Old Dominion University
College of Engineering and Technology
Department of Electrical and Computer Engineering

All lectures to be held at 3:00 p.m. on Fridays in Kaufman 224. For more information, contact Dr. Dimitrie Popescu at (757) 683-3741 or e-mail dpopescu@odu.edu. Refreshments provided after the seminar.

Friday, February 26, 2016 Seminar Topic:

MODELING PERFORMANCE AND ENERGY FOR APPLICATIONS OFFLOADED TO INTEL XEON PHI
by
Dr. Masha Sosonkina, MSVE Department
Old Dominion University

Abstract:

Accelerators are adopted to increase performance, reduce time-to-solution, and minimize energy-to-solution. However, employing them efficiently, given system and application characteristics, is often a daunting task. We will show a general model that predicts performance and power requirements for an application, computational portions of which are offloaded to an accelerator. The predictive capabilities of the model are demonstrated by determining the best hardware-software configuration instances with respect to the minimum energy consumption for the CoMD proxy application executed on single or multiple nodes. The model also provides estimates of the total data movement and computational throughput as well as of some key metrics, such as FLOPs-per-joule and bytes-per-joule, which are commonly used to study the energy-performance trade-offs.

Bio:

Dr. Sosonkina is a Professor of Modeling and Simulation at ODU. Prior to joining the university she was a research scientist at the U.S. Department of Energy Ames Laboratory in Ames Iowa and a faculty of the University of Minnestota Duluth. She hold Ph.D. in Computer Science and Applications from Virginia Tech.