UNIVERSITY OF TORONTO
Identity, Privacy & Security Institute

The IPSI Lecture Series Presents:

Competitive Privacy in the Smart Grid

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In a variety of distributed systems including critical infrastructure networks viewed as critical from a national security perspective such as the Smart Grid, information sharing and data exchanges are essential for reliable and sustained operation. However, despite its importance, data sharing in such systems is stymied, due to the lack of a framework that addresses the competitive interests and information leakage concerns of the various data generating agents. This leads to a new competitive privacy problem amongst the agents that captures the tension between sharing data to ensure network reliability (utility/benefit to all agents) and withholding data for profitability and privacy reasons. For a specific problem of distributed linear state estimation, recent results on tradeoff between estimate fidelity and leakage of private state data as a result of sharing data are presented for a two agent network model which demonstrates the optimality of one-shot information exchange. Game-theoretic results based on pricing and trust-via-repeated interactions to incentivize agents to exchange data will be presented.

Monday, November 11, 2013

11:30 AM – 12:30 PM

Lassonde Mining Building Rm 128

170 College Street, Toronto, M5S 3E3

Lalitha Sankar received the B.Tech degree from the Indian Institute of Technology, Bombay, the M.S. degree from the University of Maryland, and the Ph.D degree from Rutgers University. She is presently an Assistant Professor in the ECEE department at Arizona State University.

Prior to this, she was an Associate Research Scholar at Princeton University. Following her doctorate, Dr. Sankar was a recipient of a three year Science and Technology Teaching Postdoctoral Fellowship from the Council on Science and Technology at Princeton University. Prior to her doctoral studies, she was a Senior Member of Technical Staff at AT&T Shannon Laboratories.

Her research interests include information privacy and cyber-security in distributed and cyber-physical systems, wireless communications, network information theory and its applications to model and study large data systems.

Dr.Sankar received the best paper award from the IEEE Globecom 2011 for her paper on side-information privacy with R. Tandon and H. V. Poor. For her doctoral work, she received the 2007-2008 Electrical Engineering Academic Achievement Award from Rutgers University.