INDIAN INSTITUTE OF ENGINEERING SCIENCE AND TECHNOLOGY, SHIBPUR

1856

उत्तिष्ठत जाग्रत प्राप्य वरान् निबोधत

भारतीय अभियांत्रिकी विज्ञान एवं प्रौद्योगिकी संस्थान, शिवपुर

IHSCCP-2025

Integrating HPC, SLURM, CUDA, and Cybersecurity for AI in Power Utilities - A National Workshop

Department of Electrical Engineering, Indian Institute of Engineering Science & Technology (IIEST), Shibpur, Howrah, WB

14TH-18TH JULY, 2025

https://ihsccp2025.iiests.ac.in

National Research Foundation

TIS Labs
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INSTITUTION'S INNOVATION COUNCIL
(Ministry of HRD Initiative)
IIEST SHIBPUR

ABOUT IIEST, SHIBPUR:

IIEST, Shibpur (Erstwhile "Bengal Engineering College") is the first college to become Indian Institute of Engineering Science and Technology (IIEST) in India in 2014. The Institute has a rich history. It is empowering the nation since 1856. Considering the year of establishment, it is the 3rd engineering college in India but considering the year of graduation it is the 2nd oldest engineering college in India. It has 16 departments and 8 schools. It has over 250 faculty members and a student strength of over 4000.

ABOUT ELECTRICAL ENGINEERING DEPARTMENT:

The Department of Electrical Engineering at IIEST Shibpur is one of the oldest and among the best in the country providing dynamic and scholarly environments wherein students learn independently and in collaboration with others to develop a disciplined yet innovative approach to their careers as professional engineers, researchers or teachers. The department offers an 8-semester undergraduate B.Tech course, a 10-semester dual degree (B. Tech. and M. Tech.) course and 4-semester postgraduate M.Tech. degree course in Electrical Engineering. The department also offers research programs leading to a Ph.D. degree. The department started its journey way back in the year 1912-13 and produced its first batch of graduate electrical engineers in 1936 in the erstwhile Bengal Engineering College, Shibpur. Postindependence, when the nascent nation had just started building the power plants that have been instrumental in realizing the dreams of modern India, many of the visionaries, planners and implementers were the students of this department. The postgraduate degree was first offered in 1955 and the first Ph.D. Scholar from the department came out in 1959. The faculty members of the department are vibrant combinations of experience and innovation. Other than excellence in teaching, they have also proven their worth by publishing papers in peer-reviewed journals and prestigious international conferences, authoring text and reference books, producing patents and successfully implementing state-of-the-art R & D projects. In the last few years, several research projects with a funding of few crores have been executed (funding from Central Government agencies) However, more than 10 research projects have also been funded by non-Government agencies. At present, about 15 different funded projects are being executed in the department.

WORKSHOP OVERVIEW

This five-day workshop/seminar is designed to provide a comprehensive understanding of HighPerformance Computing (HPC), SLURM, CUDA, Artificial Intelligence (AI), Power System Load Dispatch, and Cyber Security for Power Systems. The program combines theoretical knowledge with practical hands-on experience, making it ideal for professionals and students alike.

WHO CAN BENEFIT

Researchers and Academics: Gain insights into the latest advancements in HPC, AI, and Cyber Security, and learn how to apply these technologies in research projects.

IT Professionals and Engineers: Enhance your skills in HPC, job scheduling with SLURM, and GPU computing with CUDA, which are essential for optimizing computational tasks.

Power System Engineers and Operators: Understand the intricacies of load dispatch and the role of AI in optimizing power systems, along with the importance of cyber security.

Students and Enthusiasts: Acquire foundational knowledge and hands-on experience in cuttingedge technologies, preparing you for future careers in these fields.

BENEFITS OF ATTENDING

- Comprehensive Learning: Cover a wide range of topics, from HPC and SLURM to CUDA, AI, and Cyber Security, providing a holistic understanding of these interconnected fields.
- Hands-on Experience: Participate in practical labs and simulations, allowing you to apply theoretical concepts in real-world scenarios.
- Networking Opportunities: Connect with industry experts, researchers, and fellow participants, fostering collaboration and knowledge sharing.
- Career Advancement: Equip yourself with the skills and knowledge needed to excel in high demand fields, enhancing your career prospects.
- Cutting-edge Knowledge: Stay updated with the latest trends and technologies, ensuring you remain at the forefront of your profession.

