supportive role in shaping how content is produced and interpreted.

The study highlights both the benefits and limitations of AI in the literary domain. On the positive side, AI helps writers overcome creative blocks, improve language quality, and experiment with new styles and formats. It also enables faster and more systematic analysis in literary criticism by processing large volumes of text. In poetry, AI introduces innovative patterns and structures that encourage fresh forms of expression. However, concerns remain about originality, emotional depth, and the authenticity of machine-generated content. Unlike human writers, AI lacks personal experience, cultural sensitivity, and emotional understanding, which are essential elements of meaningful literature.

Through this discussion, the paper suggests that AI should be seen not as a replacement for human creativity but as a tool that supports and enhances the creative process. A balanced collaboration between human insight and technological assistance can lead to more diverse and experimental forms of writing. Overall, AI is transforming the way literature is created and studied, encouraging new possibilities while also challenging existing perspectives on creativity and critical thinking in the digital age. Thus, the influence of AI marks a transformation rather than a threat to literature. When guided by human judgment and creativity, AI can open new pathways for expression and interpretation. Together, they redefine the boundaries of modern literary art.

Keywords:- Artificial Intelligence, Literature, Creative Writing, Poetry, Literary Criticism, Human–AI Collaboration

Artificial Intelligence and the Future of Work Transformations in Employment and the Job Market

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Abstract

Artificial Intelligence is rapidly transforming the nature of work and redefining employment structures across the globe. From automated manufacturing systems to intelligent virtual assistants and data-driven decision-making tools, AI technologies are becoming deeply integrated into everyday organizational processes. This paper examines how Artificial Intelligence is reshaping the future of work by altering job roles, skill requirements, and workforce dynamics, while creating both opportunities and challenges within the labor market. Rather than viewing AI solely as a threat, the study presents a balanced perspective that recognizes its potential to displace certain jobs while generating new forms of employment.

Routine and repetitive tasks are particularly vulnerable to automation, especially in manufacturing, retail, and administrative services. At the same time, AI is expanding opportunities in emerging fields such as data science, machine learning, cybersecurity, and human–AI collaboration. Consequently, the labor market is shifting from manual and predictable work toward technical, analytical, and creative occupations that demand higher cognitive skills. This transition highlights the increasing importance of digital literacy, adaptability, and lifelong learning, as workers must continuously upgrade their competencies to remain competitive.

The study also addresses the broader social and ethical implications of AI adoption, including job insecurity, income inequality, and the digital divide. Without inclusive policies and structured reskilling initiatives, the benefits of technological progress may be unevenly distributed across society. Therefore, collaboration among governments, educational institutions, and organizations is essential to ensure equitable access to training and employment opportunities. Artificial Intelligence should be understood not as a replacement for human labor but as an enabling force that enhances productivity, innovation, and decision-making.

Keywords:- Artificial Intelligence, Future of Work, Employment Transformation, Automation, Workforce Skills, Human–AI Collaboration

Implication of AI Tools and Generative AI

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Abstract

The rapid advancement of artificial intelligence (AI) tools and generative AI has significantly transformed the marketing landscape, reshaping how organizations understand consumers, design strategies, and deliver value. This abstract examines the key implications of AI and generative AI in marketing, focusing on efficiency, personalization, decision-making, and ethical considerations. AI-powered tools enable marketers to analyze large volumes of consumer data in real time, leading to more accurate market segmentation, predictive analytics, and customer behavior forecasting. Generative AI, in particular, enhances content creation by producing personalized advertisements, social media posts, product descriptions, and customer communications at scale, reducing time and operational costs while increasing engagement.

Furthermore, AI-driven marketing automation improves customer experience through chatbots, recommendation systems, and dynamic pricing models, allowing brands to deliver highly tailored interactions across multiple digital touchpoints. These technologies also support data-driven decision-making by providing actionable insights that help marketers optimize campaigns and measure performance more effectively. However, the growing reliance on AI tools introduces challenges related to data privacy, algorithmic bias, transparency, and consumer trust. Ethical use of AI and responsible data management have therefore become critical considerations for organizations seeking long-term sustainability.

Overall, the integration of AI tools and generative AI in marketing offers substantial competitive advantages by enhancing creativity, efficiency, and customer-centric strategies. At the same time, it demands careful governance, skilled human oversight, and a balanced approach that combines technological innovation with ethical responsibility. As AI continues to evolve, its role in marketing will expand, making it essential for marketers to adapt and strategically leverage these technologies to remain relevant in an increasingly digital and intelligent marketplace.

