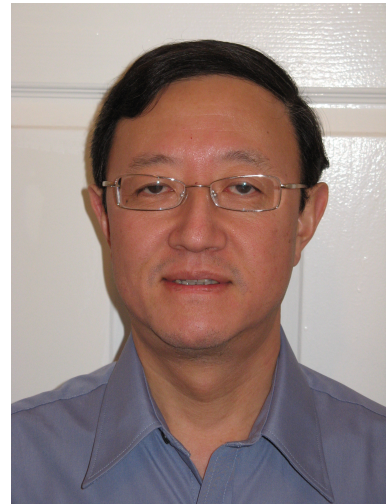# PARALLEL AND DISTRIBUTED SIMULATION

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BIOGRAPHY

Richard M. Fujimoto is a Regents Professor in the School of Computational Science and Engineering at the Georgia Institute of Technology. He received the M.S. and Ph.D. degrees from the University of California at Berkeley in 1980 and 1983 in Computer Science and Electrical Engineering. He did his undergraduate work at the University of Illinois at Urbana-Champaign where he received B.S. degrees in Computer Science and Computer Engineering in 1977 and 1978, respectively. He was the founding chair of the School of Computational Science and Engineering (CSE) at Georgia Tech from 2005 to 2014 and led in the creation of M.S. and Ph.D. degree programs in CSE as well as two undergraduate minor programs. He has been an active researcher in the parallel and distributed simulation field since 1985 and has published over 200 papers in this area. He has received several best paper awards for his research as well as the ACM SIGSIM Distinguished Contributions in Simulation Award. He led the definition of the time management services for the High Level Architecture (IEEE Standard 1516). Fujimoto has served as Co-Editor-in-Chief of the journal Simulation: Transactions of the Society for Modeling and Simulation International and was a founding area editor for the ACM Transactions on Modeling and Computer Simulation journal. He has also served on the organizing committees for several leading conferences in the parallel and distributed simulation field.

ABSTRACT

Driven by the widespread availability of commercial multiprocessor systems and advances in computer networking, the parallel and distributed simulation field emerged and flourished in the late 1970s and 1980s. The field has evolved since that time to address critical issues such as synchronization and interoperability, and remains an active area of research to this day. Many impressive successes have been reported to date. Today, new platforms ranging from massively parallel, heterogeneous supercomputers and cloud computing environments as well as broader technology trends such as big data and the Internet of Things present new challenges and opportunities.

This presentation will review work in the parallel and distributed simulation field from seminal research in the 1970s and 80s to important successes that illustrate the potential offered by this technology. Key impediments that have prevented the technology from achieving more widespread adoption by the general modeling and simulation community are discussed as well as important challenges that remain in exploiting new and emerging computing platforms and technology trends.