

YASAMAN GHASEMPOUR

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EDUCATION

- **Ph.D. Candidate, Rice University** Expected: May 2019
Dept. of Electrical and Computer Engineering
GPA: 4.17/4.0
Advisor: Edward W. Knightly
- **M.S., Rice University** Aug. 2014- May 2016
Dept. of Electrical and Computer Engineering
GPA: 4.03/4.0
Thesis: Scaling 60 GHz WLANs: Creating and Identifying Opportunities for Multi-User Transmission
Committee: Edward W. Knightly (*Chair*), Behnaam Aazhang, Aydin Babakhani
- **B.Sc., Sharif University of Technology** Aug. 2010- May 2014
Dept. of Electrical Engineering
GPA: 3.83/4.0

SKILLS

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|-------------------------------|---|
| Specialized Software: | NS3, Simulink, LabVIEW, OPNET, ModelSim, Code Vision AVR |
| Programming Languages: | MATLAB, Java, Python, C++, C, Assembly, HTML, L ^A T _E X |
| Hardware: | WARP platform, Verilog, PCB design, DSP |
| Languages: | English, Persian |

PROFESSIONAL EXPERIENCE

- Rice University, TX, USA** Dec. 2014- present
Research Assistant
 - Scaling 60 GHz WLANs with Multi-User Transmissions:
Design and implementation of scalable and low-overhead user and beam selection strategies to enable multi-user simultaneous transmission using low cost antenna arrays in 60 GHz WLANs.
 - Decoupling Beam Steering and User Selection:
Design and Evaluation of a low-complexity framework for decoupling analog beamforming and user selection in MU-MIMO 60 GHz WLANs.
 - Robust 60 GHz Indoor Connectivity with Cooperative Access Points:
60 GHz links are susceptible to failure due to slight translational or rotational mobility. We Provide seamless Gbps-scale data rate for mobile users via multiple cooperative transmission points.
- NEC Labs America, NJ, USA** Summer 2016
Research Intern
 - Novel Combinational Results on Downlink MU-MIMO Scheduling:
We showed that the classical problem of downlink multi-use MIMO scheduling with linear transmit precoding can be cast as difference of two sub-modular functions and hence can be efficiently maximized.
 - Managing Analog Beams in mmWave Networks:
We Achieved bounds on the maximize number of beams that can be packed in the network. We also optimized the set of beams and the users associated with each transmission point.

- Link Packing in mmWave Networks:
We formulated and solved the problem of weighted sum rate maximization of active links in mm-wave networks where each link is determined by choice of receiving user, transmitting access point, and transmit and receive analog beams.

HONORS & AWARDS

- **Star Doctoral Student in ECE program, Rice University** Feb 2018
- **Texas Instruments Distinguished Fellowship** Aug. 2014- present
- **ACM SIGMOBILE Travel Grant** Sep. 2016 and 2017
- **N2Women Travel Grant** Oct. 2016
- **Rice Electrical and Computer Engineering Fellowship** Aug. 2014- May 2015
- **Society of Iranian-American Women for Education Fellowship** Mar. 2015 and 2017
- Member of **National Elites Foundation of Iran** Aug. 2010- present
- **Exempted from M.Sc. Entrance Exam** in Iran as an exceptionally talented undergraduate student Mar. 2014
- **Ranked 7th** in the Nationwide University Entrance Exam in Iran (batch size 320,000) Jun. 2010
- **Ranked 13th** in the Nationwide University Entrance Exam for linguistics in Iran (batch size 11,000) Jun. 2010
- **Ranked 1st** in the Nationwide Islamic Azad University Entrance Exam in Iran (batch size 100,000) Jun. 2010
- **Semifinalist**, National Mathematics Olympiad Mar. 2008

