

PARALLEL COMPUTING SUMMER SCHOOL UNDER TEQIP III

MAY 27TH - 31ST, 2019



Organised by

Department of Computer Engineering
and Information Technology

College of Engineering Pune (COEP)
Wellesly Road, Shivajinagar,
Pune - 411005

in association with

NSM NATIONAL SUPERCOMPUTING MISSION
INFRASTRUCTURE APPLICATIONS R&D HRD

ABOUT COEP

College of Engineering, Pune (COEP), established in 1854, is a nationally respected leader in technical education. Institute runs ten Under Graduate, twenty four Post Graduate and Ph.D programmes. In 2003, the college got autonomous status, thus giving it freedom to set its own curricula in association with industry. This has been the biggest change as far as pedagogy at COEP is concerned. COEP's vision is to be a Value based Globally recognized Institution ensuring Academic Excellence and Fostering Research, Innovation and Enterprenurial attitude. It has embarked on its journey with five core values of Strength, Truth, Endurance, Ethics, Reverence for all. COEP is top tier institute in India that boasts 164+ years of academic excellence, scientific breakthroughs and high tech innovation.

ABOUT DEPARTMENT OF COMPUTER ENGINEERING & INFORMATION TECHNOLOGY

The Department of Computer Engineering and Information Technology is one of the youngest department, established in 1992, has produced several outstanding engineers and technologists. Their work has brought fame and laurels to the department, to the college, and the country.

The Department celebrated its silver Jubilee in academic year 2016-17. The department is having close interaction with various industries, R&D organization and higher learning centres of education in and around Pune. The Department has research in the area of High Performance Computing, Machine Learning & Deep Learning Data mining, Cloud Computing, Graphics and Visualization, Network security and Information Security, AI and Natural Language Processing. The Department is accredited by National Board of Accreditation(NBA) for five years. The Department has CSI Student Professional Chapter that organizes different activities like expert talks, workshops, etc for technical community.

ABOUT SUMMER SCHOOL

Multicore processor architecture has become dominant in today's computing environment. Multicore processors are used in different computing environments starting from personal mobile devices to large scale servers. These architectures facilitate to parallelize different applications. The underlying computing capacity can be utilized by writing code with parallel programming constructs.

This summer school focuses on different aspects of Parallel Computing. Parallelism exists in software as well as hardware. The summer school aims to share different parallel programming environments like Threading, OpenMP, MPI, CUDA and its usage in different High Performance Computing areas. The thrust research areas like Deep Learning GPU Architectures, usage of HPC Clusters in AI and related tools are the topics of discussion.

ABOUT NSM

The Mission envisages empowering our national academic and R&D institutions spread over the country by installing a vast supercomputing grid comprising of more than 70 high-performance computing facilities. Academic and R&D institutions as well as key user departments/ministries would participate by using these facilities and develop applications of national relevance. The Mission also includes development of highly professional High Performance Computing (HPC) aware human resource for meeting challenges of development of these applications. The Mission implementation would bring supercomputing within the reach of the large Scientific & Technology community in the country and enable the country with a capacity of solving multi-disciplinary grand challenge problems.

OBJECTIVES

- To explore different Parallel Programming techniques.
- To explore Graphics Processing Unit (GPU) Architecture and CUDA Programmin
- To understand role of GPU in Deep Learning & AI
- To motivate the research community for exploiting the associated potential areas of research

RESOURCE PERSONS

- Experts from Higher Learning Centres like IISc, IIT, IIIT will deliever sessions in the summer school
- Experts from industries like Nvidia, Intel, will give hands on sessions and demo of different skillset.
- Experts from R&D organizations like C-DAC will deliever hands on session and demo.

WHO SHOULD ATTEND?

Faculties of Computer Engineering, Information Technology, Electronics and Telecommunication Engineering can attend the Summer School.

SUMMER SCHOOL TOPICS

- Parallel Computer Architecture : An Overview
- Performance Evaluation of Computing Systems
- Multithreading
- OpenMP
- Graphics Processing Unit (GPU)
- Compute Unified Device Architecure (CUDA) Programming
- GPU for Deep Learning & AI
- Deep Learning Architecture- Case Study
- Message Passing Interfaces (MPI)
- Software Tools to Exploit HPC Performance for HPC and AI Applications

PATRONS

Prof. B. B. Ahuja, Director, COEP
Prof. M. S. Sutaone, Deputy Director, COEP
Prof. Jibi Abraham, Dean Academics, COEP
Prof. S. N. Madhekar, Dean R&D, COEP
Prof. S. L. Patil, Dean Alumni & International Relations, COEP
Prof. S. N. Sapali, Dean Quality Assurance, COEP
Prof. M. J. Rathod, Dean Faculty, COEP
Dr. P. R. Dhamangaonkar, Associate Dean Student Affairs, COEP

TEQIP-COORDINATOR

Dr. V. N. Pande

HEAD OF DEPARTMENT

Dr. V. Z. Attar, Computer & IT

LAB INFRASTRUCTURE

Mr. S. S. Kumbhar, Data Center Incharge

COORDINATORS

Mr. Amit D Joshi
Mr. Suraj T. Sawant

ORGANIZING COMMITTEE

Mr. V. K. Khatavkar
Mr. A. R. Khobragade
Ms. V. V. Kamble
Mrs. N. V. Mahajan

IMPORTANT DATES

Last Date to Register for Summer School : 15th May 2019
Summer School Dates : 27th -31st May 2019

REGISTRATION

- There are no registration fees for the participants from TEQIP funded institutes.
- There are registration fees of Rs 800/- for the participants of other institutes. The registration fees have to be paid through a demand draft in favour of "Director, College of Engineering Pune".

The registration link is:

<https://forms.gle/Get12mFAixBzFDqA6>

WEBSITE

<http://www.coep.org.in/PCSS/>

ACCOMODATION & TRAVEL

- Accommodation can be provided to outstation participants in COEP hostel with minimum charges depending on availability.
- Participants have to bear the accomodation charges and dinner expenses on their own.
- No Travelling Allowance will be provided to the participants of the summer school.
For Accommodation Contact: Mr. S. T. Sawant

CONTACT DETAILS

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