Urbashi Mitra

Professor, Ming Hsieh Department of Electrical Engineering
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RESEARCH AREAS: joint communication and sensing, wireless network control, sensor networks, underwater acoustic communications, collaborative communication, sparse estimation methods, information theory, cross-layer design, ultra-wideband communications, adaptive & blind equalization techniques, and code-division multiple-access communications for personal wireless and mobile applications.

PROFESSIONAL PREPARATION:

1990-1994	**Princeton University** Ph.D., Electrical Engineering, May 1994
1984-1989	**University of California, Berkeley** MS, Electrical Engineering & Computer Science, February 1989; BS, Electrical Engineering & Computer Science with high honors, May 1987.

APPOINTMENTS:

2001 - present **The University of Southern California** *Professor* (2005-), *Associate Professor*(2001-2005), *Co-Director, Communication Sciences Institute* (2004-2007)
2009-2010 **Technical University of Delft, the Netherlands** *Visiting Scholar*
Fall 2003 **Stanford University** *Visiting Scholar*
Fall 2002 **Rice University** *Texas Instruments Visiting Associate Professor*
1994-2000 **The Ohio State University** *Assistant Professor, Associate Professor*

SELECTED AWARDS & HONORS:
IEEE Globecom Signal Processing for Communications Symposium **Best Paper Award** (2012), SPCOM Student **Best Paper Award**, July 2012 (faculty advisor), NAE Gilbreth Lecturer (2012, one of four), NAE China-America Frontiers of Engineering Symposium Speaker (2011), USC Center for Excellence in Research Fellow (2010-2013), **Best Paper Award**, Applications and Systems Track, 2009 IEEE International Conference on Distributed Computing in Sensor Systems, USC Remarkable Woman Award (2009), IEEE Fellow (2007), NAE Frontiers in Engineering Symposium Participant (2003), 2002 Texas Instruments Visiting Faculty Fellowship, 2001 Okawa Foundation Award, 1996 National Science Foundation CAREER award, 2000 Lumley Award for Research (Ohio State College of Engineering), 1994 NSF International Post-doctoral Fellowship.

SELECTED PROFESSIONAL ACTIVITIES:
Associate Editor (IEEE Transactions on Signal Processing) (2012-), TPC Co-Chair, ISIT 2014, Honolulu, HI, TPC Co-Chair, ITW 2014, Hobart Tasmania, Guest Editor IEEE JSAC (Underwater Acoustic Communications and Networks Q4 2008), Associate Editor (IEEE Transactions on Information Theory)(2007-2012), Associate Editor (IEEE Journal on Oceanic Engineering)(2006-2011), Associate Editor (IEEE Transactions on Signal Processing)(2012-present) Co-Chair, Workshop on Underwater Networks (with Mobicom 2006), IEEE Information Theory Board of Governors (2002-2008, 2012-2014), IEEE Signal Processing Society - Signal Processing for Communications and Networks Technical Committee (2012-2014), Finance Chair (ICASSP'08), Tutorials Chair (ISIT'07), Associate Editor (IEEE Transactions on Communications) (1996-2001).

SELECTED PUBLICATIONS:

[1] C. Choudhuri, Y.-H. Kim, U. Mitra, **Causal State Communication**, submitted to the *IEEE Transactions on Information Theory*, accepted November 25, 2012.

[2] M. Levorato, U. Mitra, and M. Zorzi*, **Cognitive Interference Management in Retransmission-Based Wireless Networks**, *IEEE Transactions on Information Theory*, vol.58, no.5, pp.3023–3046, May 2012.

[3] W. Zhang, U. Mitra, and M. Chiang*, **Optimization of Amplify-and-Forward Multicarrier Two-Hop Transmission**, IEEE Transactions on Communications, vol. 59, no.5, May 2011, pp.1434-1445.

[4] T. Xu, Z. Tang, G. Leus and U. Mitra, **Multi-Rate Block Transmission over Wideband Multi-Scale Multi-Lag Channels**, *IEEE Transactions on Signal Processing*, accepted 10/19/2012.

[5] S. Yerramalli, M. Stojanovic*, and U. Mitra **Partial FFT Demodulation: A Detection Method for Doppler Distorted OFDM Systems**, submitted to the *IEEE Transactions on Signal Processing*, October 2011, accepted with minor revisions 5/4/12.

[6] M. Levorato, U. Mitra, and A. Goldsmith **Structure-Based Learning in Wireless Networks via Sparse Approximation,** submitted to the *Recent Advances in Optimization Techniques in Wireless Communication Networks special issue for the EURASIP Journal on Wireless Communications and Networking.* , accepted 5/2/12, (**invited paper**).

