



# Spring 2011 Colloquium

## Temple University

### Computer and Information Sciences

#### *Location Privacy in Location-aware Computing*

**Ling Liu**

Georgia Institute of Technology

**Wednesday, March 23, 11am, Wachman Hall 447**

#### **Abstract**

We are entering the mobile Internet era where people, vehicles, and hand-held devices are connected at all times. Location becomes a piece of important information for real-time information access, on-demand service discovery and dissemination, as well as continuous and personalized service provision. In location-aware computing, there are conceivably two types of location privacy - personal subscriber level privacy and corporate enterprise-level privacy. Companies need enterprise-level privacy to preserve corporate secrets and maintain competitive edge. Recently, location privacy becomes a hot topic in a number of research communities, such as mobile computing, mobile data management, and wireless and mobile networks. Most of the location privacy solutions try to prevent disclosure of unauthorized location information by techniques that explicitly or implicitly control what and how location information is given to whom and when. In this talk, I will give a brief overview of location privacy research done at Georgia Tech, focusing on two classes of location privacy protection techniques: (1) Location protection through location anonymization, a system capability to obfuscate the location information such that a state of a subject is not identifiable within the anonymity set; and (2) Location protection through pseudonymity of user identities, which uses an internal pseudonym rather than the user's actual identity. An important challenge in protecting location privacy is to exploit the intrinsic relationships among location privacy, location utility, and personalization and achieve a better balance among these conflicting and yet complimentary properties in location aware computing. I will conclude the talk with a list of open issues and technical challenges in location privacy research.

#### **Bio:**

Ling Liu is currently a full Professor in the College of Computing at Georgia Institute of Technology. Prof. Liu directs the research programs in Distributed Data Intensive Systems Lab (DiSL), examining performance, availability, security, privacy, and energy efficiency in building large scale distributed computing systems, ranging from databases, data mining, data storage, network computing, mobile and wireless computing, and cloud computing. Prof. Ling Liu is an internationally recognized expert in the areas of Database Systems, Distributed Computing, Internet Systems, and Service oriented computing. She has published over 250 international journal and conference articles and is a recipient of the best paper award of ICDCS 2003, the best paper award of WWW 2004, 2005 Pat Goldberg Memorial Best Paper Award, and the best data engineering paper of 2008 International Conference on Software Engineering and Data Engineering. Prof. Liu has served as general chair and PC chairs of numerous IEEE and ACM conferences in data engineering, distributed computing, service computing and cloud computing fields and is a co-editor-in-chief of the 5 volume Encyclopedia of Database Systems (Springer). She is currently on the editorial board of a number of international journals, such as ACM Transactions on Web (TWEB), International Journal of Parallel and Distributed Computing (JPDC), IEEE Transactions on Service Computing, Parallel and Distributed Databases (Springer), Wireless Network Journal (WINET). Prof. Liu's current research is primarily sponsored by NSF, IBM and Intel.