

Ramya Bhagavatula

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OBJECTIVE Seeking an R & D based full-time position in the area of wireless communications.

EDUCATION

- **Currently pursuing Ph.D. in Electrical and Computer Eng.**
Expected graduation: May 2010.
The University of Texas at Austin.
Advised by: Prof. Robert W. Heath, Jr.
- **M.S. in Electrical Eng., Dec. 2006**
The University of Texas at Austin.
- **B.S. in Electrical and Electronics Eng., Aug. 2005**
Birla Institute of Technology and Sciences, Dubai, UAE.

WORK EXPERIENCE

- **Research Assistant, Spring 2006 - present:** The University of Texas at Austin. Supervised by Prof. Robert W. Heath, Jr.
- **Intern - PHY Layer Systems, Summer 2008:** Corporate R & D Division, Qualcomm, San Diego, CA. Studied the impact of adjacent carrier interference in femtocells. Designed pulse shaping filters for interference mitigation in femto base stations, for 3G standards like WCDMA, HSPA, CDMA2000 and 1xEVDO.
- **Teaching Assistant, Fall 2007:** The University of Texas at Austin. Course - Wireless Communications Lab.
- **Research Intern, Summer 2007:** Andrew Corporation, Richardson, TX. Studied the influence of base station antenna design parameters like cross-pol isolation, polarization etc. on the system throughput for the 3GPP LTE standard.
- **Engineering Intern, Spring 2005:** Petrofac Intl. Ltd, Sharjah, UAE. Designed the lighting system for a unit of the Kashagan Experimental Developmental Program in Kazakhstan. Part of a team that reduced the costs of cabling for the project by \$1.5 million.
- **Teaching Assistant, Fall 2004:** Birla Institute of Technology and Sciences, Dubai, UAE. Course - Digital Electronics and Computer Organization.
- **Engineering Intern, Summer 2003:** Siemens Landis and Staefa, Dubai, UAE. Completed training in building management systems, protocols and communication.

PROJECTS

- **Analysis of MIMO Antenna Designs for IEEE 802.16e-2005 and 3GPP-LTE Cellular Systems:** Andrew Corporation, Summer 2007. Developed channel simulators for the IEEE 802.16e-2005 and 3GPP-LTE cellular systems. Analyzed the performance of different base station antenna designs.
- **MIMO Antenna Placement for Multimedia Delivery in Boeing Aircraft:** Boeing, Spring 2006. Determined antenna placement locations and array configurations for wireless access points incorporating MIMO in Boeing airplane.
- **CDMA and the Applications of Adaptive Filters:** Birla Institute of Technology and Sciences, Dubai, UAE. Senior study project, Fall 2004. Studied single and multi-user CDMA.
- **VLSI Design of DSP Algorithms:** Birla Institute of Technology and Sciences, Dubai, UAE. Senior design project, Fall 2004. Implemented digital signal processing algorithms to design FIR and IIR filters, using Verilog HDL.

- **Communication Technology in Buildings:** Siemens Landis and Staefa, Dubai, UAE, Summer 2003. Designed an intelligent building management system.

PUBLICATIONS

Journal

- R. Bhagavatula, C. Oestges, and R. W. Heath, Jr., "A New MIMO Channel Model Representation Including Diversity, Orientation and De-Polarization Effects," submitted to the *IEEE Transactions on Vehicular Technology* in Dec. 2008, revised May 2009.
- R. Bhagavatula, R. W. Heath, Jr., A. Forenza, and S. Vishwanath, "Capacity Analysis Methodology and Performance Evaluation of MIMO Arrays for Multimedia Delivery in Aircraft," *IEEE Vehicular Technology Magazine*, vol. 3, no. 4, pp. 31 – 38, Dec. 2008.
- R. Bhagavatula, R. W. Heath, Jr., A. Forenza, N. J. Kirsch, and K. Dandekar, "Impact of Mutual Coupling on Adaptive Switching between MIMO Transmission Strategies and Antenna Configurations", (invited), *Wireless Personal Communications Journal*, May 2008.
- R. Bhagavatula and R. W. Heath, Jr., "Adaptive Limited Feedback for Sum-Rate Maximizing Beamforming in Cooperative Multicell Systems," in preparation for submission to *IEEE Transactions on Signal Processing*.

