

Jarir Fadlullah

Ph.D. Candidate in Electrical Engineering, Penn State University
(Expected Graduation: December 2009)

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Objective

- Seeking internship or full-time position in wireline/wireless data communications and networking.

Skills

- Proficient in end-to-end simulations of communication systems with MATLAB, C/C++, MS VB and QBASIC.
- Advanced understanding of IEEE 802.3 and 802.11 standards.
- Advanced understanding of MIMO, CDMA, OFDM, and DMT systems.
- Understanding of WiMAX and UWB systems.
- Knowledge of trellis coded modulation, turbo coding, LDPC coding.
- Experience in network monitoring automation with TCL scripting language.
- Experience with TTCN programming language for testing WiMAX and TCP/IP protocols.
- Experience in network traffic measurement with Ixia IxChariot software suite and Ethereal.
- Hands-on experience with Vector Signal Generators/Analyzers, Channel Emulators, Programmable Attenuators, RF Power Meters, 802.16d Base/Subscriber Stations, 80xx Microprocessors/controllers.
- Experience with IBM PC Assembly for programming microprocessors/microcontrollers.

Employments

Spring 2006, Summer 2008 until Present, Graduate Research Assistant, Center for Information & Communications Technology Research, Pennsylvania State University, University Park, PA 16802

- Participated in several projects on high-speed communication system design, and active laser imaging.
- Examined feasibility of 40G/100G data transmission over UTP/STP copper cable such as CAT-6/7.
- Designed SISO/MIMO MMSE and Adaptive Equalizers and Cancellers, and Coset-coded Modulation system, for high-speed data communication over copper cables.
- Simulated diversity MIMO Atmospheric Optical Communication system models.
- Worked on channel modeling for cloud-obscured and turbulent media for free-space optical communications.
- Investigated active laser imaging scenarios through cloud obstructions and turbulent atmosphere.
- Implemented blind deconvolution algorithms, e.g. Simulated Annealing, NAS-RIF, iterative blind deconvolution, for turbulence-degraded images.
- Applied a novel blind deconvolution technique based on approximate factorization of bivariate polynomials.

Fall 2006, Spring/Summer/Fall 2007, Spring 2008, Graduate Teaching Assistant, Department of Electrical Engineering, Pennsylvania State University, University Park, PA 16802

- Taught Laboratory Component of EE 210 (Circuits and Devices) for 4 semesters.
- Demonstrated and evaluated circuit design using amplifier chips, op-amps, tone control circuits, and filters.
- Involved teaching simulation and design in PSpice and Cadence PCB routing software to sophomore students.

Summer 2006, Graduate Intern Technical, Wireless Networking Lab, Corporate Technology Group, Intel Corp., Hillsboro, OR 97123

- Developed TTCN adapters for automating WiMAX end-to-end network performance evaluation tests.
- Translated Test Purposes into TTCN, conducted tests, and automated processing of test results.
- Involved hands-on work with TCL scripting, TTCN, Agilent Vector Signal Analyzer 89600S, Agilent Vector Signal Generator E4438C, Redline AN-100U-SC WiMAX-certified 802.16d Base Station, Redline SUO 802.16d Subscriber Station, Rohde & Schwarz Power Meter NRPZ-91, and associated software and their API's.

03/04 - 07/05, Lecturer, Department of Electrical and Electronic Engineering, IUT, Dhaka, Bangladesh

- Taught undergraduate theory and laboratory courses on Digital Electronics, DSP, microprocessor and microcontroller-based design, and VLSI design.
- Organized workshop on Microprocessor/Microcontroller-based Industrial Production Methods.

Fall 2003, Trainee Student, Pacific Bangladesh Telecom Limited, Dhaka, Bangladesh

- Trained on Radio Planning for CDMA cellular sites.
- Training covered technical aspects of Switch Planning, Network Management, Performance Evaluation, and Transmission Planning.

Summer 2003, Trainee Student, Haripur 100MW Power Station, Narayanganj, Bangladesh

- Trained on operating and maintaining gas turbine generators, lubrication and cooling systems, load control and distribution through LDC Narayanganj.
- Trained on Bentley-Nevada Vibration Monitoring System.

