

AI&DS

Insights

Monthly Awareness Bulletin

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Vishwakarandak, the annual four-day spectacle at VIT Pune, is a celebration of talent, teamwork, and spirited competition. This flagship event brings together students from various departments, transforming the campus into a hub of excellence across sports, literature, technical challenges, and the arts. It fosters not only competition but also unity, perseverance, and creativity.



The 2025 edition witnessed an outstanding showcase of skills and determination, culminating in a well-earned victory for the IT/AIDS department. Their exceptional performances across multiple domains reflected technical expertise, strategic thinking, and unwavering dedication. From intense sporting contests to groundbreaking technical innovations, their triumph was a testament to collaboration and resilience.

Vishwakarandak remains a cornerstone of VIT Pune's dynamic culture, instilling leadership, innovation, and teamwork in its participants. It continues to inspire students to push boundaries, embrace challenges, and excel in diverse fields, shaping them into future leaders and innovators.

Faculty Article

Explainable AI for Engineering Applications



In this edition of our e-bulletin, we explore the deployment of Artificial Intelligence (AI), Machine Learning (ML), and Deep Learning-based solutions has significantly improved business operations across various sectors, including automotive, electronics, and medical device manufacturing. Compared to traditional, rule-based implementations, AI-driven systems offer enhanced efficiency and accuracy.

Model-Centric vs. Data-Centric

- AI Modern AI follows a model-centric approach, where data remains relatively stable while most development efforts focus on refining the model.
- The data-centric AI approach shifts the focus to data itself, treating it as the primary asset that is iteratively developed and optimized.
- This method emphasizes data labeling, management, augmentation, and curation, while keeping the model relatively static.
- The shift to a data-centric strategy has enabled broader accessibility of AI benefits to various industries.

Evolution of AI: From Rule-Based to Data-Centric

- Traditional AI relied heavily on rules and heuristics, which were effective in certain cases but often failed with new datasets, leading to errors.
- The integration of ML and big data analytics has reduced algorithm dependency, allowing AI to learn from data and generate precise outcomes.
- Data-centric AI enhances scalability, making it increasingly relevant as datasets continue to grow in size and complexity.

Objectives

This session primarily focuses on recent developments in Explainability of AI model outcomes and methods to justify results using feature importance. The key objectives include:

- Highlighting the need for Explainable AI (XAI) in engineering applications.
- Presenting coding approaches and methodologies to achieve accurate results through improved feature selection.
- Addressing challenges related to data quality in data-centric models.
- Exploring dataset generation techniques, including synthetic data.
- Analyzing and implementing stochastic prediction algorithms.

Explainability plays a crucial role in enhancing the reliability of AI systems by providing transparency in decision-making. It helps in refining data-centric models and ensures trustworthiness in AI-driven solutions by improving data selection and analysis methodologies.

Conclusion

Explainable AI (XAI) is becoming an essential component in the advancement of AI-driven engineering applications. By enhancing transparency and interpretability, XAI bridges the gap between complex AI models and human decision-makers. The transition from model-centric to data-centric AI has emphasized the need for improved data quality, feature selection, and prediction reliability. As AI continues to expand across industries, integrating explainability ensures not only accuracy and efficiency but also trustworthiness in AI models. Future developments in XAI will further enable AI-driven solutions to be more ethical, interpretable, and widely adopted in engineering and beyond.

Keywords

Explainable AI, Data-centric AI, Scalability, Feature Importance, Model Transparency



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Activities



Industry Project Discussion with Infosys (Jan 28, 2025)

Mr. Hemant Nagalkar from Infosys interacted with students, discussing industry-relevant projects and best practices for working on AI and data science applications. The session covered industry expectations, project planning, problem-solving strategies, and insights into bridging the gap between academic knowledge and real-world implementation.

Conducted by SURBHI KAKADE

Tech Talk on Deep Diving into LLMs and AI (Feb 14, 2025)

This session explored the latest advancements in Large Language Models (LLMs) and AI, focusing on their real-world applications, ethical implications, and future potential. It provided insights into deep learning techniques, model training, and the growing influence of AI across various industries.

