ICFEC 2017 Keynote

Computing in the Continuum: Harnessing Pervasive Data Ecosystems

Prof. Manish Parashar

Abstract:
The exponential growth of digital data sources enabled by the IoT coupled with the ubiquity of non-trivial computational power, at the edges, in the core and in-between, for processing this data have the potential for fundamentally transforming our ability to understand and manage our lives and our environment. One can envision data-driven and information-rich pervasive ecosystems that seamlessly and opportunistically combine data and computing power to model, manage, control, adapt and optimize virtually any realizable subsystem of interest — examples exist in diverse application areas from disaster management and recovery to optimizing everyday processes and improving quality of life.

In this talk I will explore computing in the continuum – a computing paradigm that can opportunistically leverage heterogeneous, complex and loosely connected data and computing resources at the edges to process data in-situ and in-transit, transforming it into knowledge and insights that are actionable. Using examples from our work in the CometCloud project, I will present research challenges as well as some initial solutions towards realizing this paradigm.

Bio:
Manish Parashar is Distinguished Professor of Computer Science at Rutgers University. He is also the founding Director of the Rutgers Discovery Informatics Institute (RDI2). His research interests are in the broad areas of Parallel and Distributed Computing and Computational and Data-Enabled Science and Engineering. Manish is founding chair of the IEEE Technical Consortium on High Performance Computing (TCHPC), and serves on the editorial boards and organizing committees of a number of journals and international conferences and workshops. He has also deployed several software systems that are widely used. He has received several awards for his research and leadership. Manish is Fellow of AAAS, Fellow of IEEE/IEEE Computer Society and ACM Distinguished Scientist. For more information please visit http://parashar.rutgers.edu/.