ORGANIZING COMMITTEE

Chief Patron: Prof. V.M.S.R. Murthy, Director, IIEST, Shibpur

Patron: Registrar, Dean (R&C), Dean (Academic), IIEST, Shibpur

Chairperson: Prof. Aparajita Sengupta, Head of the Department, Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB
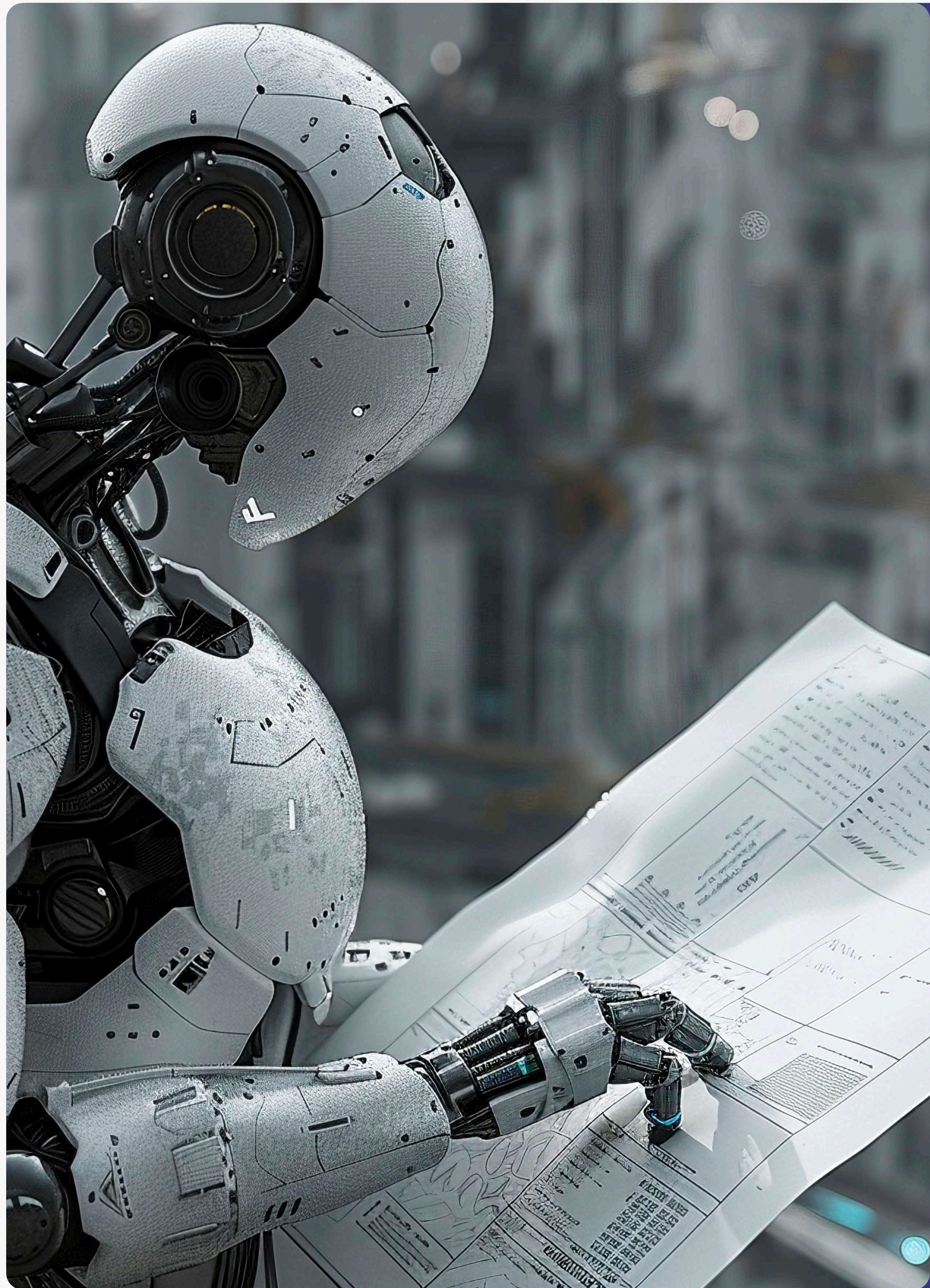
Convener: Dr. Amal Barman, Associate Professor, Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

Co-Conveners: Prof. Konika Das (Bhattacharya), Professor, Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

Dr.Reetam Mondal, Assistant Professor, Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

Dr.S. A. Qasim, Assistant Professor, Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

