ZOUHAIR AL-QUDAH
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Electrical and Communication Eng. Department
Al-Hussein Bin Talal University (AHU)
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Education

PhD Electrical Engineering, Southern Methodist University, **Texas** May 2013
GPA: 3.89/4.0
PhD Dissertation: *Dirty Paper Coding and Interference Cancellation for Wireless Communications*.

M.Sc. Electrical Engineering, Kalmar University College, **Sweden** Dec. 2006
GPA: 4.5/5.0
Master Thesis: *Performance of Multilevel Coded Modulation over AWGN and Multipath Fading Channels.*

B.Sc. Communication Engineering, Yarmouk University, Irbid, **Jordan**. Sep. 2002
Average: 71.4 % (**Good**)

Current H index and Citations

- My current **ResearchGate** score is 19.38 and Score: https://www.researchgate.net/profile/Zouhair_Al-Qudah
- My current research h-index is **7** and i10-index is **4** and my current total number of citations is **149**.
  Google Scholar Account: https://scholar.google.com/citations?user=435RhOYAAAAJ&hl=en

Employment History

Sep. 2017-Now	**Associate Professor**, **AHU**, Jordan.
Sep. 2016-Sep.2017	**Chairperson,** Electrical and Communication Engineering Dept., **AHU**.
Sep. 2013-Sep. 2017	**Assistant Professor**, AHU, Jordan.
Jan. 2010-Dec.2012	**Teaching Assistant,** Southern Methodist University, Dallas, Texas.
May.2012-Sep.2012	**Internship** at Research In Motion (RIM).(Blackberry Maker)
Sep. 2007-Aug.2009	**Full-Time Lecturer,** Yanbu College of Technology, Yanbu, Saudi Arabia
Mar.2007-Sep.2007	**Full-Time Lecturer,** Al-Quds University College, Amman, Jordan.
Sep.2002-Aug.2004	**System and Maintenance Engineer**, Communication Directorate-Public Security, Amman, Jordan

Departmental Activities at AHU

Sep. 2019-Aug. 2020	**Member**, AHU University Council.
Sep. 2015-Aug. 2018	**Member**, Faculty of Engineering Council.
2018-Now	**Member**, Promotion Committee
Sep. 2015-Sep. 2016	**Member,** Graduate Committee @ Computer Eng. Dept.
2014-2017	**Member**, selecting new Faculty Members
Sep. 2016-Sep.2017	**Member**, AHU Courses Schedule

Research Interests

Network Information Theory	4G/5G Communication networks
Error Control Coding	Cognitive Radio
Applied Mathematics and Optimizations	Wireless Communications

Master's Theses Supervised:

- Dima Turki, "Transmission Startegies over a Brodcast Channel Aided by a Relay", Yarmouk University, Irbid-Jordan, Dec. 2019.
- M. Alrwashdeh " Capacity of Cascade Relay Channel with orthogonal components ", Yarmouk University, Irbid-Jordan, Jan. 2015.
- L. Al-Hawari, " Capacity of Parallel Relay Channel with orthogonal components ", Yarmouk University, Irbid-Jordan, Jan. 2015.

Teaching Experience.

During my teaching career, I have taught the following courses at the undergraduate and graduate levels

Graduate Courses

- Introduction to Stochastic Process
- Modeling of Renewable Energy Systems
- Linear Optimizations.

Undergraduate Courses

- Graduation Project (More than 30 students have been successfully supervised.)
- Special Topics in Electrical Power Engineering (Renewable Energy Systems)

- Communication Networks.
- Satellite Communications.
- Mobile Communications.
- Communication Systems (Advanced).
- Digital Signal Processing
- Digital Communications and the Lab.
- Analog Communications and the Lab.
- Analog and Digital Communications.
- Probability and Random Process.
- Signals and Systems.
- Automatic Control Theory
- Measurements and Instrumentations
- Digital Logic
- Electronics I
- Electrical Circuits II
- Electrical Circuits I

In addition, I have the capability to teach the following courses

- Electrical Machines I
- Electromagnetics
- Engineering Mathematics I
- Engineering Mathematics II

Honors and Awards

- A scholarship to peruse Ph.D. degrees at SMU, USA, 2009-2013.
- A Scholarship to peruse Master degree from Kalmar University, Aug. 2005-Nov.2006, Sweden .
- Jordan-Army Scholarship with full tuition waiver for the undergraduate studies Sep. 1997-Aug. 2002.