Honors and Awards

- IEEE Student Travel Grant for attending Military Communications Conference, San Diego, CA, November 2008.
- Funding for Excellence in Graduate Recruitment (FEGR) from College of Engineering, Pennsylvania State University, Fall 2005.
- B.Sc. in EEE awarded with Honors from Deptt. of EEE, Bangladesh University of Engineering & Technology (BUET), Feb. 2004.
- Placed in Dean's List of the Faculty of Electrical & Electronic Engineering, BUET (2002, 2003, 2004).
- Ranked 6th among approx. 3000 participants in BUET entrance examination, 1998.
- Ranked 4th among approx. 100,000 participants in the Higher Secondary School Certificate Public Examination, Dhaka Education Board, Bangladesh, 1997.
- Ranked 10th among approx. 150,000 participants in the Secondary School Certificate Public Examination, Dhaka Education Board, Bangladesh, 1995.
- Received Prime Minister's Award for outstanding achievement in the S.S.C. Examination, 1995.
- Received Junior scholarship (Talent Pool), Dhaka Education Board, Bangladesh, 1993.

Education

8/05-present **Ph.D. Electrical Engineering**, Pennsylvania State University, University Park, PA

- Advisor: Prof. Dr. Mohsen Kavehrad.
- Ph. D. Thesis: A Generalized Multiple-Input Multiple-Output Approach to Wired and Wireless Communication Systems Analysis. This work involves a broad and extensive investigation of MIMO techniques, including channel modeling and mitigation approaches, in wired and wireless communication systems, specifically UTP/STP copper cables, RF scattering channels, and free space laser communication channels.

1/98-2/04 **B.Sc. (Hons.) in Electrical Engineering**,

Bangladesh University of Engineering & Technology, Dhaka, BANGLADESH

- Majored in communication systems.
- B.Sc. thesis: Planning & Design of a CDMA-based Cellular Network.

Publications

(Underlined text indicate presenter in conference)

- A. Enteshari, Jarir Fadlullah, M. Kavehrad, "*Joint Channel and Echo Impulse Response Shortening for High-Speed Data Transmission*", IEEE Systems Journal. (Accepted for publication)
- A. Enteshari, Jarir Fadlullah, M. Kavehrad, "*High-Speed Access over Copper: Rate Optimization and Signal Construction*", Electronics & Telecommunications Research Institute (ETRI) Journal (ISSN 1225-6463), Korea. (Accepted for publication)
- M. Kavehrad, Z. Hajjarian, Jarir Fadlullah, "*MIMO Free Space Optical Communications in Turbid and Turbulent Media*", Journal of Communications (JCM) Special Issue on Optical Wireless Communications, Academy Publisher, Oulu, Finland. (Invited)
- Z. Hajjarian, M. Kavehrad, Jarir Fadlullah, "*Analysis of Wireless Optical Communications Feasibility in Presence of Clouds Using Markov Chains*", IEEE Journal on Selected Areas in Communications (JSAC) Special Issue on Optical Wireless Communications. (Accepted for publication)
- Jarir Fadlullah, A. Enteshari, M. Kavehrad, "*MIMO Decision Feedback Equalization for Multi-Gigabit Ethernet over Copper*", IEEE CCECE, St. John's, NL, Canada, May 2009.
- A. Enteshari, M. Kavehrad, Jarir Fadlullah, "*Signal Construction for High-Speed Access over Copper wiring*", IEEE CCECE, St. John's, NL, May 2009.
- Z. Hajjarian, Jarir Fadlullah, M. Kavehrad, "*Use of Markov Chain in Atmospheric Channel Modeling of Free-Space Laser Communications*", IEEE MILCOM, San Diego, CA, November 2008.
- Jarir Fadlullah, A. Enteshari, "*Coding, Modulation and Joint Processing for High-Speed Communications*", College of Engineering Research Symposium, Pennsylvania State University, PA, April 2008.
- M. S. Rahman, T. Hasan, M. A. Islam, S. M. Maidul Hassan, Jarir M. Fadlullah, "*A Novel Approach to Combine Data Encryption and Channel Coding for Secure and Reliable Transmission*", 8th ICCIT 2005, Dhaka, Bangladesh, December 2005.

Communication Skills

- Fluent in spoken and written English; communication abilities in spoken and written French.
- Advanced presentation skills in Microsoft Powerpoint and Flash.

Professional Activities

- Student Member of IEEE.
- Reviewed papers submitted to IEEE Journal on Selected Areas in Communications.

Reference:

- Available upon request