



INDIAN INSTITUTE OF TECHNOLOGY MANDI
भारतीय प्रौद्योगिकी संस्थान मंडी

Institute Colloquium

“Artificial Intelligence: Transforming Education, Research and Technology Development”



**Prof. Partha P.
Chakrabarti**

Former Director of IIT Kharagpur



**01st April,
2026**



12:00 noon



**Auditorium,
North Campus**

“Artificial Intelligence: Transforming Education, Research and Technology Development”

Prof. Partha P. Chakrabarti

Affiliation: - Professor of Department of Computer Science & Engineering, Indian Institute of Technology Kharagpur and Former Director of IIT Kharagpur.

Abstract:

This lecture will explore the architecture and methodologies of Artificial Intelligence (AI), illustrating its role in modern education and for accelerating the integration and advancement of scientific knowledge and technological innovation. The discussion will cover the foundational frameworks of Artificial Intelligence and Machine Learning (AI/ML), with a specific focus on foundation and large language models. Through illustrations, the talk will demonstrate how AI enables cross-domain assimilation and reasoning. These capabilities rapidly generate recommendations that expedite the derivation of scientific equations and mathematical proofs, propose novel experiments, predict material compositions and optimized processes, and facilitate the creation of complex engineering designs. Furthermore, the presentation will examine AI's capacity for intelligent human interaction—particularly with students, researchers, creators, and innovators—frequently yielding insights and collaborative outcomes that surpass the capabilities of individual experts or groups. The role of AI in improving the quality of Education will also be discussed. Alongside these advancements, the lecture will critically address the potential pitfalls of AI/ML methodologies. It will highlight the profound risks associated with utilizing AI without sufficient knowledge and critical discernment, including the depletion of both physical and intellectual resources. Finally, the talk will outline the necessary pathways to improve current iterations of AI, ensuring that its future deployment remains inherently trustworthy, ethical, and responsible.

Bio-Sketch: -

Prof. Partha P. Chakrabarti completed his B.Tech in 1985 and PhD in 1988 from the Dept of Computer Science & Engg, Indian Institute of Technology (IIT) Kharagpur. He joined the same department as a faculty member in 1988 and is currently a senior Professor. From July 2013 he was the Director of the IIT Kharagpur till July 1, 2019. He was the Professor-in-Charge of the state-of-the-art VLSI Design Laboratory which he helped set up and has been the Dean of Sponsored Research and Industrial Consultancy at IIT Kharagpur. He set up the Incubation

Programme at IIT Kharagpur and was the Head of the Advanced Technology Development Centre. He was also the coDirector of the strategic General Motors-IIT Kharagpur Collaborative Research Laboratory on Electronics, Controls and Software. He held additional charge as Director IIT Patna and IIIT Kalyani. His areas of interest include Artificial Intelligence (AI), Algorithms, Formal Methods, CAD for VLSI & Embedded Systems and Fault Tolerance. Professor Chakrabarti has made fundamental scientific contributions in the area of Artificial Intelligence and Automated Reasoning and has applied the techniques to solve important synthesis, optimization and verification problems especially in VLSI Design and Embedded Systems. He has published two research monographs, more than 300 papers in international journals and conferences and supervised more than thirty PhD students. He has worked closely with Industry and Government and has successfully completed projects totaling worth more than several hundred crores with MHRD, DST, CSIR NMITLI, MeiT, DHI, INSA, Volkswagen Foundation, Intel, Synopsys, Google. National Semiconductors, General Motors, ONGC to name a few. He was the founding architect and overall coordinator of National Initiatives like the National Digital Library of India (<https://ndl.iitkgp.ac.in>), Global Initiative for Academic networks or GIAN (www.gian.iitkgp.ac.in), SPARC (sparc.iitkgpac.in), IMPRINT, PAN-IIT ONGC Initiative, that are emerging as game changers in India's education and research scenario. Dr Chakrabarti received the President of India Gold Medal (1985), the INSA Young Scientist Award (1991), Anil K Bose Award (1995), INAE Young Engineers Award (1997) and the Swarnajayanti Fellowship (1997-98), Shanti Swarup Bhatnagar Prize (2000), INAE Visweswarya Chair Professorship (2007-9), J.C. Bose Fellowship (2013) and many other awards. He has been elected a Fellow of the Indian National Science Academy, New Delhi and the Indian Academy of Science, Bangalore, Indian National Academy of Engineering and the West Bengal Academy of Science & Technology. He received a DSc Honoris Causa from Kalyani University in 2018 and Honorary DLitt from Techno India University in 2024 for contributions to Science and Technology.