Professional Reviewing Services:

- **Reviewer** for IEEE Journal on Selected Areas in Information Theory
- **Reviewer** for IEEE Wireless Communication Magazine
- **Reviewer** for IET Communications
- **Reviewer** for International Journal of Communication Systems
- **Reviewer** for Transactions on Emerging Telecommunications Technologies
- **Reviewer** for Advances in Electrical and Electronic Engineering
- **Reviewer** for IEEE Transactions on Communication Systems
- **Reviewer** for Physical Communications
- **Reviewer** for Electronic Letters

Publications:

Journal Articles

J26 ***(Q1)*** K. Darabkh , J. Zomot , **Z. Al-qudah,** A. Khalifeh, "Impairments-Aware Time Slot Allocation Model for Energy-constrained Multi-Hop Clustered IoT Nodes Considering TDMA and DSSS MAC Protocols", **Journal of Industrial Information Integration,** ***Elseiver,*** **Accepted.**

J27 ***(Q2)*** **Z. Al-qudah,** Mohd H.S. Alrashdan, and Khalid A. Darabkh "On the Capacity Region of the Multiple Access Half-Duplex Relay Channel", **Int'l J. of Communication Systems** (IJCS), Vol.34, Iss.17, Nov.2021.

J25 ***(Q1)*** **Z. Al-qudah,** A. Ababneh, "Broadcast Diamond Channel: Transmission Strategies and Bounds", **Journal of the Franklin Institue,** Vol.358, Iss.3, Feb. 2021.

J24 ***(Q2)*** **Z. Al-qudah,** M. Al Bataineh and A. Musa, "A Novel Multiple Access Diamond Channel Model", **Int'l J. of Communication Systems** (IJCS), Vol.33, Iss.17, Oct. 2020.

J23 ***(Q2)*** **Z. Al-qudah,** K. Darabkh "Achievable Rates of Gaussian Cognitive Interference Channel with Common Interference", **IET Communications,** Vol.14, Iss.16, Oct. 2020.

J22 ***(Q2)*** **Z. Al-qudah,** A. Alqudah**,** K. Darabkh "Transmission over Gaussian MIMO half-duplex relay channel ", **Physical Communication,** Vol.40, Jun. 2020.

J21 ***(Q2)*** K. Darabkh , J. Zomot , **Z. Al-qudah,** "EDB-CHS-BOF: Energy and Distance Based Cluster Head Selection with Balanced Objective Function Protocol", **IET Communications,** Vol.13, Iss.19, Nov. 2019.

J20 ***(Q2)*** **Z. Al-qudah** and A. Musa," On the Capacity of the State-dependent Interference Relay Channel", **Int'l J of Communication Systems** (IJCS), Vol.32, Iss.14, Sep. 2019.

J19 ***(Q2)*** W. Al-sawalmeh, **Z. Al-qudah,** and K. Darabkh, **"**Multiple Access Relay Channel: Achievable Rates over Orthogonal Channels", **Int'l J. of Electronics and Communications (AEU)**, *Elseiver*, Vol.109, Sep. 2019.

J18 ***(Q1)*** K. Darabkh, S. Odetallah, **Z. Al-qudah**, A. Khalifeh, and M.Shurman, "Energy-Aware and Density-Based Clustering and Relaying Protocol (EA-DB-CRP) for gathering data in wireless sensor networks", **Applied Soft Computing Journal**, Vol.80, Jul. 2019.

J17 ***(Q1)*** **Z. Al-qudah** and D. Rajan**,"** An Achievable Region for the Cognitive Interference Relay Channel**", IEEE Transactions on Cognitive Communications and Networking,** Vol.4, Iss.4, Dec. 2018.

J16 ***(Q2)*** M. Al-Jaafreh and **Z. Al-qudah, "** Transmission Rates over State-Dependent Diamond Channel**", IET Communications,** Vol.12, Iss.4, Mar. 2018.

J15 ***(Q2)*** **Z. Al-qudah**, L. Al-Hawary, M. Alrwashdeh, and M.Al Bataineh," Parallel Relay Network with Orthogonal Components: Capacity and Power Allocation", **Wireless Personal Communications (Springer)**, Vol.96, Iss.3, Oct. 2017.

