

GABB 2016 Keynote

Massive-scale streaming analytics

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Abstract: Emerging real-world graph problems include: detecting community structure in large social networks; improving the resilience of the electric power grid; and detecting and preventing disease in human populations. Unlike traditional applications in computational science and engineering, solving these problems at scale often raises new challenges because of the sparsity and lack of locality in the data, the need for additional research on scalable algorithms and development of frameworks for solving these problems on high performance computers, and the need for improved models that also capture the noise and bias inherent in the torrential data streams. In this talk, I will discuss opportunities and challenges in massive data-intensive computing for applications in computational science and engineering.

About the Speaker: David A. Bader is a full professor and chair of the School of Computational Science and Engineering, College of Computing at Georgia Institute of Technology and Executive Director of High Performance Computing. His research is supported through highly-competitive research awards, primarily from NSF, NIH, DARPA, and DOE, and his main areas of research are in parallel algorithms, combinatorial optimization, massive-scale social networks, and computational biology and genomics. He received his Ph.D. in from The University of Maryland, is a Fellow of the IEEE and AAAS, a National Science Foundation CAREER Award recipient, and has received numerous industrial awards from IBM, NVIDIA, Intel, Cray, Accenture, Oracle/Sun Microsystems, and Microsoft Research. He serves as a board member of the Computing Research Association (CRA), on the NSF Advisory Committee on Cyberinfrastructure, on the Council on Competitiveness High Performance Computing Advisory Committee, on the IEEE Computer Society Board of Governors, and on the Steering Committees of the IPDPS and HiPC conferences and is the editor-in-chief of IEEE Transactions on Parallel and Distributed Systems (TPDS). Dr. Bader is a leading expert on multicore, manycore, and multithreaded computing for data-intensive applications such as those in massive-scale graph analytics and has co-authored over 130 articles in peer-reviewed journals and conferences.
