Good afternoon,
You are invited to attend our weekly ECE Graduate Seminar.

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

All lectures to be held at 3:00pm on Fridays online at
https://vs.prod.odu.edu/kvs/interface_webex/?cid=202010_ECE7831VS_91606.
For more information, contact Dr. Chung Hao Chen at (757) 683-3475 or email cxchen@odu.edu.

Friday, November 13th Seminar Topic:
IMPLEMENTING ASYNCHRONOUS LINEAR SOLVERS USING NON-UNIFORM DISTRBUTIONS by Mr. Erik Jensen, Graduate Student in the Department of Computational Modeling and Simulation Engineering at Old Dominion University

Abstract:

Asynchronous iterative methods may improve the time-to-solution of their synchronous counterparts on highly parallel computational platforms. This paper considers asynchronous iterative linear system solvers that employ non-uniform randomization and develops a new implementation for such methods. Experiments with a two-dimensional finite-difference discrete Laplacian problem are presented. The new finer grain implementation is compared with an existing block-based one and shown to be superior in terms of the convergence speed and accuracy. In general, using non-uniform distributions in selecting components to update may lead to faster convergence. In particular, the new implementation converges up to 10% faster when it uses a non-uniform distribution.

Bio:

Erik Jensen earned his B.S. in Modeling and Simulation Engineering at Old Dominion University in 2016. He is currently in his fifth year of a B.S. to Ph.D. program in the CMSE department. He researches asynchronous and randomized linear solvers, ab initio quantum chemistry modeling, and resilience techniques for high-performance computing. Notable achievements include completing an REU program at the Center for Computation and Technology at LSU, and winning runner up best paper overall at SpringSim'19.