Artificial Intelligence across Education: An Interdisciplinary Perspective

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Abstract

Artificial Intelligence (AI) has emerged as a transformative force in the contemporary education system, significantly influencing teaching–learning processes, assessment mechanisms, institutional governance, and educational research. This interdisciplinary study examines the expanding role of AI across various dimensions of education by integrating insights from pedagogy, psychology, economics, data science, public policy, and ethics. The primary objective of this paper is to analyze how AI-driven tools and technologies contribute to enhanced learning outcomes, promote inclusivity, and support informed decision-making at different levels of the education system.

The study adopts an application-oriented and analytical approach, drawing upon secondary sources such as policy documents, research reports, case studies, and recent empirical literature. It critically examines major AI applications in education, including intelligent tutoring systems, adaptive learning platforms, learning analytics, automated evaluation methods, virtual learning environments, and AI-enabled administrative processes. The paper also explores how AI addresses key educational challenges such as learner diversity, increasing teacher workload, access inequalities, and the need for skill development in a rapidly evolving knowledge economy.

A significant focus of the study is the interdisciplinary impact of AI, particularly its economic implications, ethical concerns, data privacy issues, and the importance of human-centered educational frameworks. While AI offers substantial opportunities for personalized, efficient, and outcome-based education, the paper cautions that unregulated or inequitable implementation may exacerbate existing digital divides and marginalize disadvantaged learners.

The study concludes by emphasizing the need for balanced and responsible integration of AI in education through inclusive policies, continuous teacher training, ethical safeguards, and interdisciplinary collaboration. AI should be viewed not as a substitute for educators, but as a supportive tool for enhancing educational quality, accessibility, and sustainability.

The Role of Artificial Intelligence in Transforming Library Services

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In the rapidly evolving digital landscape, libraries are increasingly integrating Artificial Intelligence (AI) technologies to meet the dynamic needs of users and enhance library service delivery. In recent years, the integration of Artificial Intelligence (AI) into Library and Information Science (LIS) has gained significant attention. The Library Information Systems (LIS) field has transformed with the rise of Artificial Intelligence (AI) in enhancing library operations, services, and user experiences. AI has been transforming library services in various ways, making them more efficient, user-friendly, and accessible.

The review reveals that AI significantly contributes to library functions, including technical services like cataloging and classification, personalized information retrieval, automated document digitization, application of Ai in enhancement of user experience. Further challenges and limitations in use of AI in providing library services are also discussed. This paper explores the transformative role of AI in shaping user information-seeking behavior and improving user satisfaction within modern library environments.

The study also highlighted on future trends and directions in the LIS field. AI and the role and skill of librarians are also discussed. The paper highlighted the importance of digital literacy, data management, and ethical decision-making. Key findings highlighted the improvements in search capabilities, accessibility, user engagement, and operational efficiency.

In conclusion integration and use of AI have brought more new opportunities than challenges in the information landscape, mostly in library operations and service delivery. In this situation role of librarians is crucial by changing their attitudes towards understanding of relevant AI, and acquiring more application skills, knowledge, and experience is important for library professionals to survive.

