

**DEPARTMENT OF COMPUTER SCIENCE  
UNIVERSITY OF HOUSTON  
FALL SEMINAR 2011**

**WHEN:** WEDNESDAY, DECEMBER 7, 2011  
**WHERE:** PGH 232  
**TIME:** 10:00 AM (Please note time)

**SPEAKER:** Dr. Bogdan Carbutar, Florida International University

Host: Dr. Weidong Shi

**TITLE:** Imposybil? Yes. Preventing Infiltration Attacks in Geo-Social Networks

**ABSTRACT:**

Online and Geo Social Networks (OGSNs) such as Foursquare have recently emerged as online tools for connecting users. Users can setup friendship relations, communicate, report and share their location with friends. Storing personal information from hundreds of millions of users, OGSNs are appealing targets for infiltration attacks initiated from Sybil accounts that collect information by inviting and befriending unsuspecting users. In this talk I will introduce Imposybil, a system designed to prevent Sybil infiltration attacks using location information certified by OGSNs.

Imposybil consists of protocols enabling users to privately verify the correctness of location claims made by inviters, determine their location affinity with inviters and to elicit user feedback based on detected co-location events with the inviters.

Data collected from almost 800,000 Foursquare users validates our approach: users tend to be co-located with friends but share few common locations with random other users.

Android and Java implementations tested on several platforms show that the cost of privacy is small: providers can support thousands of private transactions per second and smartphones can process hundreds of location records per second.

**Bio:** Bogdan Carbutar is an assistant professor in the School of Computing and Information Sciences at Florida International University. Before joining FIU he has been a member of the technical staff in the Applied Research Center at Motorola. His research interests include privacy and security in distributed systems, including online social networks and wireless networks. He holds a Ph.D. in Computer Science from Purdue University.

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