

Suhas Mathur

CONTACT INFORMATION

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OBJECTIVE: To find a challenging research intern position in the field of communications and wireless networks.

RESEARCH INTERESTS

Wireless Networks & Communications, Security in Wireless Networks, Radio resource management and MAC layer issues in wireless systems, Information Theory.

EDUCATION

WINLAB, Rutgers University, NJ, USA Expected graduation: May 2009
Ph.D., Electrical Engineering Advisor: Dr. Narayan Mandayam
Thesis: To be decided GPA:

WINLAB, Rutgers University, NJ, USA October 2006
M.S., Electrical Engineering Advisor: Dr. Narayan Mandayam
Thesis: Coalitional Games in Cognitive Radio Networks GPA: 4.0

Indian Institute of Technology Madras, INDIA Graduated: July 2004
B.Tech., Electrical Engineering Advisor: Dr. David Koilpillai
Thesis: Adaptive Channel Tracking for Fading Mobile Radio Channels GPA: 8.93 / 10.00

ACADEMIC AND WORK EXPERIENCE

Systems Engineering Intern, Corporate R&D, Qualcomm Inc. June - August 2006

- System design issues in the cognitive radio MAC protocol for the IEEE 802.22 Wireless Regional Area Networks.
- Study of detection algorithms for DTV signals under very low SNR conditions for enabling 802.22 cognitive radio technology.
- Performance evaluation of DTV signal detection techniques based on PN sequence detection under low SNR.

Research Assistant, WINLAB, Rutgers University July 2005 - present

- Design and testing of a mobility emulation system on a wireless indoor testbed (ORBIT).
- Information theoretic analysis of receiver cooperation in an interference channel model under the framework of cooperative game theory.
- Study of incentives for cooperative coalitional behavior in cognitive wireless networks (M.S. research, supported in part by grants from NSF and the Defense Spectrum Office (DSO) of the Defense Information Systems Agency).

Visiting Researcher, Communications Networks, Rheinisch Westfalische Technische Hochschule (RWTH), Aachen, Germany April 2003 - August 2003

- Performance evaluation of the Advanced Speech Call Items (ASCI) in the GSM Phase 2+ standard - voice broadcast service (VBS), voice group call service (VGCS) and enhanced multi-layer precedence and preemption service (eMLPP) (as part of a Vodafone collaborative project). Simulation based study involving implementation of the ASCI provisions of the stack in the network layer and below and evaluation through a discrete event simulator.
- Performance study of a field trial system of the European TETRA (Terrestrial Trunked Radio) standard proposed for German emergency and security services - compared critical parameters such as call setup time, push-to-talk time and group call setup time with equivalent specifications claimed by the group services in the GSM Phase 2+ solution proposed by Vodafone.

- Development of a low complexity robust channel tracking algorithm using the recently proposed Kalman Least Mean Squares (KLMS) and Wiener Least Mean Squares (WLMS) Algorithms. The design was based on stochastic internal modeling of time-varying coefficients of an FIR channel model and provides considerably superior BER performance in severe Rayleigh fading environments even at low SNR and high Doppler frequencies.

Teaching Assistant, ECE, Rutgers University

September 2004 - June 2005

Instructor, ECE, Rutgers University

June 2005 - July 2005

PUBLICATIONS

- Coalitional Games in Receiver Cooperation for Spectrum Sharing: Suhas Mathur, Lalitha Sankaranarayanan and Narayan B. Mandayam *Conference on Information Sciences and Systems* (Invited Paper) March 2006, Princeton, NJ.
- Coalitional games in Gaussian Interference Channels: Suhas Mathur, Lalitha Sankaranarayanan and Narayan B. Mandayam submitted to the *International Symposium on Information Theory, 2006*
- Mobility Emulation Through Spatial Switching on a Wireless Grid: Kishore Ramachandran, Sanjit Kaul, Suhas Mathur, Marco Gruteser, and Ivan Seskar, Rutgers University. (Demo at *MobiSys 2005*)
- Towards Large-Scale Mobile Network Emulation Through Spatial Switching on a Wireless Grid: Suhas Mathur, Kishore Ramachandran, Sanjit Kaul and Marco Gruteser (*ACM SIGCOMM 2005*)

GRADUATE LEVEL COURSES

- Communication Networks I-II, Advanced Topics in Wireless Communications, Digital Signals and Filters, Information Theory and Coding, Communication Theory, Detection and Estimation Theory, Stochastic Signals and Systems, Linear Algebra, Wireless Communication Technologies.

SKILLS

Software: MATLAB, NS2, Microsoft Office, TKGATE, SPICE, SCILAB, PTOLEMY
Operating Systems: Windows, Linux, Solaris
Standards: GSM, IEEE 802.11 family, CDMA
Languages: C, C++, Pascal, Basic, HTML, ITU-T SDL, GPSS
Assembly Language Programming for 8085/8086

REFERENCES

- Prof. Dipankar Raychaudhuri, WINLAB, Dept. of ECE, Rutgers University.
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- Prof. Narayan Mandayam, WINLAB, Dept. of ECE, Rutgers University.
Phone: 732-932-6857 Ext. 642, e-mail: narayan@winlab.rutgers.edu
- Dr. Marco Gruteser, WINLAB, Dept. of ECE, Rutgers University.
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