![Concordia University ENCS - Engineering & Computer Science]

Concordia Institute for Information Systems Engineering

**THE CONCORDIA INSTITUTE FOR INFORMATION SYSTEMS ENGINEERING
IS PLEASED TO PRESENT THE FOLLOWING GUEST LECTURE IN
OUR CIISE SEMINAR SERIES**

Mr. Yiming Wang, M.A.Sc. Student
Concordia Institute for Information Systems Engineering

Preserving Privacy for Location-Based Services with Consecutive Queries

Abstract: Location-based service (LBS) is gaining momentum as GPS-equipped mobile devices become increasingly affordable and popular. One of the potential obstacles faced by LBS is that users may raise concerns about their personal privacy when location data are sent to a distrusted LBS provider. A well-known solution is to render the location data less accurate through spatial or temporal cloaking. In this paper, we show that only cloaking locations cannot protect privacy when a moving device continuously sends LBS queries. By combining consecutive location data including speed, heading direction, and cloaked locations, an adversary can obtain a more accurate estimation of the actual location. We propose a solution to prevent such inferences attack by cloaking the current speed and direction as well. Since the cloaking is based on estimated future locations, we devise methods for tolerating errors caused by the estimation process. We report simulated experimental results on the tradeoff between the capability of tolerating estimation errors and the degree of cloaking.

Biography: Yiming Wang got his bachelor in computer science from Suzhou University, China. He is currently a Master of Applied Science student in Information systems Security in CIISE at Concordia University. His research topic mainly focuses on enhancing the privacy information protection in location based service.

Thursday, January 22, 2009

16:00 – 17:00
EV003.309

Refreshments will be served
(1515 St. Catherine Street West)

![Concordia University logo]