iSchool Colloquium Series

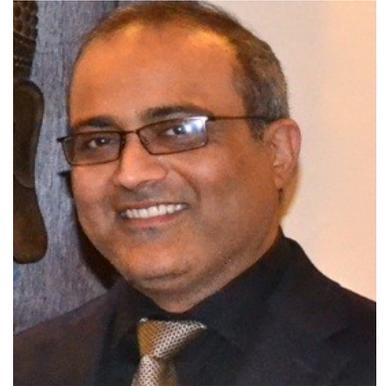2015

University of Pittsburgh
School of Information Sciences
Information Sciences Building, 135 N. Bellefield Ave.

Friday, April 10

Dr. Sharad Mehrotra

Professor, School of Information and Computer Science at University of California - Irvine & Founding Director at CERT

Risk Aware Approach to Data Confidentiality in Cloud Computing

IS Building | Room 404
2 pm, Reception
2:30 pm, Lecture

This talk focuses on the issue of "loss of control" that results when users outsource data and computation to the clouds. While loss of control has multiple manifestations, we focus on the data privacy and confidentiality implications when cloud providers are untrusted. Instead of following the well-studied (but still unsolved) path of encrypting data when outsourcing & computing on the encrypted domain, the talk advocates a risk-based approach to partitioning computation over hybrid clouds that provides an abstraction to address secure cloud data processing in a variety of system and application contexts. The talk will focus on two systems (a) SEMROD -- a secure map reduce platform for secure computing in hybrid clouds, and (b) Cloud Protect -- a middleware to selectively encrypt data stored in applications over the cloud based on user's security policies and workload.

Bio: Sharad Mehrotra is a Professor in the School of Information and Computer Science at University of California, Irvine and founding Director of the Center for Emergency Response Technologies (CERT) at UCI. He has served as the Director and PI of the RESCUE project (Responding to Crisis and Unexpected Events) funded by NSF through its prestigious large ITR program. He is the recipient of Outstanding Graduate Student Mentor Award in 2005. Prior to joining UCI, he was a member of the faculty at University of Illinois, Urbana Champaign in the Department of Computer Science where he was the recipient of the C. W. Gear Outstanding Junior Faculty Award. Mehrotra's research expertise is in data management and distributed systems areas. Mehrotra is the recipient of three test of time awards: ACM SIGMOD test of time award in 2012 for the paper entitled "Executing SQL over Encrypted Data in the Database-Service-Provider Model", the DASFAA 10 year best paper award of time award in 2013 for the paper entitled "Efficient Record Linkage in Large Data Sets", and the DASFAA 10 year best paper award in 2014 for the paper entitled "Efficient Execution of Aggregation Queries over Encrypted Databases". In addition, Mehrotra is a recipient of numerous best paper and awards including SIGMOD Best Paper award in 2001 for a paper entitled "Locally Adaptive Dimensionality Reduction for Indexing Large Time Series Databases", best paper award in DASFAA 2004 for the paper entitled "Efficient Execution of Aggregation Queries over Encrypted Databases", and best paper award in ACM International conference in Multimedia Retrieval, 2013 for the paper entitled "A unifying framework for context-assisted face clustering".