SEMINAR NOTICE

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Secure Time-aware Provenance for Distributed Systems

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University of Pennsylvania

**27 Jun 11 (Monday)
4pm
@ ADSC - Level 8, Fusionopolis, Connexis North**

Abstract:

Secure Time-Aware Provenance is a novel approach that provides the capability to "explain" the existence (or change) of a certain distributed system state at a given time in a potentially adversarial environment.   In this talk, I first present efficient query processing techniques for efficiently maintaining and querying provenance in a distributed fashion. I next propose enhancements to the provenance model, in order to explicitly represent time and state changes. The enhanced model allows consistent and complete explanations of system state (and changes) in dynamic and distributed environments. Finally, I describe security extensions that allow operators to reliably query provenance information in adversarial environments. Our extensions incorporate tamper-evident properties which provide the guarantee that operators can eventually detect the presence of compromised nodes that lie or falsely implicate correct nodes.

Biosketch:

Boon Thau Loo is an Assistant Professor in the Computer and Information Science department at the University of Pennsylvania. He received his Ph.D. degree in Computer Science from the University of California at Berkeley in 2006. Prior to his Ph.D, he received his M.S. degree from Stanford University in 2000, and his B.S. degree with highest honors from UC Berkeley in 1999. His research focuses on distributed data management systems, Internet-scale query processing, and the application of data-centric techniques and formal methods to the design, analysis and implementation of networked systems. He was awarded the 2006 David J. Sakrison Memorial Prize for the most outstanding dissertation research in the Department of EECS at UC Berkeley, and the 2007 ACM SIGMOD Dissertation Award. He is a recipient of the NSF CAREER award (2009). He has served as the program co-chair for the CoNEXT 2008 Student Workshop, the NetDB 2009 workshop co-located with SOSP, and the Workshop on Rigorous Protocol Engineering (WRiPE 2011) co-located with ICNP.

Seats are limited, please RSVP to pauline.wee@adsc.com.sg by 24th June with your name and institution details.