

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA
Department of Computer Science & Engineering

Guru Nanak Dev Engineering College Inaugurates High-Performance Computing GPU Cluster Powered by NVIDIA H100 NVL

Ludhiana, 2 June 2026 — Guru Nanak Dev Engineering College (GNDEC), Ludhiana, today inaugurated its new High-Performance Computing (HPC) GPU cluster and associated research services, establishing a dedicated artificial intelligence, machine learning, and scientific-computing facility for its research community. The cluster is built around the NVIDIA H100 NVL and is hosted by the Department of Computer Science & Engineering at hpc.gndec.ac.in.

The facility was inaugurated by **Dr. Sehijpal Singh**, Principal of GNDEC, who served as Chief Guest, in the gracious presence of **Dr. Kiran Jyoti**, Head of the Department of Computer Science & Engineering, who attended as Guest of Honour. The Heads of Departments of all other departments of the College were also present at the ceremony, held at the Department of Computer Science & Engineering.

The College recognised the faculty members who led the acquisition of the facility — **Dr. Kanwardeep Singh** (Electrical Engineering), **Dr. Parminder Singh** (CSE), **Dr. Jasbir Singh Saini** (CSE), and **Dr. Satinderpal Singh** (CSE) — for bringing advanced GPU computing infrastructure to the campus.

The HPC GPU Cluster has been established under the FIST (Fund for Improvement of S&T Infrastructure) grant to enhance the institution's capabilities in high-performance computing, artificial intelligence, data analytics, simulation, and advanced research.

A research-grade compute platform

At the heart of the cluster is an NVIDIA H100 NVL GPU based on the Hopper architecture, featuring 94 GB of HBM2e memory, 16,896 CUDA cores, 528 fourth-generation Tensor Cores, and memory bandwidth of 3.9 TB/s, delivering up to 3,958 TFLOPS of FP8 compute. The GPU is paired with a dual-socket Intel Xeon Gold 5418Y CPU (24 cores / 96 threads), 61 GiB of DDR5 system memory, and 5.2 TB of storage. Fourth-generation NVLink and PCIe 5.0 provide up to 600 GB/s of bidirectional bandwidth for high-throughput workloads, while a CUDA 13.0 software stack supports PyTorch, TensorFlow, JAX, ONNX, and RAPIDS out of the box.

The infrastructure is intended to support a broad range of research, including deep learning and AI, large language model research, computer vision, scientific simulation (CFD, finite element analysis, climate modelling, and physics-informed neural networks), computational biology, data science and analytics, signal and image processing, and security and cryptography.



Services now live

With the inauguration, the cluster's services are now available to users. These include SSH terminal access using GNDEC credentials, browser-based GPU notebooks via JupyterHub for interactive research and coursework, batch GPU job submission through the SLURM scheduler, and containerised environments using Docker and Singularity images preloaded with PyTorch, TensorFlow, RAPIDS, and CUDA.

Faculty, research scholars, post-graduate and under-graduate students, and external researchers may request access through the HPC service request portal at hpc.gndec.ac.in/services. Requests are reviewed by the HPC coordinators and typically responded to within two to three working days.

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