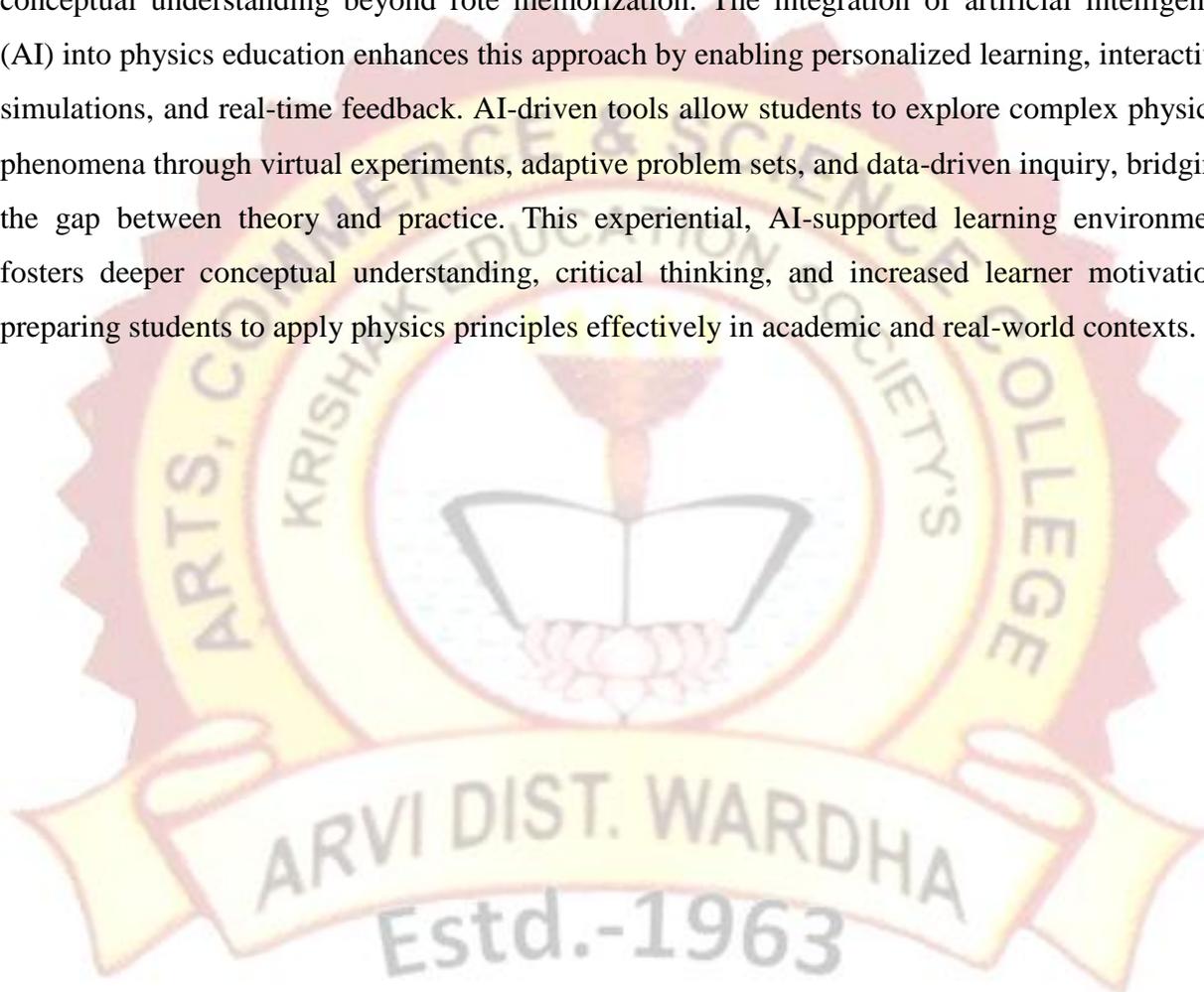
Experience learning of physics with AI

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Abstract

Experiential learning in physics emphasizes active engagement, real-world problem solving, and conceptual understanding beyond rote memorization. The integration of artificial intelligence (AI) into physics education enhances this approach by enabling personalized learning, interactive simulations, and real-time feedback. AI-driven tools allow students to explore complex physical phenomena through virtual experiments, adaptive problem sets, and data-driven inquiry, bridging the gap between theory and practice. This experiential, AI-supported learning environment fosters deeper conceptual understanding, critical thinking, and increased learner motivation, preparing students to apply physics principles effectively in academic and real-world contexts.



Role of AI in graph theory

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Abstract

Artificial Intelligence (AI) has emerged as a powerful tool in advancing research and applications of graph theory. Graph theory provides a mathematical framework for representing complex systems such as social networks, transportation systems, biological networks, and communication infrastructures. AI techniques, especially machine learning and deep learning, enable efficient analysis of large-scale graphs by identifying hidden patterns, predicting relationships, and optimizing network structures. Graph Neural Networks (GNNs), a prominent AI model, combine graph theory with neural networks to process graph-structured data effectively. These models enhance tasks such as node classification, link prediction, and community detection. Furthermore, AI-driven algorithms improve traditional graph problems like shortest path, coloring, and clustering by offering faster and more adaptive solutions. The integration of AI with graph theory has led to significant advancements in data science, cybersecurity, bioinformatics, and smart systems. Thus, AI not only strengthens theoretical research in graph theory but also expands its practical relevance in solving real-world problems.

