

Supercomputer Education and Research Centre (SERC)

presents

Workshop on High Performance Computing in the Agriculture Domain

July 14 to July 16, 2021



under the scheme

National Supercomputing Mission (NSM)
Govt. of India

co-hosted by:

 IIT Indore	 ICAR-IISR Indore	 Mahindra University Mahindra University Hyderabad	 C-DAC Pune	 IISc Bangalore	 IIT Kharagpur
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It gives us immense pleasure to inform you that the Workshop on High Performance Computing (HPC) in the Agriculture Domain under the National Supercomputing Mission (NSM) from Supercomputer Education and Research Centre (SERC) will be hosted by IIT Indore, ICAR-IISR Indore, and Mahindra University Hyderabad in collaboration with C-DAC Pune, IISC Bangalore, IIT Kharagpur from 14 July 2021 to 16 July 2021 in virtual mode.

This workshop aims to bring together researchers, engineers, industry experts, students, and practitioners to make them aware of the latest HPC technologies for easing practical/research work in the area of agriculture domain. Recent developments in computational techniques in various domains of science and engineering have been strongly linked with the efficient utilization of HPC resources. Therefore, it is essential to impart HPC training to the application domain researchers.
Objectives of the Workshop

- 1) To introduce various parallel programming models, such as CUDA, cuML, a parallel computing platform and application programming interface (API) model created by Nvidia for GPU technology.
- 2) To introduce parallelisation in Python, which is the most popular programming language used in industry.
- 3) Currently to conduct hands-on practice on these programming models.
- 4) To introduce parallel programming clusters and heterogeneous architectures.
- 5) Using HPC in the field of Agriculture research.
- 6) Demonstration of Big Data algorithms for Genomics.
- 7) Layout the foundation of the Agriculture Grid ecosystem.

No Registration Fee

Fill the Registration details: <https://forms.gle/fBRzkjpoLFKqQfcU9>

Bar code:



The last date of Registration: **July 10, 2021**

The meeting link will be intimated on registered e-mail: **July 11, 2021**

Contact:

Dr. Aruna Tiwari, Associate Professor, Computer Science and Engineering, IIT Indore

Mail your queries at: atworkshop.nsm@gmail.com

Organizers:



Dr. Aruna Tiwari
IIT Indore



Dr. Milind Ratnaparkhe
ICAR-IISR Indore



Dr. Neha Bharill
Mahindra University
Hyderabad



Om Prakash Patel
Mahindra University
Hyderabad

Patron



Prof. N.K Jain
Director, IIT Indore

Chief Guest



Prof. D.B. Phatak
BOG Chairman, IIT
Indore

Guest Of Honours



Prof. V.K. Tewari
Director, IIT Kharagpur



Prof. Srikanth Sastry
Jawaharlal Nehru
Centre for
Advanced Scientific
Research



Prof. Rajat Moona
Director, IIT Bhilai

Special Guests



Dr. Nita Kahndekar
Director, ICAR- IISR
Indore



Prof. Narendra S. Chaudhari
IIT Indore



Prof. Yajulu Medury
Vice Chancellor,
Mahindra University
Hyderabad

Panel Discussion

Title: Impact of HPC in sustainable Agriculture Growth in India.



Col. A K Nath (Retd.)
Executive Director
(Corporate Strategy and C-DAC
Pune)



Arundhati Misra,
Group Director,
AMHTDG, EPSA,
SAC - ISRO



Dr. Anil Rai
Head (A) & Professor
Bioinformatics, ICAR-Indian
Agricultural Statistics
Research, Pusa, New Delhi.



**Dr. Rajeev K.
Varshney**
Research Program
Director-Genetic Gains,
ICRISAT, Hyderabad



Prof. Pabitra Mitra
IIT Kharagpur



Prof. Ashwani Pareek
Jawaharlal Nehru
University, New Delhi

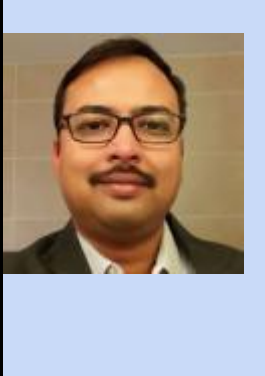


Dr. Kapil Ahuja
IIT Indore

Prof. V.K. Tewari, Director, IIT Kharagpur
Prof. Rajat Moona, Director, IIT Bhilai
Dr. Nita Kahndekar, Director, ICAR- IISR Indore
Prof. Narendra S. Chaudhari, IIT Indore

Keynote Speakers

 Prof. Sathish Vadhiyar Professor Department of Computational and Data Sciences (CDS) Supercomputer Education and Research Centre (SERC) Title of the talk: High Performance Computing	 Mr. Megh Makwana Data Scientist at NVIDIA Organizing Hands on Session: Title of the talk: Accelerating Data Science for Agriculture Domain
 Dr. Dinesh Kumar Principal Scientist (Biotechnology) at ICAR-IASRI, New Delhi Karnal, Haryana, India Title of the talk:	 Dr. Muthukumarasamy Karthikeyan Senior Principal Scientist Chemical Engineering and Process Development (CEPD), CSIR National Chemical Laboratory, Pune Title of the talk:
 Dr. Prashanth N Suravajhala Senior Scientist, Systems Biology Department of Biotechnology and Bioinformatics Birla Institute of Scientific Research Title of the talk:	 Prof. P. Krishan Reddy IIIT Hyderabad Title of the talk: Towards building farm-specific advisory systems to improve the efficiency of every farm
 Dr. Somsubhra Chakraborty Assistant Professor Agricultural and Food Engineering IIT Kharagpur Title of the talk: Applications of Advanced Sensors and AIML in Soil Management	 Prof. Arya K. Bhattacharya Dean of Research and Professor in the School of Engineering Sciences Mahindra University Hyderabad Title of the talk: Design of hybrid CPU-GPU architecture parameters enabling training of CNNs with Evolutionary Optimization

	Dr. P. Ganguly Agricultural and Food Engineering IIT Kharagpur Title of the talk: Big data in Natural Hazard Modelling: Challenges and Opportunities for Machine Learning		Mr. Ashish Kuvelkar Senior Scientist, Systems Biology Department of Biotechnology and Bioinformatics Birla Institute of Scientific Research Title of the talk: Parallel Computing – The essential aspect of High-Performance Computing.
	Mr. Navin K. C. Twarakavi Research Scientist IBM Research Title of the talk:		Dr. Milind Ratnaparkhe Senior Scientist ICAR-IISR Indore Title of the talk: Application of high-performance computing in plant genomics and crop improvement.
	Mr. Amit Saxena Joint Director HPC Medical and Bioinformatics Applications Group C-DAC Pune Title of the talk: Quantum Computing applications in Agriculture		