

2nd Workshop on Education for High Performance Computing (EduHiPC -2019)

High Performance Computing (HPC) and, in general, Parallel and Distributed Computing (PDC) has become pervasive, from supercomputers and server farms containing multicore CPUs and GPUs, to individual PCs, laptops, and mobile devices. Therefore, it is important for every computing professional (and especially every programmer) to understand how parallelism and distributed computing affect problem solving. It is essential for educators to impart a range of PDC and HPC knowledge and skills at multiple levels within the educational fabric woven by Computer Science (CS), Computer Engineering (CE), and related computational curricula including data science. Companies and laboratories need people with these skills, and, as a result, they are finding that they must now engage in extensive on-the-job training. Nevertheless, rapid changes in hardware platforms, languages, and programming environments increasingly challenge educators to decide what to teach and how to teach it, in order to prepare students for careers that are increasingly involving PDC and HPC. EduHiPC aims to provide a forum that brings together academia, industry, government, and non-profit organizations - especially from India, its vicinity, and Asia - for exploring and exchanging experiences and ideas about the inclusion of high-performance, parallel, and distributed computing into undergraduate and graduate curriculum of Computer Science, Computer Engineering, Computational Science, Computational Engineering, and computational courses for STEM and business and other non-STEM disciplines.

The 2nd EduHiPC workshop invited unpublished manuscripts from academia, industry, and research institutes on topics pertaining to the teaching of PDC/HPC topics. Methods, pedagogical approaches, tools, and techniques, employers' experiences with and expectation of the level of PDC proficiency among new graduates, issues and experiences to address gender gap, teaching of HPC and Big Data Analytics across STEM disciplines that have the potential for adoption across the broader community are of particular interest. The emphasis of the workshop was on undergraduate education.

This year EduHiPC presented a keynote on "Getting Ready for the Emerging Challenge of Massively Parallel Programming Paradigm" by Vijay Bhatkar, Chancellor, Nalanda University and Chairman Technical Advisory Committee, C-DAC, India. The program also presented following three invited talks: 1) "Future of Parallel Computing" by Henry Gabb of Intel, USA, 2) "The Role Semiautomatic Assessment and Feedback in Teaching Early Programming Classes" by Prasun Dewan of University of North Carolina, USA, and 3) "Reskilling to match the needs of Exascale Architectures" by Bharatkumar Sharma, Senior Solution Architect, South Asia, Nvidia.

We received 11 regular paper submissions of which 5 were carefully selected (each submission receiving at least four reviews). The selected papers covered topics ranging from programming frameworks and tools to PDC instruction techniques and experiences through a broad range of courses as well as through targeted areas such as data analytics in cyber security. In addition to the talks on these papers, the EduHiPC program also featured multiple poster presentations that cover the same wide range of topics.

Visit the EduHiPC-19 website at <https://grid.cs.gsu.edu/~tcpp/curriculum/?q=eduhipc19> for the complete online proceedings, including the presentation slides of the contributed papers and all the posters.

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