

CONTACT INFORMATION	Appt. A, 3463, Lake Austin Blvd, Austin, TX 78703, USA.	+1-512-975-1883 ✉ anumali@utexas.edu 🌐 http://www.anumali.com
RESEARCH INTERESTS	Millimeter Wave Communications, Massive MIMO Communications, Compressed Sensing.	
EDUCATION	<p>Ph.D. in Electrical Engineering (Aug. 2015 - present) The University of Texas at Austin.</p> <ul style="list-style-type: none"> • Advisor: Prof. Robert W. Heath Jr. • Courses: Convex Optimization, Machine Learning, Space-Time Communication, Information Theory, Optimization Under Uncertainty, and Linear Programming. <p>M.S. in Electrical Engineering (Sep. 2012 - May 2014) King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.</p> <ul style="list-style-type: none"> • Dissertation: <i>On Compensating the OFDM Physical Layer Impairments Using Compressive Sensing.</i> (available for download at http://www.anumali.com) • Advisors: Prof. Tareq Y. Al-Naffouri and Prof. Oualid Hammi. • Courses: Stochastic Processes, Digital signal processing I, Digital communication I, Digital communication II, Wireless and personal communications, Adaptive filtering and applications, Linear control systems. • Audited Courses: Compressive sensing <p>B.S. in Electrical Engineering (Aug. 2007 - Jul. 2011) COMSATS Institute of Information Technology, Islamabad, Pakistan.</p> <ul style="list-style-type: none"> • Focus area: Telecommunications. 	
RESEARCH EXPERIENCE	<p>Graduate Research Assistant (Aug. 2015 - present) Wireless Networking and Communications Group, Department of Electrical and Computer Engineering, The University of Texas at Austin.</p> <ul style="list-style-type: none"> • Supervisor: Prof. Robert W. Heath Jr. • Description: Working on utilizing out-of-band information for mmWave link establishment. <p>Graduate Technical Intern (May 2017 - Aug. 2017) Qualcomm R& D, Qualcomm, Bridgewater, NJ.</p> <ul style="list-style-type: none"> • Supervisor: Dr. Shailesh Patil • Description: Worked on V2V communication for autonomous vehicles. <p>Graduate Technical Intern (May 2016 - Aug. 2016) Intel Labs, Intel Corporation, Santa Clara, CA.</p> <ul style="list-style-type: none"> • Supervisor: Dr. Nageen Himayat. • Description: Worked on mmWave system design. <p>Research Engineer (Jul. 2014 - Jul. 2015) Electrical Engineering Department, King Abdullah University of Science and Technology.</p> <ul style="list-style-type: none"> • Supervisor: Prof. Tareq Y. Al-Naffouri. • Description: Worked on stochastic geometry, applications of compressed sensing, and analysis of adaptive filters. <p>Visiting Research Scholar (Dec. 2014 - Feb. 2015) Electrical Engineering Department, California Institute of Technology.</p> <ul style="list-style-type: none"> • Supervisor: Prof. Babak Hassibi. • Description: Worked on topological interference management for wireless networks. <p>Visiting Research Scholar (Jan. 2014 - Jun. 2014) Electrical Engineering Department, King Abdullah University of Science and Technology.</p> <ul style="list-style-type: none"> • Supervisor: Prof. Tareq Y. Al-Naffouri. 	

- Description: Continued research towards my M.S. thesis with main emphasis on Bayesian narrowband interference rejection in SC-FDMA systems.

Research Associate (Aug. 2011 - Sep. 2012)

Electrical Engineering Department, COMSATS Institute of Information Technology.

- Supervisor: Prof. Shafayat Abrar.
- Description: Conducted research on the design, application and analysis of blind adaptive algorithms based on minimum entropy deconvolution principle.

**JOURNAL
PUBLICATIONS**

PUBLISHED:

