

CONTACT INFORMATION	Appt. A, 3359, 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, 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, Information theory. <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 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.

UNDER PREPARATION:

- J8 **A. Ali**, N. G.-Prelcic, and R. W. Heath Jr., "Millimeter Wave Beam-Selection Using Out-of-Band Spatial Information.

**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

- Research Productivity Award** from Off. Res., Innov., & Commerc. (ORIC), CIIT. (2013)
- Fully Funded Scholarship** for postgraduate studies in KFUPM. (2012)
- Institute Gold Medal Award** in Electrical Engineering. (2011)
- Campus Silver Medal Award** in Electrical Engineering. (2011)
- 1st position** at open house project exhibition in CIIT. (2010)
- Talent Award** from Study Aid Foundation for Excellence (SAFE). (2010)
- 3rd undergraduate Project Award** at 7th Int’l. Conf. on Frontiers of Info. Tech. (2009)
- 2nd position** at open house project exhibition in CIIT. (2009)

STUDENT ADVISING

- Shamael Al-shuhail** (Spring 2014 - Spring 2015)
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.
- Course: *Directed Research*, and *MS Thesis*.
 - Topic: OFDM Physical Layer impairments and Compressed Sensing.
 - Primary adviser: Prof. Tareq Y. Al-Naffouri.
- Ali Al-Zahrani** (Fall 2013)
King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.
- Course: *Directed Research*.
 - Topic: Pilot based channel estimation in clipped OFDM.
 - Primary adviser: Prof. Tareq Y. Al-Naffouri.

**TEACHING
EXPERIENCE**

Lab Instructor and Grader

COMSATS Institute of Information Technology, Islamabad, Pakistan.

- Microprocessor Systems and Interfacing. (Spring 2012)
- Electronics-I, and Electric Circuit Analysis-I. (Fall 2011)

Teaching Assitant

The University of Texas at Austin, Austin, TX.

- Wireless Communications Lab (Fall 2016)

King Abdullah University of Science and Technology, Thuwal, Saudi Arabia.

- Information Theory (Spring 2015)
- Digital Communication I (Fall 2013, Fall 2014)
- Compressive Sensing (Spring 2014)

**PROFESSIONAL
SERVICE**

Referee Service

- *IEEE Transactions on Signal Processing*
- *IEEE Transactions on Wireless Communication*
- *IEEE Transactions on Vehicular Technology*
- *IEEE Access*
- *IEEE Communication Letters*
- *Signal Processing*
- *European Signal Processing Conference, 2014*
- *IEEE International Conference on Communications, 2015, 2017*
- *IEEE Vehicular Technology Conference, 2015, 2016*
- *IEEE Global Communications Conference, 2015*

**PROFESSIONAL
EXPERIENCE**

Network Planning Intern

(Jul. 2009 - Aug. 2009)

Pakistan Telecommunication Company Ltd, Islamabad, Pakistan.

**PROFESSIONAL
MEMBERSHIPS**

Student Member, Institute for Electrical and Electronics Engineers (IEEE) (since 2012)

- IEEE Signal Processing Society (since 2014)

Member, Pakistan Engineering Council (PEC) (since 2011)

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.