ORGANIZING MEMBERS

Prof. Chandan Kumar Chanda, Dr. Abhinandan De, Dr. Amalendu Bikash Choudhury, Dr. Paramita Chattopadhyay, Prof. Sukanya Parui, and Prof. Bhaskaran Barman

Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

ADVISORY COMMITTEE

Prof. Ashoke Sutradhar, Prof. Prasid Syam, Prof. Anindita Sengupta, Prof. Mainak Sengupta, Prof. Debabrata Roy, Prof. Debjani Ganguly, Dr. Kaushik Mukherjee, Dr. Atanu Banerjee, Dr. Suvarun Dalapati, Dr. Roshni Maiti, Dr. Mousumi Mukherjee, Dr. Anirudh Nath, Dr. Pritam Paral,

Department of Electrical Engineering (EE), IIEST, Shibpur, Howrah, WB

MODE OF THE WORKSHOP

A Five-Day Workshop on "Integrating HPC, SLURM, CUDA, and Cybersecurity for AI in Power Utilities: A Workshop (IHSCCP-2025)" will be conducted in physical mode in the Department of Electrical Engineering, IIEST Shibpur.

WORKSHOP SCHEDULE

Time \ Date	10 AM – 11 AM	11 AM – 12 NOON	12 PM – 1 PM		2 PM – 3 PM	3 PM – 4 PM	4 PM – 5 PM
14-07-25 (Monday)	Inaugural Session	Future of Computing, HPC – Mr. Arijit Mukherjee (TCS)	Data Analytics & AI in Energy, Resources and Utilities – Mr. Ambarish Ganguly (TCS)	Lunch Break	Energy, Resources and Utilities – Mr. Piyas Shubhra Nag (TCS)	SLURM & HPC – Dr. Sreeram PA (TIS Labs)	High Performance Computation, Mr. Souradip Banerjee (TIS Labs)
15-07-25 (Tuesday)	Grid Computation – Dr Gautam Bandopadhyay (EE, IIESTS)	Parallel Programming in Research – Dr Dwipesh Majumder (Phy, IIESTS)	AI for predictive & Fault Diagnosis Systems – Dr Jaya Sil (CST, IIESTS)	Lunch Break	Lab 1: Parallel Programming using OpenMP and OpenMPI (Dr S A Qasim/ Dr Amal Barman)		
16-07-25 (Wednesday)	Machine Learning – Prof. Susanta Chakraborty (CST, IIESTS)	AI case studies in EE – Dr Arijit Baral (IIT-ISM)	Image Processing & Robotics : Computational Issues – Dr Amitava Chatterjee (JU)	Lunch Break	Lab 2: CUDA, CPU, GPU Programming and SLURM (Dr Amal Barman/ Dr Konika Das Bhattacharjee)		
17-07-25 (Thursday)	PDE based Image Processing – Dr Abdul Halim (BU)	RLDC Operations & Activities – Mr Sajan George (ERLDC, Grid India)	SLDC Operations – Mr Santosh Kumar Kundu (DVC)	Lunch Break	Lab 3: Software for Numerical Computation, Virtualization and Remote Operation (Dr Reetam Mondal/ Dr Amal Barman)		
18-07-25 (Friday)	Cyber Resilient Image Transmission in Industry – Dr Kaushik Das Sharma (CU)	Cyber Security in Power Systems – Mr Krishnendu De (CESC)	Feedback and Laboratory Visit Session	Lunch Break	Valedictory Session		

REGISTRATION FEES

Delegates	Indian
Research Scholar/Students/Teaching Assistant	INR 1500
Faculty	INR 3000
Industry Person	INR 6000

Registration fee covers Tea, Snacks, Lunch (5-Days). It also includes Workshop Kit, Study Materials and Certificates. Registration Fee may be paid in favour of **"CONTINUING EDUCATION CENTRE - BESUS".** The Registration Fee can be paid electronically (e- payment) through SWIFT/NEFT/**UPI ID - 9432104410m@pnb.** After completing the full payment, please fill up the google form with all the payment details for registration at https://forms.gle/bcHqNDMVjxusQJTP9.

THE DETAILS OF BANK A/C ARE:

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SPONSORSHIPS / FUNDING AGENCY

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FOR MORE INFORMATION, PLEASE SCAN THE QR CODE FOR VISITING WEBSITE (LEFT), REGISTRATION IN GOOGLE FORM (CENTRE) AND FOR PAYMENT OF REGISTRATION FEES (RIGHT)

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