- J1 **A. Ali**, M. Masood, M. S. Sohail, S. Al-Ghadhban and T. Y. Al-Naffouri, "Narrowband Interference Mitigation in SC-FDMA Using Bayesian Sparse Recovery", *IEEE Trans. Signal Process.*, vol. 64, no. 24, pp. 6471-6484, 2016.
- J2 A. Zaib, M. Masood, **A. Ali**, W. Xu, and T. Y. Al-Naffouri, "Distributed Channel Estimation and Pilot Contamination Analysis for Massive MIMO-OFDM System", *IEEE Trans. Commun.*, vol. 64, no. 11, pp. 4607-4621, 2016.
- J3 **A. Ali**, A. Al-Rabah, M. Masood and T. Y. Al-Naffouri, "Receiver-based Recovery of Clipped OFDM Signals for PAPR Reduction: A Bayesian Approach", *IEEE Access*, vol. 2, pp. 1213-1224, Oct. 2014.
- J4 **A. Ali**, S. Abrar, A. Zerguine and A. K. Nandi, "Tracking Performance of a Newton-Like Minimum Entropy Equalization Algorithm", *Signal Process.*, vol. 101, pp. 74-86, Aug. 2014.
- J5 D. S. Owodunni, **A. Ali**, A. A. Quadeer, E. B. Al-Safadi, O. Hammi and T. Y. Al-Naffouri, "Compressed Sensing Techniques for Receiver based Post-Compensation of Transmitter's Nonlinear Distortions in OFDM Systems", *Signal Process.*, vol. 97, pp. 282-293, Apr. 2014.
- J6 **A. Ali**, O. Hammi and T. Y. Al-Naffouri, "Compressed Sensing based Joint-Compensation of Power Amplifier's Distortions in OFDMA Cognitive Radio Systems", *IEEE J. Emerg. Sel. Topics Circuits Syst.*, vol. 3, no. 4, pp. 508-520, Dec. 2013.
- J7 S. Abrar, **A. Ali**, A. Zerguine and A. K. Nandi, "Tracking Performance of Two Constant Modulus Equalizers", *IEEE Commun. Lett.*, vol. 17, no. 5, pp. 830-833, May 2013.

SUBMITTED AND UNDER PREPARATION:

- J8 **A. Ali**, N. G.-Prelicic, and R. W. Heath Jr., "Millimeter Wave Beam-Selection Using Out-of-Band Spatial Information", *submitted to IEEE Trans. Wireless Commun.*
- J9 N. G.-Prelicic, **A. Ali**, V. Va, and R. W. Heath Jr., "Millimeter Wave communication with out-of-band information", *submitted to IEEE Commun. Mag.*
- J10 **A. Ali**, N. G.-Prelicic, and R. W. Heath Jr., "Spatial Covariance Estimation for Millimeter Wave Hybrid Systems Using Out-of-Band Information", *under preparation.*

**CONFERENCE
PUBLICATIONS**

PUBLISHED:

- C1 **A. Ali**, and R. W. Heath Jr., “Compressed Beam-Selection in Millimeter Wave Systems With Out-of-Band Partial Support Information”, to appear in *Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, 2017.
- C2 **A. Ali**, N. G.-Prelcic, and R. W. Heath Jr., “Estimating Millimeter Wave Channels using Out-of-Band Measurements”, in *Proc. Inf. Theory Appl. (ITA) Wksp*, 2016.
- C3 S. Al-Shuhail, **A. Ali**, and T. Y. Al-Naffouri, “Peak-to-average power ratio reduction in interleaved OFDMA systems”, in *Proc. IEEE Int. Symp. Signal Process. Info. Tech. (ISSPIT)*, 2015.
- C4 **A. Ali**, H. ElSawy, T. Y. Al-Naffouri, and M.-S. Alouini “Narrowband Interference Parameterization for Sparse Bayesian Recovery”, in *Proc. IEEE Int. Conf. Commun. (ICC)*, 2015.
- C5 **A. Ali**, M. Masood, S. Al-Ghadhban and T. Y. Al-Naffouri, “Bayesian Narrowband Interference Mitigation in SC-FDMA”, in *Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, 2015.
- C6 **A. Ali**, A. Al-Zahrani, T. Y. Al-Naffouri, “Receiver Based PAPR Reduction in OFDMA”, in *Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, 2014.
- C7 A. Al-Rabah , M. Masood, **A. Ali** and T. Y. Al-Naffouri, “Receiver-Based Bayesian PAPR Reduction in OFDM”, in *Proc. Eur. Sign. Proc. Conf. (EUSIPCO)*, 2013.
- C8 **A. Ali** and S. Abrar, “Adaptive Minimum Entropy Beamforming Algorithms for Narrowband Signals”, in *proc. Emerg. Trends Appl. Inf. Commun. Technol. (IMTIC)*, pp. 62-72, Springer Berlin Heidelberg, 2012.

