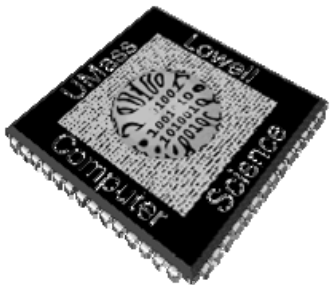

UMass Lowell Computer Science Colloquium Announcement

Speaker: Prof. Deepak Ganesan, UMass Amherst
Date & Time: Wednesday, February 21, 2007, 3:00pm-4:00pm
Place: Olsen 311 (Refreshments are served at 2:40pm)

Towards Storage-centric Sensor Network Architectures

A significant amount of sensor network research has addressed the problem of energy-efficiency, primarily by exploiting the fact that computation is many orders of magnitude less expensive than radio communication. Our measurements have shown that new-generation NAND flash memories allow storage to be two orders of magnitude cheaper than communication, significantly altering existing tradeoffs. In this talk, I will present our research aimed at redesigning sensor software and platforms by making the role of storage central in these systems. In particular, we propose to completely redesign the storage subsystem of sensor nodes by replacing it with a rich "data management stack". I will focus on three research efforts that address different challenges in building this stack. First, I will describe ongoing efforts towards designing an energy and memory-efficient sensor database for archival storage and querying of sensor data on flash memory. Second, I will present a predictive storage architecture that emphasizes archival at remote sensors and extensive use of predictive techniques at proxies for efficient querying of archived sensor data. Finally, I will discuss distributed index structures that present a unified, easy to use data abstraction across numerous proxies and remote sensors.

(This is joint work with Prashant Shenoy, Peter Desnoyers, Ming Li and Gaurav Mathur.)

Bio

Deepak Ganesan is an Assistant Professor at the University of Massachusetts Amherst. He received his B.Tech in Computer Science from the Indian Institute of Technology, Madras, India, in 1998 and his Ph.D. from the University of California, Los Angeles, 2004. He has served on the program committees of a number of top conferences including NSDI, SenSys and Infocom, and is currently an editor for the ACM Transactions on Sensor Networks and ACM Sigmobile MC2R. He is a recipient of the NSF CAREER Award.

Colloquium Coordinator: *Cindy Chen*, cchen@cs.uml.edu. Website: http://www.cs.uml.edu/~cchen/colloquia/