J14 ***(Q2)*** **Z. Al-qudah**, and M. Al Bataineh, "Allocation of Resources for the Gaussian Multiple Access Channel with Practical Partial Cooperation", **Int'l J. of Electronics and Communications (AEU),** Elseiver**,** Vol.74, Apr. 2017.

J13 ***(Q2)*** M. Al Bataineh and **Z. Al-qudah**, "A Novel Gene Identification Algorithm with Bayesian Classification", **Biomedical Signal Processing and Control, *Elseiver,*** Vol.31, Jan. 2017.

J12 ***(Q2)*** **Z. Al-qudah,"** Achievable Rates of a State-Dependent Relay Channel with Orthogonal Components", **IET Communications,** Vol.10, Iss.16, Nov. 2016.

J11 ***(Q2)*** M. Al Bataineh, **Z. Al-qudah**, and A. Alzaban "A Novel Iterative Sequential Monte Carlo Algorithm for Motif Discovery"**, IET Signal Processing**, Vol.10, Iss.5, Jul. 2016.

J10 ***(Q2)*** **Z. Al-qudah**, M. Alrwashdeh, L. Al-Hawary, and M.Al Bataineh "On the Capacity of a Relay Network With Orthogonal Components", **Int'l J. of Electronics and Communications (AEU),** *Elseiver*, Vol.70, May 2016.

J9 ***(Q2)*** **Z. Al-qudah** "Achievable rates of Gaussian two-way relay channel with orthogonal components and partial decoding at relay", **Electronic Letters**, Vol.52, Iss.3, Feb. 2016.

J8 ***(Q2)*** **Z. Al-qudah** "Orthogonal Space Time Block Coding over Dirty Paper Channel: outage Capacity Analysis", **Physical Communication**, *Elsevier*, Vol. 15, Jun.2015.

J7 ***(Q2)*** **Z. Al-qudah**, and M. Al Bataineh, " Cognitive Interference Channel: Achievable Rate Region and Power Allocation", **IET Communications**, Vol.9, Iss.2, Jan. 2015.

J6 ***(Q1)*** **Z. Al-qudah** and D. Rajan "Dirty paper coding for cognitive Z-channel: Performance Results*",* **IEEE Transaction on Wireless Communication**, Vol.12, Iss.12, Dec. 2013.

J5 ***(Q3)*** **Z. Al-qudah "**Gaussian MIMO Relay Channel with Orthogonal Channel Components", **Journal of Electrical Engineering**, Vol.71, Iss.3, Jun. 2020.

J4 ***(Q4)*** W. Abu Shehab and **Z. Al-qudah, "**Singular Value Decomposition: Principles and Applications in Multiple Input Multiple Output Communication system", **Int. J. of Computer Networks & Communications**, Vol.9, No.1, Jan 2017.

J3 ***(Q3)*** **Z. Al-qudah** and W. Abu Shehab, "Two-Way Multiple Relays Channel: Achievable Rate Region and Optimal Resources "**Advances in Electrical and Electronic Engineering** (AEEE), Vol.14, Iss.3, Sep. 2016.

J2 **Z. Al-qudah** "Achievable Rates of Gaussian Broadcast Channel with Interference", **Journal of Communications** (JCM), Vol. 9, Iss 4, Apr. 2014.

J1 M. Al Bataineh and **Z. Al-qudah**," Bayesian Classification of Ribosome Binding Sites in Prokaryotic Genome Sequences: A Communications Theory Approach", **International Journal of Bioscience, Biochemistry and Bioinformatics** vol.7, No.3, 2017.

Conference Papers

C3 K. Darabkh, S. Odetallah, **Z. Al-qudah**, and A. Khalifeh "A New Density-Based Relaying Protocol for Wireless Sensor Networks", 14th International Wireless Communications & Mobile Computing Conference (**IWCMC-2018**), Cyprus.

C2 Z. Al-qudah and D. Rajan "MIMO Dirty paper coding: System Design and Implementation", IEEE Int. Conf. on Computing, Networking and Communications **(ICNC 2012),** Hawaii, USA.

C1 Z. Al-qudah, "Multilevel Coded Modulation for Multipath Rayleigh fading channel", IEEE Int. Conf. on Computer and Communication Engineering, (**ICCCE-2008**), Kula Lumpur, Malaysia