Welcome Message

Csaba Andras Moritz

I am very pleased to introduce the first issue of the IEEE Transactions on Multiscale Computing Systems (TMSCS).

TMSCS is a peer-reviewed publication devoted to computing systems that exploit characteristics such as multi-scale and multi-functionality. These systems may be implemented across diverse physical layer paradigms, potentially encompassing emerging nanoscale assembly, nanoscale device technologies, as well as more conventional microscale approaches. Various physical paradigms may include molecular, quantum, semiconductor, magnetic, and other physical, chemical, and biological directions. The underlying architectural principles can be diverse, ranging from cognitive models, to approximate and Von Neumann machines. They can utilize heterogeneous hardware and software functionalities as well as inference. They can be based on operating principles and models that are valid within but not necessarily across their respective scales and computational domains.

With the emergence of new technologies and associated systems that often are interfaced with conventional system modules, multi-scale and multi-functionality system aspects are expected to be increasingly common. Such systems have the promise of yielding significant improvements in performance, power efficiency, and cost, as well as enable applications that are unfeasible today. We believe that this publication will provide a high value to professionals and researchers from diverse specialties that need to understand the opportunities and challenges involved in such complex multi-faceted systems. While there are other IEEE publications addressing individual system components and technologies, the unique focus on multi-scale and multi-functionality sets TMSCS apart.


It is my great pleasure to introduce the first editor-in-chief for the journal, Professor Partha Pande, who is the Boeing Centennial Chair in computer engineering in the School of Electrical Engineering & Computer Science at Washington State University. He is a widely recognized and acknowledged leader in the design of VLSI systems and architectures. His brief bio follows below.

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Partha Pratim Pande received the MS degree in computer science from the National University of Singapore and the PhD degree in electrical and computer engineering from the University of British Columbia, Vancouver, BC, Canada. He is a professor and a holder of the Boeing Centennial Chair in computer engineering at the School of Electrical Engineering and Computer Science, Washington State University, Pullman, Washington. His current research interests include novel interconnect architectures for multicore chips, on-chip wireless communication networks, and hardware accelerators for biocomputing. He is currently the editor-in-chief (EIC) of the IEEE Transactions on Multi-Scale Computing Systems (TMCS) and an associate editor-in-chief (A-EIC) of the IEEE Design and Test (D&T). He is on the editorial boards of the IEEE Transactions on Very Large Scale Integr. (TVLSI), ACM Journal of Emerging Technologies in Computing Systems (JETC), and Sustainable Computing: Informatics and Systems (SUSCOM). He is the technical program committee chair of the IEEE/ACM Network-on-Chip Symposium 2015. He also serves on the program committees of many reputed international conferences, like DAC, ICCAD, CODES-iSSS, etc. He received the US National Science Foundation (NSF) CAREER Award in 2009 and the Anjan Bose Outstanding Researcher Award from the College of Engineering, Washington State University in 2013.

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