Samuel D. Conte Distinguished Lecture Series In Computer Science

FALL 2003

Privacy Cognizant Information Systems

Dr. Rakesh Agrawal
IBM Almaden Research Center

Tuesday, November 11, 2003
WTHR 160, 3:30 p.m.

There is increasing need to build information systems that protect the privacy and ownership of data without impeding the flow of information. I will present some of our current work to demonstrate the technical feasibility of building such systems: *Privacy-preserving data mining.* Conventional wisdom held that data mining and privacy were adversaries. We have developed privacy-preserving data mining algorithms that operate on randomized (and thus privacy-protected) user data to build mining models, and provide actionable insights to businesses. *Hippocratic databases.* Unlike current database systems, Hippocratic databases have data privacy as a founding tenet. Their core capabilities have been distilled from the principles behind current privacy legislations and guidelines. We identify the technical challenges and problems in designing Hippocratic databases, and also outline some solutions. *Sovereign information sharing.* Current information integration approaches assume the data in each database can be revealed to other databases. Trends such as end-to-end integration, outsourcing, and security require integrating information while limiting the data revealed. We have formalized the problem, identified key operations, and designed algorithms for these operations, enabling information exchange in domains such as security agencies, intellectual property licensing, crime prevention, and medical research.

Biography

Dr. Rakesh Agrawal is a leader in the data mining field, having received both the ACM SIGKDD and SIGMOD innovations award, as well as the SIGMOD "Test of Time" award for his seminal work in association rule mining. Recently he has been working on privacy issues in data mining and databases. He is an IBM Fellow and a Fellow of the IEEE. Dr. Agrawal received the M.S. and Ph.D. degrees in Computer Science from the University of Wisconsin-Madison in 1983. He also has a B.E. degree in Electronics and Communication Engineering from the University of Roorkee, and a two-year Post Graduate Diploma in Industrial Engineering from the National Institute of Industrial Engineering (NITIE), Bombay.

The Samuel D. Conte Distinguished Lecture Series is hosted by the Department of Computer Sciences, Purdue University.

A reception will be held after the talk in the foyer.

PURDUE UNIVERSITY

Faculty and students wishing to speak privately with Doctor Agrawal should contact Chris Clifton at clifton@cs.purdue.edu or call at (765)494-6005