**CONFERENCE
POSTERS**

- [1] **A. Ali**, and R. W. Heath Jr., “Beam-training in Millimeter Wave Using Out-of-Band Information”, *Texas Wireless Summit*, 2016.
- [2] **A. Ali**, M. Masood, H. ElSawy, M.-S. Alouini, and T. Y. Al-Naffouri, “Narrowband Interference Mitigation in SC-FDMA using Bayesian Sparse Signal Recovery”, in *King Abdullah University of Science and Technology - National Science Foundation Conference*, 2015.
- [3] **A. Ali**, and T. Y. Al-Naffouri, “PAPR Reduction in multi-user OFDM using Sparse Signal Recovery”, in *King Abdullah University of Science and Technology - National Science Foundation Conference*, 2014.
- [4] **A. Ali**, O. Hammi, and T. Y. Al-Naffouri, “Compressed Sensing Based Schemes to Mitigate Nonlinear Distortions in WiMAX Physical Layer”, in *Saudi Student Conference*, 2013.

PATENTS

- P1 **A. Ali**, D. S. Owodunni, O. Hammi, and T. Y. Al-Naffouri, “System and method for joint compensation of power amplifier’s distortions”, *US Patent 9,137,082*.

**TECHNICAL
REPORTS**

- R1 E. B. Al-Safadi, T. Y. Al-Naffouri, M. Masoor and **A. Ali**, “Nonlinear Distortion Reduction in OFDM from Reliable Perturbations in Data Carriers”.

AWARDS AND HONOURS	<p>Research Productivity Award from Off. Res., Innov., & Commerc. (ORIC), CIIT. (2013)</p> <p>Fully Funded Scholarship for postgraduate studies in KFUPM. (2012)</p> <p>Institute Gold Medal Award in Electrical Engineering. (2011)</p> <p>Campus Silver Medal Award in Electrical Engineering. (2011)</p> <p>1st position at open house project exhibition in CIIT. (2010)</p> <p>Talent Award from Study Aid Foundation for Excellence (SAFE). (2010)</p> <p>3rd undergraduate Project Award at 7th Int'l. Conf. on Frontiers of Info. Tech. (2009)</p> <p>2nd position at open house project exhibition in CIIT. (2009)</p>
STUDENT ADVISING	<p>Shamael Al-shuhail (Spring 2014 - Spring 2015) King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.</p> <ul style="list-style-type: none"> • Course: <i>Directed Research</i>, and <i>MS Thesis</i>. • Topic: OFDM Physical Layer impairments and Compressed Sensing. • Primary adviser: Prof. Tareq Y. Al-Naffouri. <p>Ali Al-Zahrani (Fall 2013) King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.</p> <ul style="list-style-type: none"> • Course: <i>Directed Research</i>. • Topic: Pilot based channel estimation in clipped OFDM. • Primary adviser: Prof. Tareq Y. Al-Naffouri.
TEACHING EXPERIENCE	<p>Lab Instructor and Grader COMSATS Institute of Information Technology, Islamabad, Pakistan.</p> <ul style="list-style-type: none"> • Microprocessor Systems and Interfacing. (Spring 2012) • Electronics-I, and Electric Circuit Analysis-I. (Fall 2011) <p>Teaching Assitant The University of Texas at Austin, Austin, TX.</p> <ul style="list-style-type: none"> • Wireless Communications Lab (Fall 2016) <p>King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.</p> <ul style="list-style-type: none"> • Digital Communication I (Fall 2013, Fall 2014) • Compressive Sensing (Spring 2014)
PROFESSIONAL SERVICE	<p>Referee Service</p> <ul style="list-style-type: none"> • <i>IEEE Transactions on Signal Processing</i> • <i>IEEE Transactions on Wireless Communications</i> • <i>IEEE Transactions on Communications</i> • <i>IEEE Transactions on Vehicular Technology</i> • <i>IEEE Access</i> • <i>IEEE Communication Letters</i> • <i>Signal Processing</i>
PROFESSIONAL EXPERIENCE	<p>Network Planning Intern (Jul. 2009 - Aug. 2009) Pakistan Telecommunication Company Ltd, Islamabad, Pakistan.</p>
PROFESSIONAL MEMBERSHIPS	<p>Student Member, Institute for Electrical and Electronics Engineers (IEEE) (since 2012)</p> <ul style="list-style-type: none"> • IEEE Signal Processing Society (since 2014) • IEEE Communications Society (since 2015) <p>Member, Pakistan Engineering Council (PEC) (since 2011)</p>

SKILLS

Programming Languages

Python, C++, MATLAB, GWBASIC.

Design and Simulation Tools

Wireless Insite, Advanced Design System, CST, HFSS, Proteus, Code Vision AVR, Simulink, Express PCB.

Applications

MS Office, L^AT_EX, HTML.
