

FACULTY DEVELOPMENT PROGRAM (FDP) on HIGH PERFORMANCE COMPUTING (HPC)

on

9th to 13th October, 2017

at



Indian Institute of Technology Mandi, Kamand Campus, Mandi, H.P. 175005, India

funded and organized by

NATIONAL SUPERCOMPUTING MISSION (NSM)



C-DAC, Pune



and

IIT Mandi.

Currently Confirmed Resource Persons:

Prof. T.A. Gonsalves, Director, Professor (School of Computing and Electrical Engineering), IIT Mandi
Prof. B.D. Chaudhary, Dean (Acad.), E. Professor (School of Computing and Electrical Engineering), IIT Mandi
Prof. N. Karmarkar, Distinguished Professor (School of Computing and Electrical Engineering), IIT Mandi
Dr. Prasanth P. Jose, Chairperson (School of Basic Sciences), IIT Mandi
Dr. Anil K. Sao, Associate Professor (School of Computing and Electrical Engineering), IIT Mandi
Dr. Mathias Krause, Senior Research Fellow, (Numerical Methods for Partial Differential Equations), Karlsruhe Institute of Technology, Germany
Dr. Dhiraj V. Patil, Assistant Professor (School of Engineering), IIT Mandi
Dr. A.D. Dileep, Assistant Professor (School of Computing and Electrical Engineering), IIT Mandi
Dr. Sriram Kailasam, Assistant Professor (School of Computing and Electrical Engineering), IIT Mandi
Resource Person(s) from C-DAC, Pune

Faculty Development Program in HPC

Introduction:

Computational research can act as a fabric that connects different domains of knowledge such as various branches of engineering (e.g. Computer Science and Engineering, Mechanical Engineering etc.), physical, chemical, as well as biological sciences. The goal of this workshop is to provide the attendees (which are the faculty members from engineering institutions around IIT Mandi) with a focused and in-depth platform for presentations, discussion and interaction in the field of *high performance computing* (HPC). "High Performance Computing most generally refers to the practice of aggregating computing power in a way that delivers much higher performance than one could get out of a typical desktop computer or workstation in order to solve large computational problems in science, engineering, or business."

In the recent years, major breakthroughs are achieved in various artificial intelligence fields e.g. use of deep learning, image processing and speech recognition (self-driving cars). Here, the computational performance have reached levels not seen before special thanks to the GPU technology and heterogeneous computing environment with multi-core machines. Hence, this workshop is to train the teachers (faculty members) in the field of HPC and introduce them with various parallel programming models.

Objectives:

- To introduce various parallel programming models, such as, OpenMP (Open Multi-Processing) for shared memory machines, MPI (Message Passing Interface) for distributed memory machines, and CUDA (Compute Unified Device Architecture) a parallel computing platform and application programming interface (API) model created by Nvidia for GPU technology
- To conduct hands-on on these programming models
- To introduce parallel programming clusters and heterogeneous architectures

Your Participation in Faculty Development Program in HPC:

- The workshop is open for faculty members working in government, semi-government, private engineering colleges and higher learning institutes in and around Mandi (Himachal Pradesh).
- It is expected that the participants have good knowledge of **C, Linux and vim (editor)**.
- The home institutes of the participants should be from following neighboring states: **Himachal Pradesh, Punjab, Uttarakhand, Jammu and Kashmir, Chandigarh and Haryana**. Participation from other Indian states is welcome and subject to availability.
- Participants should upload the letter of permission to participate obtained from their respective department heads or heads of the Institute.
- Participants should arrange for their own travel up to IIT Mandi, Kamand Campus.
- The accommodation of the participants has been arranged in the guest house of IIT Mandi free of charge for 6 nights from 8th October 2017 to 14th October 2017.
- No registration fees will be charged for participants for this FDP.
- Number of Participation is limited to 30.
- Participants are requested to do online registration and upload CV and permission letter from heads in the link provided.
- Participants are requested to bring their own laptops with pre-installed Linux OS.

General Information about IIT Mandi (Himachal Pradesh):

Nestled in the Shivalik Range of the Himalayas, away from the bustle of the metropolis, a new abode of learning, IIT Mandi, has germinated in 2009. The focus of IIT Mandi is to spearhead cutting edge research and development of technologies needed by the world in the years to come. Research groups will work together in creating and harnessing the newest technologies needed to serve the people of the region and the country, and to tackle problems of global importance. In order to achieve excellence and high impact locally and globally, IIT Mandi focusing on strongly foster inter-disciplinary R&D.

How to Apply:

The enthusiastic participants are requested to complete the online registration and upload CV, permission letters from the respective college heads at following webpage. Please note that you require Gmail account to use this Google form.

Online registration form for FDP on HPC :

<https://sites.google.com/site/fdphpciitmandi/products-services>

Important Dates:

Following are important dates for this workshop.

Workshop Dates: 9th October 2017 to 13th October, 2017

Final Date for registration: 1st October 2017

Date of Announcement of results: 3rd October 2017

Announcement of Final Schedule: 6th October 2017

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