

JAVED AKHTAR

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OBJECTIVES

To seek a position where my strong problem-solving and analytical skills will be utilized and provide me with the opportunity to expand my knowledge further. A self-motivated, hardworking research scholar, I have worked in mobile modem division for brief period, published paper in reputed journals, tutored undergraduates, and completed few projects. My experience as a researcher, in addition to my strong writing skills, ensures I will make a positive contribution within the team/department.

RESEARCH INTEREST

Transceiver design in MIMO-OFDM system, Resource allocation in Massive-MIMO system, Distributed parameter estimation in wireless sensor networks, Acoustic communication, Optimization techniques in wireless communication, Stochastic optimization.

EDUCATION

Ph.D (pursuing) , SPCOM (EE dept.), IIT Kanpur	<i>July 2014 onwards</i>	<i>CPI: 8.0/10</i>
M.Tech , SPCOM (EE dept.), IIT Kanpur	<i>July 2013</i>	<i>CPI: 8.0/10</i>
B.E , Electron. & Commun. Engg., RGTU Bhopal	<i>July 2011</i>	<i>Score: 79.78%</i>
12th , CBSE	<i>April 2006</i>	<i>Score: 80.50%</i>
10th , CBSE	<i>April 2004</i>	<i>Score: 88.20%</i>

SCHOLASTIC ACHIEVEMENTS

- Awarded travel grant by ITS, SERB (DST, Govt. of India) - 2016.
- Awarded student travel grant by IEEE Communication Society to attend GLOBECOM 2016.
- Awarded TCS Research Fellowship. *January 2016-Present*
- Awarded PhD Fellowship, MHRD, Govt. of India. *July 2014-December 2015*
- Awarded best TA, Dept. of EE, IIT Kanpur, January 2013 for E.Sc 201A Lab.
- Secured All India rank 123, with 99.91 percentile in GATE (ECE), 2011.
- Secured First Division with HONS. in B.E, 2011.
- Secured All India Rank 2106, with 97.98-percentile in GATE (ECE), 2010.

PUBLICATIONS

[Journals]:

- [1] "Non-Convex Stochastic Optimization," (Under Preparation).
- [2] **J. Akhtar**; and K. Rajawat, "Joint Antenna Selection and User Scheduling in a Fading ZF-Massive-MIMO Systems," IEEE Transactions on Wireless Communications, 2018 (About to be submitted).
- [3] **J. Akhtar**; and K. Rajawat, "Distributed Sequential Estimation in Wireless Sensor Networks," IEEE Transactions on Wireless Communications, vol. 17, no. 1, pp. 86-100, Jan. 2018.
- [4] Bedi, A.S.; **Akhtar, J.**; Rajawat, K.; Jagannatham, A.K., "BER-Optimized Precoders for OFDM systems with Insufficient Cyclic Prefix," in IEEE Comm. Letters, vol.20, no.2, pp. 280-283, Feb. 2016.

[Conferences]:

- [1] **J. Akhtar**; and K. Rajawat, "Quality-of-Service Constrained User and Antenna Selection in Down-link Massive-MIMO Systems," IEEE Asilomar, Pacific Grove(CA)USA, 2018 (Awaiting decision).
- [2] **J. Akhtar**; and K. Rajawat, "QoS-based Antenna and User Selection in Large-Scale Fading for Massive-MIMO Systems," IEEE SPAWC, Greece, 2018 (Accepted).
- [3] **Akhtar, J.**; Bedi, A.S.; Rajawat, K.; Jagannatham, A.K., "BER-Optimized Robust Precoder design for MIMO-OFDM systems with Insufficient CP," in IEEE GLOBECOM, 2016, Washington, DC USA.

WORK EXPERIENCE

Ericsson India Global Pvt. Ltd., Bangalore

October 2013-July 2014

Worked at the modem division in the validation team on GSM, WCDMA & HSPA technologies.

TUTORSHIP

Theory Tutor of "Introduction to Electronics (ESc-201A)".

