

SANTASHIL PALCHAUDHURI
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SUMMARY: Interested in the design, analysis and development of wireless networking systems, architectures and protocols; particularly in mesh and sensor networks. Have a strong background in the design of algorithms and protocols, complemented by hands-on experience in start-up environments. A fast learner able to contribute effectively both individually and in team environments. Excellent communication skills.

EDUCATION

Rice University

PhD, Department of Computer Science, May 2006

Thesis: *An Adaptive Sensor Network Architecture for Multi-scale Communication*

MS, Department of Computer Science, May 2002

Thesis: *Power Mode Scheduling for Ad Hoc Networks*

Indian Institute of Technology, Kharagpur

BTech (Hons.), Department of Computer Science and Engineering, May 2000

Thesis: *SMARTE: Shared Memory Architecture for a Real Time Environment*

EXPERIENCE

Wireless Group, Aruba Networks: Member Technical Staff, 2007 - Present

Involved in mesh networking and remote AP. Linux networking stack and MadWifi driver.

Algorithms Group, Meru Networks: Software Engineer, 2005 - 2007

Responsible for the core component in the linux-based controller which managed virtual cell, mobility, contention and resource. Worked on distributed algorithms and state management algorithms for robustness, scalability and performance. Involved in licensing, high-availability features, power mode synchronization in Nucleus, wireless backhaul in MadWifi. Thorough knowledge of 802.11 standards. Extensive interaction with customer support, quality assurance, product management and engineering both in individual and team environments. Resolved critical customer situations both on-site and off-site.

Monarch Group, Rice University: Research Assistant, 2000 - 2005

Research on protocol design for sensor and wireless networks. Developed an adaptive, cross-layer wireless sensor network architecture called COMPASS, and designed routing, channel access, and synchronization protocols within this architecture. Designed scalable ad hoc network architectures under Safari and Ad Hoc City projects. Developed a framework for physical implementation of ad hoc network routing protocols, called PRAN. Implemented UNIX-like operating system kernel, device driver, and file system.

Laboratory for Computer Comm., Ecole Polytechnique Federale de Lausanne (EPFL): Visitor, Summer 2004

Developed steady state mobility models for ad hoc networks, specifically for random trip models.

Network Technology Group, Sun Microsystems: Research Intern, Summer 2002

Designed and prototyped a network element architecture for scalable aggregation of network services, including a rule aggregation algorithm for conflict-free enforcement of tier 0 network device actions.

High Speed Networks Research, Bell Labs, Lucent Technology: Research Intern, Summer 2001

Designed a distributed OSPF protocol to handle load in high speed routers, by using the multiple processors in the new generation of routers.

CMC Limited: Intern, Summer 1999

Design and development of a Distributed Treasury Management System

COMPUTER SKILLS

Systems: FreeBSD, Linux, Nucleus, Windows

Languages: C, C++, Java, Perl, Shell, Network Simulator (ns-2), Lex, Yacc

PATENTS FILED

Method and Apparatus for Computing Priorities Between Conflicting Rules for Packet Flows. Christoph L. Schuba, Santashil PalChaudhuri, Raphael Rom, and Michael F. Speer. *U.S Patent filed*, 2003.

An Adaptable Protocol Stack Architecture for Wireless Sensor Network. Umakishore Ramachandran, Rajnish Kumar, and Santashil PalChaudhuri. *U.S Patent filed*, 2006.

SELECTED PUBLICATIONS

COMPASS: An Adaptive Sensor Network Architecture for Multi-scale Communication, Submitted to *IEEE Wireless Communications* magazine

Design and Performance of PRAN: A System for Physical Implementation of Ad Hoc Network Routing Protocols, *IEEE Transactions on Mobile Computing (TMC)*, April, 2007.

Safari: A Self-Organizing Hierarchical Architecture for Scalable Ad Hoc Networking, *Elsevier Ad Hoc Networks Journal*, 2007.

Adaptive Medium Access Scheduling for a Multi-scale Sensor Network Architecture, *IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS)*, Santa Fe, New Mexico, June, 2007

System Support for Cross-layering in Sensor Network Stack, *International Conference on Mobile Ad Hoc and Sensor Networks (MSN)*, Hong Kong, China, Dec 2006

Design of Adaptive Overlays for Multi-scale Communication in Sensor Networks, *IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS)*, Marina Del Ray, California, June 2005

Perfect Simulations for Random Trip Mobility Models, *38th Annual Simulation Symposium (ANSS)*, San Diego, California, April 2005

Physical Implementation and Evaluation of Ad Hoc Network Protocols using Unmodified Simulation Models, *ACM SIGCOMM Asia Workshop*, Beijing, China, April 2005

Adaptive Clock Synchronization in Sensor Networks, *3rd IEEE Symposium on Information Processing in Sensor Networks (IPSN)*, Berkeley, California, April 2004

TreeCast: A Stateless Addressing and Routing Architecture for Sensor Networks, *4th IEEE Workshop on Algorithms for Wireless, Mobile Ad Hoc and Sensor Networks (WMAN)*, Santa Fe, New Mexico, April 2004

Design and Evaluation of a Metropolitan Area Multitier Wireless Ad Hoc Network Architecture, *5th IEEE Workshop on Mobile Computing Systems & Applications (WMCSA)*, Monterey, California, October 2003

Power Mode Scheduling for Ad Hoc Networks, *10th IEEE International Conference on Network Protocols (ICNP)*, Paris, November 2002

RELEVANT COURSES

Mobile and Wireless Networking, Distributed Systems, Broadband Networks, Advanced Computer Networks, Network Processor System Design, High-Performance Computer Architecture, Network and Systems Seminar, Operating Systems, Compiler Design, Design & Analysis of Algorithms, Entrepreneurial Management, Network Management

HONORS

Most Valuable Engineer at Meru Networks, 2006

Best Research Poster at Rice Computer Science, 2002

Rice University Fellowship, 2000

JBNSTS (Jagadish Bose National Science Talent Search Scholarship), 1997

Scholarship of Indian Statistical Institute, Calcutta, 1996

Selected for INMO (Indian National Mathematics Olympiad), 1995

NTSE (National Talent Search Examination) Scholarship, 1994