THE CITY UNIVERSITY OF NEW YORK
College of Staten Island
School of Business

iSecure: Information Security Research and Education Lab
Invited Speaker Series

Dr. Bhavani Thuraisingham
The University of Texas at Dallas

Date: Wednesday, May 14, 2014
Time: 11am-12:00pm
Location: 3N-219 Conference Room, School of Business

Title: CLOUD-CENTRIC ASSURED INFORMATION SHARING

Abstract:

This presentation will describe our research and development efforts in assured cloud computing for the Air Force Office of Scientific Research. We have developed a secure cloud computing framework as well as multiple secure cloud query processing systems. Our framework uses Hadoop to store and retrieve large numbers of RDF triples by exploiting the cloud computing paradigm and we have developed a scheme to store RDF data in a Hadoop Distributed File System. We implemented XACML-based policy management and integrated it with our query processing strategies. For secure query processing with relational data we utilized the HIVE framework. More recently we have developed strategies for secure storage and query processing in a hybrid cloud. In particular, we have developed algorithms for query processing wherein user's local computing capability is exploited alongside public cloud services to deliver an efficient and secure data management solution. We have also developed techniques for secure virtualization using the XEN hypervisor to host our cloud data managers as well as an RDF-based policy engine hosted on our cloud computing framework.
We have also developed demonstration systems with our European partners: Kings College, University of London and the University of Insubria Italy who are funded by EOARD (The European Office of Aerospace Research and Development). The first demonstration illustrates how information may be shared in our cloud, based on policies specified in XACML. In the second demonstration we have implemented a semantic web-based policy engine and will show how multiple social networks may share information on our cloud utilizing semantic web-based policies.

Biography:

Dr. Bhavani Thuraisingham is the Louis A. Beecherl, Jr. Distinguished Professor of Computer Science and the Executive Director of the Cyber Security Research and Education Institute (CSI) at The University of Texas at Dallas. She is an elected Fellow of IEEE, the AAAS, the British Computer Society, and the SPDS (Society for Design and Process Science). She received several prestigious award including IEEE Computer Society's 1997 Technical Achievement Award for "outstanding and innovative contributions to secure data management", the 2010 ACM SIGSAC (Association for Computing Machinery, Special Interest Group on Security, Audit and Control) Outstanding Contributions Award for "seminal research contributions and leadership in data and applications security for over 25 years" and the SDPS Transformative Achievement Medal for her contributions

to interdisciplinary research. She has unique experience working in commercial industry, research laboratory, US government and academia and her 30+ year career includes research and development, technology transfer, product development, program management, and consulting for the federal government. Her work has resulted in 100+ journal articles, 200+ conference papers, 100+ keynote and invited talks, six US patents (two pending) and twelve books.