PUBLICATIONS

- **Y. Ghasempour**, M. K. Haider, E. Knightly, “Decoupling Beam Steering and User Selection for Scaling Multi-User 60 GHz WLANs,” submitted to Transactions on Networking.
- M. K. Haider, **Y. Ghasempour**, E. Knightly, “SearchLight: Tracking Device Mobility using Indoor Luminaries to Adapt 60 GHz Beams,” submitted to ACM MobiHoc, 2018.
- **Y. Ghasempour**, C. Cordeiro, C. DaSilva, E. Knightly, “IEEE 802.11ay: Directional 60 GHz MIMO Communication for 100-Gbps Wi-Fi,” in IEEE Communications Magazine, vol. PP, no. 99, pp. 1-7.
- **Y. Ghasempour**, E. Knightly, “Decoupling Beam Steering and User Selection for Scaling Multi-User 60 GHz WLANs,” in Proceeding of ACM MobiHoc, 2017.
- S. K. Saha*, **Y. Ghasempour***, M. K. Haider*, et.al. , “X60: A Programmable Testbed for Wideband 60 GHz WLANs with Phased Arrays,” in Proceeding of the 11th International Workshop on Wireless Network Testbeds, Experimental evaluation & CHaracterization (WiNTECH), 2017. **Runner-up for Best Paper Award**
- **Y. Ghasempour**, N. Prasad, M. Khojastepour, S. Rangarajan, “Managing Analog Beams in mmWave Networks,” in Proceeding of Asilomar Conference on Signals, Systems and Computers, 2017.
- **Y. Ghasempour**, N. Prasad, M. Khojastepour, S. Rangarajan, “Link Packing in mmWave Networks,” in Proceedings of IEEE ICC 2017, Paris, France.
- **Y. Ghasempour**, N. Prasad, M. Khojastepour, S. Rangarajan, “Novel Combinational Results on Downlink MU-MIMO Scheduling with applications,” in Proceedings of IEEE WONS 2017, Jackson Hole, Wyoming, USA.
- **Y. Ghasempour**, “Scaling 60 GHz WLANs: Creating and Identifying opportunities for Multi-User Transmission”, Master’s Thesis, May 2016.
- *Primary co-authors

PATENTS

- “Link Packing in mmWave Networks”, provisional patent was filed in August 2017.
- “Managing Analog Beams in mmWave Networks”, provisional patent was filed in January 2018.

LEADERSHIP

- Co-Chair of ACM S³ Workshop in conjunction with MobiCom 2016, New York, USA.
- Member of Dean of Engineering’ Student Advisory Council Nov. 2017- present
- Vice president of Rice Iranian Society Oct. 2014- present
- Member of Women’s Leadership Group in Electrical and Computer Engineering, Rice University Aug. 2014- present
- Scientific Assistant Director of the 11th annual conference of Sharif University Jan. 2013

PROFESSIONAL ACTIVITIES

- **Invited Talk** in ACM Millimeter Networks (mmNets) Workshop, in conjunction with ACM MobiCom 2017.
- **Co-Chair of ACM S³ 2016**, in conjunction with ACM MobiCom 2016.
- **Poster:**
 - S. K. Saha, **Y. Ghasempour**, M. K. Haider, et.al. , “**X60: A Programmable Testbed for Wideband 60 GHz WLANs with Phased Arrays**,” in Proceeding of the ACM MobiCom, 2017.
 - Y. Ghasempour and E. Knightly, “**Spatial Multiplexing in Millimeter-Wave Networks**,” Keck Seminar, Brown University, October 2016.
 - Y. Ghasempour and E. Knightly, “**Maximizing Spatial Streams in THZ band**,” Keck Seminar, Rice University, November 2015.
 - Y. Ghasempour et al., “**Next Generation Millimeter-Wave Wireless Communications: Achieving Multi-Gigabit Data Rates**,” Rice ECE, Affiliates Conference, Rice University, March 2015.
- **Reviewer:**
 - IEEE Transactions on Wireless Communications 2017, 2018
 - Elsevier Computer Networks (COMNET) 2018
 - IEEE Wireless Communications and Networking Conference (WCNC) 2018
 - IEEE Millimeter-Wave Networked System (mmSys) Workshop, 2018
 - IEEE Dynamic Spectrum Access Networks (DySPAN) 2017
 - IEEE Wireless On-demand Network systems and Services (WONS) 2017, 2018
 - IEEE International Conference on Sensing, Computing, and Networking (SECON) 2015

SELECTED COURSE PROJECTS

- An Overview of Downlink Precoding in Multi-User Massive MIMO Systems, under supervision of Dr. Sabhahrwal Fall 2017
- Human Activity Recognition Using Smartphone Internal Sensors, under supervision of Dr. Schwanauer Spring 2017
- Performance Analysis of Fixed Node Assisted Routing for Ad Hoc Networks, under supervision of Prof. Johnson Fall 2015
- Robust 60 GHz Indoor Connectivity with Cooperative Access Points, under supervision of Prof. Knightly Spring 2015

· Effect of Exponential Back off on the Performance of Network Coding in a Slotted Aloha Network,
B.Sc. Thesis, under the supervision of Prof. Ashtiani

Fall 2014