By SURBHI KAKADE

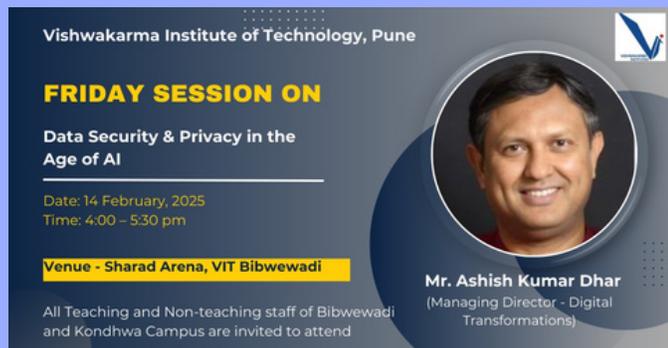


Visit by e-Zest by Accion Labs to VIT CoE on Gen AI

An industry visit to e-Zest by Accion Labs was organized, focusing on Product Deployment. Students Arya Pise, Gayatri Nangare, Amarsinh Nangare, and Radhika Jaju participated in the visit, gaining insights into real-world product deployment processes. The visit was guided by Faculty Members Surabhi Kakade and Neha Rajas, offering students valuable industry exposure and learning opportunities.

By SURBHI KAKADE

Activities



Vishwakarma Institute of Technology, Pune

FRIDAY SESSION ON

Data Security & Privacy in the Age of AI

Date: 14 February, 2025
Time: 4:00 – 5:30 pm

Venue - Sharad Arena, VIT Bibwewadi

All Teaching and Non-teaching staff of Bibwewadi and Kondhwa Campus are invited to attend

Mr. Ashish Kumar Dhar
(Managing Director - Digital Transformations)

Session on Data Science by Mr. Ashish Kumar Dhar

A session led by Mr. Ashish Kumar Dhar covered core data science concepts, statistical modeling, and machine learning applications. It provided real-world examples of AI-driven decision-making, big data analytics, and challenges in data processing, helping students understand industry trends and best practices in data science.

Conducted by SURBHI KAKADE

NASSCOM AI Conference (Feb 25, 2025)

NASSCOM hosted a major AI conference featuring discussions on emerging trends, ethical AI considerations, and industrial applications. Experts from various domains shared insights on AI-driven automation, data privacy challenges, and career opportunities, providing students a platform to network and gain industry exposure.

Conducted by Surabhi Kakade.

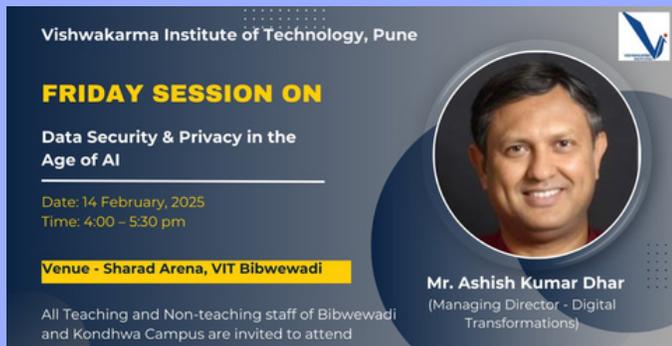


Research Paper on Modernization and Population Growth (Feb 28, 2025)

Vaishali Savale's research paper examined how modernization influences population growth, analyzing socio-economic factors, urbanization trends, and technological advancements. The study highlighted the effects of industrialization on resource distribution, city planning, and societal changes, offering a deep dive into the intersection of technology and population dynamics.

By Vaishali Savale

Activities



Session on Data Science by Mr. Ashish Kumar Dhar (Feb 17, 2025)

A session led by Mr. Ashish Kumar Dhar covered core data science concepts, statistical modeling, and machine learning applications. It provided real-world examples of AI-driven decision-making, big data analytics, and challenges in data processing, helping students understand industry trends and best practices in data science.

Conducted by SURBHI KAKADE

Conference Paper Published in IEEE PuneCon (Feb 28, 2025)

Dr. Varsha D. Jadhav published a research paper in IEEE PuneCon, presenting innovative findings in artificial intelligence and data science. The paper contributes to academic research by addressing key challenges in AI implementation, optimization techniques, and potential breakthroughs that can influence future technological advancements.

By Dr. Varsha D. Jadhav

Award :

Dr Hrushikesh Joshi Co -Convener IIC@VIT received award from Dr. Rahul Karad, Managing Trustee & Executive President of MAEER'S MIT Group of Institutions, at the Incubation and Acceleration Conference for his valuable insights. He represented Team ICC VIT at the event.



Dr Minal Barhate



Prof. Lokesh Khedekar



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Utkarsha Dhawle
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