

SOUMENDRA NANDA

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EDUCATION

Doctorate of Philosophy in Computer Science, Dartmouth College, Hanover, NH Degree Expected June 2008

- Thesis: *Mesh-Mon: A Real Time Monitoring System for a Mobile Multi-Radio Wireless Mesh Network*, Advisor: Dr. David Kotz
- Mesh-Mon is a distributed network diagnostics and management system that manages Dart-Mesh. Dart-Mesh provides 802.11b coverage on all 3 floors of our CS building using 18 custom-made dual-radio Linux-based mesh devices
- *Mesh-Mon: A Multi-Radio Mesh Monitoring and Management System*, Elsevier Computer Communications Journal, April 2008
- Research Interests: Systems Research, Mobile Computing, Wireless Networking, Network Management and Security

Master of Science in Computer Science, Dartmouth College, Hanover, NH 2004

- MS Thesis: *Spatial Multipath Location Aided Ad Hoc Routing Protocol (MLAR)*, Advisor: Dr. Robert S. Gray
- Implemented MLAR, a three dimensional geographic ad hoc wireless routing protocol designed for mobile sensor devices using the network simulator *ns-2*. Validated MLAR's performance benefits versus three other state-of-the-art routing protocols
- *MLAR in 2D and 3D*, Sixth IEEE Wireless Communications and Networking Conference (WCNC), Las Vegas, April 2006
- *Spatial Multipath Location Aided Ad Hoc Routing*, Thirteenth International Conference on Communications and Computer Networking (ICCCN), Chicago, October 2004, Co-Author: Robert S. Gray

Bachelor of Engineering in Computer Engineering, Ramrao Adik Institute of Technology (RAIT), Mumbai 2001

- Advisor: Dr. G. Sivakumar, Head of CSE Department, Indian Institute of Technology (IIT), Bombay
- Senior Project: *Ad-Lets: Mobile Agents for Network Management* using IBM's Aglets Java-based Mobile Agent Toolkit
- Implemented a unified cross-platform (Linux and Windows NT) network administration system using mobile agents

WORK EXPERIENCE

Software Development Engineer Intern, Microsoft Corporation, Security Tech. Unit, Redmond, WA Summer 2006

- Designed, extended and optimized a compiler for the Generic Application-layer Protocol Analysis (GAPA) language
- GAPA is the core of a novel framework that enables deep packet inspection for the next generation of firewalls, network monitoring and management tools. Collaborated with Narsi Nagampalli, and researchers Helen Wang and John Dunagan of MSR
- Selected to present a demo to Ben Fathi, Corporate VP of Security Technology Unit and his senior executive team

MS Thesis Co-Advisor, Department of Computer Science, Dartmouth College, Hanover, NH 2005-2006

- Jointly supervised with Prof. David Kotz, the development of Zhenhui Jiang's MS thesis titled: *A Combined Routing Method for Ad Hoc Networks*, which included simulations of AODV, ODMRP and TORA routing protocols on the SWAN network simulator
- Dartmouth Tech Report 2007-588: *A Combined Routing Method for Wireless Ad Hoc Networks*, Co-Authors: Z. Jiang and D. Kotz

Research Intern, Institute for Security Technology Studies (ISTS), Hanover, NH Summer 2002

- Implemented *On Demand Multicast Routing Protocol (ODMRP)*, an ad hoc wireless routing algorithm for 802.11b wireless networks using C and C++, for use in real-world outdoor performance experiments

Research Assistant, Department of Computer Science, Dartmouth College 2001-2003

- Independently researched and conducted mathematical analysis, model development, simulation tests and practical evaluation of mobile agent software versus traditional RPC methods using Java, C++, Tcl and the Dartmouth Scalable Simulator (DaSSF)

System Administrator, RAIT, Mumbai, India 1998-2001

- Founding member of student team that built and managed RAIT's expanded computing facilities of over 100 networked Linux and Windows NT systems. Designed, implemented and managed computing facilities, resources, staff and training

LEADERSHIP, AWARDS & HONORS

- Live-in Resident Graduate Advisor to 300+ Dartmouth undergraduate students in the Wheeler-Richardson cluster 2003-2007
- Reviewer, Computer Networks Journal and Computer Communications Journal (Published by Elsevier) 2006-2007
- Best Research Poster Award, Dartmouth Annual Graduate Arts and Sciences Research Symposium 2004
- Captain, RAIT Basketball Team 2000-2001; Winner at VJTI Inter-College Basketball Tournament, Mumbai 2000
- National Level Science Talent Search Examination, All India Rank 34th out of over 75,000 examinees 1994

COMPUTER SKILLS

- Programming Languages: C, C++, Java, Tcl/Tk, ns-2, x86 Assembly, Visual Basic, Octave, Maya, XML, HTML and SQL

LANGUAGES: Fluent: English, Hindi, Bengali Beginner: Spanish, French, Marathi