

COLLOQUIUM SERIES

TITLE:

Network FRESCO: A Framework for Experimental Screening, Control, and Optimization

Dr. Violet Syrotiuk

Associate Professor, Computer Science & Engineering
Arizona State University

ABSTRACT:

FRESCO is an interdisciplinary project driven by the challenging long-standing problem of optimizing performance of wireless networks under changing operating conditions. It provides a general framework to screen for factors and their interactions that are significant for the response variables of interest. Statistical models of responses are developed and used for optimization. Models for expected operating scenarios are developed offline. As the network executes, each node monitors online both its actual performance and its performance as predicted by a model. Significant deviation from the expectation for a monitored variable triggers the network to adapt by interpolation among, or extrapolation from, the existing models. Unstable model usage instead triggers a model to be updated locally. The FRESCO framework can be applied to data gathered from experimentation with a stochastic simulation model or a physical system. FRESCO is joint work with Charles J. Colbourn and Douglas C. Montgomery of Arizona State University, and Murat KulaHCI of the Technical University of Denmark.

Bio:

Violet R. Syrotiuk earned her Ph.D. in Computer Science from the University of Waterloo (Canada) in 1992. She joined Arizona State University in 2002 and is currently an Associate Professor of Computer Science and Engineering. Dr. Syrotiuk's research has been supported by NSF, Los Alamos National Laboratory, Defence Science and Technology Organisation (Australia), Architecture Technology Corp., Raytheon Co., and General Dynamics. She serves on the Editorial Board of Computer Networks and the International Journal of Communication Systems, and on the Technical Program Committee of several major conferences including Mobicom, Mobihoc, and Infocom. Her research interests include medium access control (MAC) and higher layer protocols for multi-hop wireless networks.

2:00 - 3:00pm, Friday, February 8, 2008

Dunn Hall 233, The University of Memphis

RECEPTION @ 3:05PM IN DH COMMONS ROOM #336

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