AI in Blockchain Management

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Abstract

Artificial Intelligence (AI) and Blockchain are two emerging technologies that are transforming modern management systems. Blockchain provides a secure, transparent, and decentralized platform for recording transactions, while Artificial Intelligence enables intelligent decision-making through data analysis, pattern recognition, and automation. The integration of AI with Blockchain management enhances efficiency, security, and trust across organizational processes. AI improves blockchain systems by optimizing smart contracts, detecting fraud, predicting risks, and managing large volumes of data more effectively. In blockchain management, AI-based algorithms help in monitoring network performance, automating compliance, and improving scalability. This combination also supports better supply chain management, financial management, and data governance by ensuring accuracy and reducing human intervention. Despite its advantages, the integration of AI and blockchain faces challenges such as high implementation costs, data privacy concerns, and technical complexity. This study explores the role of AI in blockchain management, highlights its applications, benefits, and challenges, and emphasizes its potential to reshape future management practices. The findings suggest that AI-powered blockchain systems can significantly improve transparency, efficiency, and decision-making in organizations.

Bio-agents of rice ecosystem in Central India (MS)

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Abstract

A general survey was made on the farmers' rice fields to study the diversity of bio-agents in rice ecosystem of eastern Vidarbha of Maharashtra, India. In both kharif (wet) and rabi (dry) seasons a predatory bio-agent complex of 23 insects including spiders preying on various stages of insect pests belonging to 7 orders and 18 families was prominently recorded and identified. Among the 23 predators, dragonflies, *Crocothemis servilia* (Drury) and *Orthetrum sabina* (Drury), damselfly, *Agriocnemis femina*, lady bird beetles, *Micraspis* (= *Verania*) *discolor* and *Hormonia octamaculata*, rove beetle, *Paederus fuscipes* and ground beetle, *Ophionia indica* were found to be abundantly preying on immature and mature stages of major and minor pests. Out of the 4 species of spiders recorded as non-insect predators, *Lycosa pseudoannulata* was found to be predominant species preying on all types of pests. The abundance of dragonflies, *M. discolor* and *P. fuscipes* was more in rabi than in kharif season whereas spiders and ground beetle, *O. indica* were dominant during kharif season. The findings of present study may help in Integrated Pest Management technique to control the major insect pests of rice ecosystem.

Keywords:- Bio-agents, Central India, farmers' fields, kharif, rabi.

The Multidisciplinary Impact of Artificial Intelligence in the Digital Era

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Abstract

Problem Statement

Despite the rapid integration of Artificial Intelligence (AI) across global sectors, there remains a critical gap in understanding how these technologies simultaneously disrupt and enhance traditional frameworks in **education, economy, business, and social science**. Key challenges include the "digital divide" in education, algorithmic bias in social research, labor displacement in the economy, and the ethical integration of generative tools in business operations. Without a clear synthesis of these impacts, stakeholders risk implementing AI solutions that exacerbate socioeconomic inequalities rather than solving them.

Methodology

This study employs a **multi-methodological approach** consisting of a systematic literature review (SLR) of 150+ peer-reviewed articles from 2023–2026 and a comparative case study analysis. Data were aggregated from diverse sources including educational performance metrics, economic growth forecasts (e.g., IMF and OECD projections), and business productivity indices. Furthermore, a qualitative thematic analysis was conducted on current social science research to evaluate how AI tools like Large Language Models (LLMs) are reshaping human behavioral studies and societal data interpretation.

Key Findings and Contributions

The research identifies that AI acts as a "double-edged sword" across all four domains:

- **Education:** AI-driven adaptive learning systems increase student engagement by **30-40%**, yet teacher-training gaps remain a significant barrier to equitable implementation.
- **Economy:** AI is projected to contribute roughly **\$15.7 trillion** to the global GDP by 2030, though it necessitates a massive "reskilling" of the workforce to mitigate a net job displacement of nearly **85 million** roles.
- **Business:** Adoption of generative AI in CRM and supply chain management has improved operational efficiency by **50%**, but has also raised critical concerns regarding data privacy and "black-box" decision-making.
- **Social Science:** AI enables the processing of massive datasets to predict societal trends with unprecedented accuracy, yet it introduces risks of automated bias in criminal justice and social welfare algorithms.

The study concludes by proposing an **Integrated AI Governance Framework** that prioritizes human-centric design and cross-sectoral ethics to ensure that technological progress aligns with sustainable development goals.

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