August 2017-November 2017

WORKSHOPS ATTENDED

5G Spectrum Roadmap: Transforming the Digital Landscape in India, Delhi *Nov'17*

· **Mini-Symposium on Computat. and Optim. in Sciences and Engg., IIT Kanpur** *Feb'16*

· **Joint Telematics Group/IEEE Inf. Theory Society, IISc Bangalore** *July 2015*

- 4-day workshop on Information-theoretic Methods in High Dimensional Statistics & Multiterminal Communication Theory.

PROJECTS

Signal Processing Assisted Network Monitoring (Sponsored By : BSNL) *2014-2015*

- **Supervisor:** Dr. Ketan Rajawat

The data generated from all the BNGs(Broadband Network Gateway) across India were used to develop a model through which the pattern/trends of network can be understood. The regressive model provided, can help in taking prompt proactive measure to avoid any damage to the network element due to network failure that impacts severely the end-users & applications and can cause huge losses.

B.Tech Project

January 2010 - May 2010

- **Supervisor:** Rita Jain, Department of ECE, LNCT, Bhopal

Title: Hardware implementation of 3B-4B Block Coding system

Abstract: 3B-4B Block Coding System was designed & simulated on VHDL. Also the hardware model of the system was implemented on a PCB.

ACADEMIC RESPONSIBILITIES

Teaching Assistant for "An Introduction to Information Theory" MOOC-NPTEL (funded by MHRD, Govt. of India) July 2016 - September 2016

Technical Paper Reviewed: (As a reviewer/Assigned by my supervisor)

- IEEE Transactions on Circuits and Systems I - 2017.
- IEEE Transactions on Communications - 2017.
- National Conference on Communications (NCC) - 2017.
- IEEE Communications Magazine - 2016.
- International Conference on Signal Processing and Communications (SPCOM) - 2016.
- IEEE Wireless Communications and Networking Conference (WCNC) - 2016.
- IEEE UP Section Conference on Electrical, Computer and Electronics (UPCON) - 2015.

TERM PAPERS

Term Paper in Convex Optimization in Signal Processing

April 2015

· **Instructor:** Dr. Ketan Rajawat, Department of Electrical Engineering, IIT Kanpur

Title: Application of L_1 minimization method for FIR filter design.

FIR filter was designed by modeling the L_1 minimization problem as L_1 -regularized least square, Basis Pursuit denoise and Bound Constrained Quadrature Program. The various models, met the design requirements such as small dynamic range of filter coefficients, sparsity of filter coefficients etc.

Term Paper in Non-linear Regression

November 2014

· **Instructor:** Dr. Debasis Kundu, Department of Mathematics and Statistics, IIT Kanpur

Title: Statistical analysis of Non-Linear regression model for given data.

Applied Prony's and Osborne's Algorithm on given set of data and also analyzed some statistical properties on the estimated non-linear parameters for another set of data.

TECHNICAL STRENGTHS

Programming Languages	C, Assembly Level Language (8085)
Software	MATLAB, L ^A T _E X, Microsoft Office
Basic working Knowledge	Python, HTML, VHDL
Tools	Atlet, Wolverine, Lins

TEACHING ASSISTANTSHIP

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| 1. Information and Coding Theory "EE 624". | <i>July 2016-November 2016</i> |
| 2. Convex Optimization in SP/COM "EE 609". | <i>January 2016-April 2016</i> |
| 3. Coordinated and monitored the Lab sessions for "EE 673 (DCN)". | <i>July 2015-November 2015</i> |
| 4. Design and video demonstration of experiment 10 for "E.Sc 201A Lab". | <i>January 2015 - April 2015</i> |
| 5. Video demonstration of "E.Sc 201 A Lab experiments". | <i>July 2012-November 2012</i> |

RELEVANT COURSEWORK

Convex Optimization, Linear and Non-linear Regression, OFDM Transceiver Optimization, Detection and Estimation Theory, Wireless Communication, Information and Coding Theory, Probability and Measure Theory, Digital communication Networks, Linear Algebra.

SUMMER INTERNSHIP

BSNL (Govt. of India)

June 2010-July 2010

Training on basic telephony, GSM, Broadband Services at BSNL Telephone Exchange.