

HANDS-ON WORKSHOP ON BASICS OF HIGH PERFORMANCE COMPUTING

November 02 - 05, 2023

Organized by

Center for Computational Data Sciences, IIT Kharagpur
under the aegis of National Supercomputing Mission

Objective and Scope

This workshop will introduce the participants to the basics of high-performance computing and will also train them on using different parallel programming APIs. This workshop aims to cover the concepts of parallel programming models, efficient programming methodologies, and performance tools with the objective of developing highly efficient parallel programs. The workshop will consist of lectures and hands-on sessions for exploring different parallel programming paradigms using OpenMP, MPI, and CUDA along with application of HPC in machine learning algorithms. The workshop will also give them an opportunity to get training on the heterogeneous acceleration platform oneAPI, from an expert team of Intel Corporation.

General Information

- The last date for receiving the online application: October 18, 2023
- Due to limited physical capacity, the sessions will be conducted in a hybrid format. Fill out the Google form with your mode preference.
- Selected outside offline participants will be provided free accommodation on shared basis
- The applicants selected for offline mode participation will be informed through emails before October 25, 2023.

Keynote Speakers

- **Prof. Pabitra Mitra**
IIT Kharagpur
- **Dr. Somnath Roy**
IIT Kharagpur
- **Dr. Pralay Mitra**
IIT Kharagpur
- **Dr. Soumyajit Dey**
IIT Kharagpur
- **Ashish P Kuvelkar**
Senior Director, C-DAC
- **Jayaraman Mahalingam**
AI/oneAPI Academia Tech Program APJ Geo Lead, Intel Corporation
- **Shriram Vasudevan**
Lead - Technical Evangelist, APJ, SP&E, Intel Corporation

How to apply

- Email: ccdssoffi@ccds.iitkgp.ac.in
- Phone: 03222-288301
- Registration Link: [Click here](#)

(Participants from institutions other than IIT Kharagpur will pay a non-refundable registration fee of Rs. 600)

Who can attend

- Faculty Members
- Postdoctoral fellows
- Research Scholars
- Project fellows
- PG students
- B.Tech. students

Topics

- Introduction to high performance computing (HPC) architecture and usages
- Parallel algorithms and performance metrics
- Shared memory parallel programming using OpenMP
- OpenMP programming hands-on
- Distributed memory parallel programming using MPI
- MPI programming hands-on
- Hybrid programming
- Introduction to GPU computing and CUDA
- CUDA hands-on
- Introduction to OneAPI
- Profiling and porting codes to HPC platforms using OneAPI
- Application of HPC and GPUs to AI-ML

