A Hybrid Faculty Development Programme (FDP) on

Supercomputing in Education: Applications and Implementation Strategies

(06th to 07th July Physical/Offline & 08th to 11th July Online (on Zoom), 2026)

Organized by

Electronics & ICT Academy, NIT Warangal

(Sponsored By Ministry of Electronics and Information Technology (MeitY, GoI)

In Association With

Ajay Kumar Garg Engineering College, Ghaziabad, Uttar Pradesh

Preamble:

"**Electronics & ICT Academy**" was set up at NIT Warangal with financial assistance from MeitY, GoI. The jurisdiction of this academy is Telangana, Andhra Pradesh, Karnataka, Goa, Puducherry and Andaman & Nicobar Islands. This academy role is to offer faculty development programmes (FDPs) in standardized courses and emerging areas of electronics, information communication technologies, training and consultancy services for Industry, curriculum development for Industry, CEP for working professionals, advice and support for technical incubation and entrepreneurial activities.

This Hybrid FDP is devoted to address the need to enhance the knowledge about the latest developments pertaining to **Supercomputing technologies and their applications in academia and research**. The FDP is being conducted at the **Department of Computer Science & Engineering, Ajay Kumar Garg Engineering College, Ghaziabad**.

Major Course Contents:

- **Introduction to Supercomputing**: *History and evolution of HPC, Flynn's taxonomy, parallel vs distributed computing, overview of PARAM Shavak and NSM infrastructure in India.*
- **Parallel Programming Models**: *MPI, OpenMP, CUDA programming paradigms; task parallelism vs data parallelism; memory hierarchies and cache optimization for HPC applications.*
- **Supercomputing in Scientific Research & Education**: *HPC for computational fluid dynamics, bioinformatics, climate modeling; integrating supercomputing into UG/PG curriculum; case studies from IITs and NITs using NSM resources.*
- **GPU Computing and Accelerated AI**: *NVIDIA GPU architecture, CUDA kernel programming, cuDNN, TensorRT; accelerating deep learning training with multi-GPU clusters; benchmarking on PARAM Shavak 2.0.*
- **Cloud HPC, Containerization and Job Scheduling**: *AWS/GCP HPC instances vs on-premise PARAM clusters; Docker and Singularity for reproducible research; SLURM workload manager; cost-benefit analysis for academic institutions.*
- ***Policy, Procurement and NSM Roadmap:*** *How to apply for PARAM Shavak under NSM Phase-III; DST/MeitY funding avenues; ROI analysis; implementation roadmap for engineering colleges.?*
- **Hands-on Lab: HPC Job Submission and Performance Profiling**: *Submitting parallel jobs via SLURM, profiling with gprof/nvprof, running a deep learning workload on a GPU node, performance visualization using TensorBoard.*

Faculty conducting this programme:

The FDP will be conducted by faculty members from AKGEC and invited resource persons from IITs/NITs/IIITs and C-DAC. NSM Master Trainers and HPC industry experts are also expected to deliver hands-on sessions as part of the programme.

Eligibility:

The program is open to the faculty of engineering colleges, MCA colleges and other allied disciplines in India. Industry personnel working in the concerned/allied discipline can also attend.

Registration Fee Particulars:

Research Scholars/Faculty	**Rs. 1000/-**
Industry Participants	**Rs. 2,250/-**

Participants need to pay the registration fee **online** using the following details:

Online Transfer Details
Account Name: Akhilesh Verma (Coordinator)
Account No: 508010190049
IFSC: KKBK0005295 Or UPI on 9971897996@ybl
Bank and Branch: Kotak Mahindra Bank, Navyug Market Ghaziabad

How to apply:

Participants are required to fill the online registration form by clicking on the following link: Registration **at** https://sites.google.com/akgec.ac.in/supercomputing-in-education/home

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 50 (hundred). The list of selected participants will be intimated through e-mail. In case a candidate is not selected, the DD/online payment will be sent back. Candidates will be issued satisfactory certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOI norms.

Important dates (Tentative):

Last date of application	**30.06.2026 (11:59 PM)**
Selection List by E- mail	**02.07.2026 (11:59 PM)**
Duration	**06th to 09th July Online** **10th to 11th July Offline**

About NIT Warangal:

National Institute of Technology, Warangal, is the first among 17 RECs set up as a joint venture of the Government of India and the state government. Over the years, the college has established itself as a premier Institute imparting technical education of a very high standard, leading to B.Tech degrees in various branches of engineering, M.Tech., and Ph.D. programmes in various specializations. All B. Tech and M. Tech programmes of NIT Warangal are NBA accredited.

About Ajay Kumar Garg Engineering College::

Ajay Kumar Garg Engineering College (AKGEC), Ghaziabad, is a premier AICTE-approved institution affiliated to Dr. A.P.J. Abdul Kalam Technical University, Lucknow. Established in 1998, the college offers B.Tech, M.Tech, MBA, and MCA programmes across disciplines of Engineering and Management. AKGEC is an NAAC 'A' accredited institution and has NBA accreditation for multiple B.Tech programmes. The CSE Department is an NSM-recognized training centre and actively supports research, innovation, and faculty development.

Coordinator (s):

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