YASAMAN GHASEMPOUR

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EDUCATION

· **Ph.D. Candidate, Rice University** Expected: May 2019
Dept. of Electrical and Computer Engineering
Advisor: Edward W. Knightly

· **M.S., Rice University** Aug. 2014- May 2016
Dept. of Electrical and Computer Engineering
GPA: 4.04/4
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

Specialized Software:	NS3, Simulink, LabVIEW, OPNET, ModelSim, Code Vision AVR
Programming Languages:	MATLAB, C++, C, Assembly, HTML, LaTeX
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 evaluation of scalable and low-overhead user and beam selection strategies to enable multi-user 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 high data rate connectivity for mobile users via multiple cooperate 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

- **Texas Instruments Distinguished Fellowship** Aug. 2014- present
- **N2Women Travel Grant** Oct. 2016
- **MobiCom 2016 Travel Grant** Aug. 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**, C. Cordeiro, C. DaSilva, E. Knightly, "IEEE 802.11ay: Directional 60 GHz MIMO Communication for Enhanced Multi-Gbps Wi-Fi," in preparation, under review for IEEE Communications Magazine.
- **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.
- **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

- "MU-MIMO in mmWave Systems", provisional patent was filed in August 2016.
- "Link Packing in mmWave Networks", provisional patent was filed in August 2016.

SELECTED COURSE PROJECTS

- 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
- Comparison of CSMA based MAC Protocols of Wireless Sensors,
  Part of my internship project in IRAN Telecommunication Research Center — Summer 2013
- Design and Implementation of controller of gain amplifier with AVR,
  under supervision of Prof. Movahedian — Spring 2012

PROFESSIONAL ACTIVITIES

- **Invited Talk** in ACM Millimeter Networks (mmNets) Workshop, in conjunction with ACM MobiCom 2017.
- **Co-Chair of ACM S^3 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
  - IEEE Dynamic Spectrum Access Networks (DySPAN) 2017
  - IEEE Wireless On-demand Network systems and Services (WONS) 2017
  - IEEE International Conference on Sensing, Computing, and Networking (SECON) 2015

TEACHING EXPERIENCE

- ELEC 437: Into to Communication Network — Fall 2016
- ELEC 243: Electronic Measurement Systems — Spring 2016, 2017
- ELEC 533: Intro to Random Processes — Fall 2015

LEADERSHIP

- Co-Chair of ACM S^3 Workshop in conjunction with MobiCom 2016, New York, USA.
- 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