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INTERNATIONAL WORKSHOP ON DATA-DRIVEN

Approaches to Empowering Engineers for a Sustainable Future (DEESF'25)

The Department of Mathematics and Statistics, VFSTR successfully hosted a three-day International Workshop titled Data-Driven Approaches to Empowering Engineers for a Sustainable Future (DEESF'25) from 22 to 24 December 2025. The programme served as a vibrant platform for academicians, researchers, industry professionals, and students to examine how statistics, data analytics, artificial intelligence, and machine learning can drive sustainable engineering practices and informed decision-making.

The workshop opened with an inaugural session and unfolded through ten expert-led technical sessions, delivered in a blended mode. Each session underscored the importance of coupling rigorous theoretical frameworks with practical, real-world applications.

The inaugural technical address was delivered by Prof. M. Vishnu Vardhana Rao, Officiating Vice-Chancellor, Indian Institute of Public Health, and former Director, Indian Council of Medical Research. He highlighted the central role of statistics in the era of AI and big data, stressing reliability, interpretability, and uncertainty management in analytical models.

Subsequent sessions explored diverse and contemporary

themes. Dr. S. Yadavendra Babu illustrated how data analytics empowers engineers to make efficient and sustainable decisions. Dr. Sudheesh Kumar K. from Indian Statistical Institute explained the importance of choosing appropriate statistical tools for effective decision-making. Prof. Somesh

Kumar of Indian Institute of Technology Kharagpur demonstrated the use of overlap indices in analysing health and climate data, while Prof. R. Vishnu Vardhan from Pondicherry Central University discussed the foundational significance of statistics in data science.

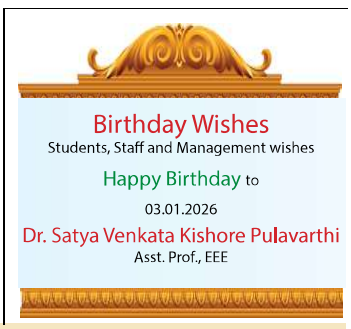
The global dimension of the workshop was enriched by Prof. R. Sivasamy from the University of Botswana, who spoke on AI-driven inventory optimisation for sustainable supply chains, and Prof. Asokan M. V. from the Memorial University of Newfoundland, who presented advanced methods on empirical likelihood-based confidence intervals.

Industry perspectives were shared by Mr. E. Vamsi Krishna of Synechron, who connected data science concepts with practical industry use cases. Prof. Arun K. T. from Indian Institute of Technology Tirupati offered an illustrated overview of applying AI and data science, while Dr. Hemanth Kumar T. of Indian Institute of Petroleum and Energy concluded the technical programme with insights into contemporary machine-learning algorithms, bridging theory and practice.

The workshop was convened with academic leadership and precision by Dr. P. Kalpana and Dr. K. Kalyani of the

Department of Mathematics and Statistics, VFSTR. A key highlight of DEESF'25 was its hands-on practice sessions, which enabled participants to work directly with real datasets, analytical tools, and AI/ML workflows, significantly enhancing practical competence.

DEESF'25 emerged as a comprehensive and impactful academic initiative, deepening participants' understanding of data-driven methodologies for sustainable engineering. The synergy of expert lectures, interactive discussions, and experiential learning made the workshop a valuable and enriching experience for students, faculty members, and researchers alike.



"The road to success and the road to failure are almost exactly the same."