

SRIKANTH SUNDARESAN

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RESEARCH INTERESTS

I am interested in Computer Networking, specifically measurements, network management and routing.

EDUCATION

Ph.D., Computer Science August, 2008 - Current
Georgia Institute of Technology, Atlanta, GA Advisor: Professor N. Feamster

M.S., Computer Systems Engineering August, 2005 - February 2008
University of Massachusetts Amherst, MA Advisor: Professor C. M. Krishna

B.Tech. (Honors), Electrical Engineering September 2000 - June 2004
Malaviya National Institute of Technology, Jaipur, India

- **Graduate Courses:** Network Security, Computer Networks, Network Security, Advanced Fundamentals of Computer Networks, Wireless Sensor Networks, Probability and Random Processes, Distributed Operating Systems, Computer Algorithms, Simulation and Evaluation of Computer Systems and Networks, Real Time Systems, Computer Architecture
- **Selected Undergraduate Courses:** Network Theory, Electronic Devices & Circuits, Switching Theory & Logic Design, Theory & Applications of Integrated Circuits, Microprocessors, Computer Architecture, Systems Programming, Databases.

PUBLICATIONS

- **Event-Driven Adaptive Duty-Cycling in Sensor Networks**, Srikanth Sundaresan, Israel Koren, Zahava Koren, C. Mani Krishna. (Accepted by *The International Journal of Sensor Networks*).
- **Managing Resource Constrained Sensor Networks**, Masters' Thesis

RESEARCH PROJECTS

- **Characterizing User Performance in Access Networks (Current):** We study how the performance seen by users of ADSL networks is affected by geographic location, choice of ISP, SLA, and other factors. We also attempt to use statistical methods to model user performance based on above factors. The study uses active measurements collected from thousands of home ADSL users in France.
- **Traffic Engineering using Path Splicing (Current):** We explore the use of multi-path techniques (particularly path-splicing) to provide traffic engineering solutions. Conventional traffic engineering solutions fix a single (or multiple) topologies for expected traffic demands, and hence do not exploit the richness of the underlying topology. Path-splicing promises to offer a simple, low overhead framework to adapt the topology dynamically to provide close to optimum load balancing for any traffic demand.
- **Managing Resource Constrained Sensor Networks (Spring 2006 - Fall 2007):** Implemented a simulation model of sensor-nets to study the parameters affecting their performance and analyze energy saving algorithms which adapt the duty cycle of sensor nodes based on perception of external environment. Developed an algorithm based on Markov Decision theory and randomized methods to dynamically optimize duty cycle based on state of system and perceived external environment state.
- **The "Feel" Application (Fall 2007):** Implemented a sensor-net application with Mica2Dot and Mica2 motes to sense room occupancy, with the decision process using a Bayesian Network.
- **Maximizing Average Customer Satisfaction in Pub/Sub Systems (Spring 2006):** Devised a linear programming solution for efficient tree structures to minimize routing delay and subscription processing delay for publish/subscribe systems.