Conference

- R. Bhagavatula, B. Rao, and R. W. Heath, Jr., "Limited Feedback with Joint CSI Quantization for Multicell Cooperative Generalized Eigenvector Beamforming," submitted to *IEEE International Conference on Acoustics, Speech, and Signal Processing*, Mar. 2010.
- R. Bhagavatula and R. W. Heath, Jr., "Sum-Rate Maximizing Beamforming in Multicell Systems with Limited Feedback," to appear in the *Proc. of the IEEE Asilomar Conference on Signals, Systems, and Computers*, Nov. 2009.
- R. Bhagavatula, R. W. Heath, Jr., and C. Oestges, "Computing the Receive Spatial Correlation for a Multi-Cluster MIMO Channel Using Different Array Configurations," *Proc. of IEEE Global Telecommunications Conference*, pp. 1 - 5, Nov. 2008.
- R. Bhagavatula, R. W. Heath, Jr., A. Forenza, D. Piazza, and K. R. Dandekar, "A New MIMO Channel Representation Including Spatial Diversity, Array Orientation and Depolarization Effects," (invited), *Proc. of IEEE Antennas and Propagation Symposium*, pp. 1 - 4, Jul. 2008.
- R. Bhagavatula, R. W. Heath, Jr., A. Forenza, D. Piazza, and K. R. Dandekar, "Impact of Mutual Coupling and Antenna Efficiencies on Adaptive Switching Between MIMO Transmission Strategies," *Proc. of IEEE Vehicular Technology Conference*, pp. 749 - 753, Oct. 2007.
- R. Bhagavatula, R. W. Heath, Jr., and S. Vishwanath, "Optimizing MIMO Antenna Placement and Array Configurations for Multimedia Delivery in Aircraft," *Proc. of IEEE Vehicular Technology Conference*, pp. 425 - 429, Apr. 2007.
Note: Received best student paper award at conference.
- R. Bhagavatula, A. Forenza, and R. W. Heath, Jr., "Impact of Antenna Array Configurations on Adaptive Switching in MIMO Channels," *Proc. of International Symposium on Wireless Personal Multimedia Communications*, Sep. 2006.

Industry Publications

- R. Bhagavatula, R. W. Heath, Jr., and K. Linehan, "Performance Evaluation of MIMO Base Station Antenna Designs," *Antenna Systems and Technology Magazine*, vol. 11, no. 6, pp. 14 -17, Nov./Dec. 2008.
- R. Bhagavatula, R. W. Heath, Jr., and S. Vishwanath, "MIMO Antenna Placement for Multimedia Delivery in Boeing Aircrafts," *WNCG Networker*, Aug. 2006.

Poster Presentations

- “A New Expression to Compute Spatial Correlation between Received Signals of a Multiple Antenna System,” presented at the *IEEE Communication Theory Workshop*, May 2008.
- “A New MIMO Channel Model Including Diversity, Orientation and Depolarization Effects,” delivered at *URSI/USNC 2008 National Radio Science Meeting*, Jan. 2008.
Note: The presentation was given by Prof. Robert W. Heath, Jr.

HONORS AND SCHOLARSHIPS

- Awarded the *Best Student Paper* in the IEEE Vehicular Technology Conference – Spring 2007, held in Dublin, Ireland.
- Recipient of the *Aileen S. Andrew Foundation Fellowship* awarded by Andrew Corporation for 2007.
- Recipient of the *David Bruton Jr. Fellowship* awarded by the graduate school of The University of Texas at Austin in 2007 and 2009.
- Winner of the *Chancellor's gold medal*, awarded by Birla Institute of Technology and Sciences, Pilani, for being the only student in more than a hundred to secure a GPA of 10/10.
- *Merit Scholarship* - all the four years of B.S. (Hons.) in Birla Institute of Technology and Sciences, Dubai.
- *Merit Scholarship* - Grades 11, 12 in Nalanda Junior College of Sciences and Arts, India.
- Recipient of the *Swami Vivekananda School Scholarship*, awarded by the Swami Vivekananda Pratisthan, India, in 1996.

ACHIEVEMENTS

- Head of the Student Education Committee in Birla Institute of Technology and Sciences, Dubai.
- Senior Editor of the college newsletter in Birla Institute of Technology and Sciences, Dubai.
- Stood second in the inter-city essay writing competition held in Vijayawada, Andhra Pradesh, India in 1996.

ACTIVITIES

- Volunteer for the IEEE Communications Theory Workshop 2008.
- Reviewer for IEEE Transactions on Vehicular Technology, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Microwave Theory and Techniques, IEEE Vehicular Technology Conference, IEEE International Conference on Communication Systems, IEEE Global Telecommunications Conference.

SKILLS

MATLAB, LabView, C, C++, AutoCAD, Verilog HDL, HTML