[7] W. Zhang, M. Stojanovic*, and U. Mitra, **Analysis of a Linear Multihop Underwater Acoustic Network**, IEEE Journal on Oceanic Engineering, vol. 35, no. 4, October 2010, pp. 961 - 970.

[8] M. Vajapeyam and U. Mitra, **Performance Analysis of Distributed Space-Time Coded Protocols for Wireless Multi-hop Communications**, IEEE Transactions on Wireless Communications, vol.9, no.1, pp.122-133, January 2010.

[9] C. Mesookho, U. Mitra, and S. Narayanan , **On Energy Based Acoustic Source Localization for Sensor Networks**, IEEE Transactions on Signal Processing, vol. 56, no. 1, ppg. 365–377, January 2008.

[10] S. Vedantam, U. Mitra, and A. Sabharwal*, **Distortion Bounds for the Estimation of Time-Varying Channels in Multihop Sensor Networks**, ACM Transactions on Sensor Networks, vol. 6, no. 4, July 2010, pp. 33:1–33:33.

COLLABORATORS AND OTHER AFFILIATIONS:

Recent Collaborators

Murali Annavaram (USC), Giuseppe Caire (USC), Mung Chiang (Princeton), Franz Hover (MIT), Andrea Goldsmith (Stanford), John Heidemann (USC-ISI), C.-C. Jay Kuo (USC), Geert Leus (Technical University of Delft), Shri Narayanan (USC), Mike Neely (USC), Antonio Ortega (USC),Osvaldo Simeone (NJIT), James Preisig (WHOI), Ashutosh Sabharwal (Rice University), Milica Stojanovic (Northeastern), Gaurav Sukhatme (USC), Michele Zorzi (University of Padvoa).

Past and Current Ph.D. Advisees

Emre Aktas, Ph.D. 6/02 (Assistant Professor, Haceppette University, Ankara, Turkey), Jiangxin Chen, M.S. 6/97 (Qualcomm), Shuzhen Chen, M.S. 10/96(Compression Labs Inc.), Wanshi Chen, Ph.D. 12/06 (Qualcomm), Chiranjib Choudhuri, Ph.D. 12/12, Sunav Choudhury, Ph.D. expected 5/15, Li-Chung Chu, Ph.D. 6/99 (Ericsson), Stefan Franz, Ph.D. 8/06 (Rhode-Schwartz), Jifeng Geng, Ph.D. 6/04 (Qualcomm), Keerthi Govind, M.S. 6/96 (Qualcomm), Songze Li, Ph.D. expected 5/16, Chartchai Meesookhoo, Ph.D. 5/07, Zhouyue Pi, M.S. 8/00 (Nokia), Vishnu Ratnam, Ph.D. expected 5/17, Adolfo Recio, M.S. 12/98 (ImpSat), Abhay Sharma, M.S. 10/00 (Analog Devices Inc.), Siwaruk Siwamogsatham, M.S. 6/97, Radha Srinivasan, M.S. 9/98 (LinCom), Gautam Thatte, Ph.D. 7/10, Madhavan Vajapeyam, Ph.D. 1/07 (Qualcomm), Satish Vedantam, Ph.D. 5/09 (Bloomberg Communications), Sau-Hsuan Wu, Ph.D. 9/03 (Assistant Professor, National Tsing Hua University , Hsinchu, Taiwan), Srinivas Yerramalli, Ph.D. 12/12, Daphney Zois, Ph.D. expected 12/13.

Past and Current Postdoctoral Scholars

Dr. Geoffrey Hollinger (post-doctoral researcher at USC 2010 -) (with G. Sukhatme), Dr. Daniel Liu Northrup Grumman, Los Angeles, CA)(post-doctoral researcher at USC 2008-2009)(with G. Caire) (; Dr. Wenyi Zhang (Professor, University of Science and Technology, China) (post-doctoral researcher at USC 2006-2008); Dr. Marco Levorato (Royal Institute of Technology, Stockholm, Sweden),(visitor from University of Padova, Italy 2008, postdoc 2010 -2012), Dr. Cecilia Carbonelli (Infineon, Munich Germany) (visitor and post-doctoral researcher at USC); Dr. Mehmet Akar (Assistant Professor, Bogazici University, Istanbul, Turkey) (post-doctoral researcher/research assistant professor at USC 2001-2003) Dr. Monica Fernandez Bugallo (Associate Professor, SUNY Stonybrook) (post-doctoral researcher at USC 2001).

Advisors

H. Vincent Poor (Ph.D.,Princeton University), Edwin Lewis (M.S.,University of California, Berkeley).