

# Ghaith Hattab

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## Research Interests

Algorithm development, optimization, and signal processing for wireless communication systems, including 5G coexistence with incumbents (sub-6GHz and mmWave), providing connectivity to massive IoT, network densification and massive MIMO for 5G networks, and dynamic spectrum access.

## Education

### University of California, Los Angeles (UCLA)

PhD, Electrical Engineering, 4.0/4.0

Los Angeles, CA, United States

Sept. 2014–present

### Queen's University

M.Sc., Electrical and Computer Engineering, 4.23/4.30

Kingston, ON, Canada

Sept. 2012–April 2014

### American University of Sharjah (AUS)

B.Sc., Electrical Engineering (summa cum laude), 4.0/4.0

Sharjah, UAE

Aug. 2008–June 2012

## Experience

### Industry.....

#### Nokia Bell Labs

Research Intern, Access Research Lab

Arlington Heights, IL

Summer 2017

### Research.....

#### UCLA Electrical Engineering

Research Assistant, Cognitive Reconfigurable Embedded Systems Lab

Los Angeles, CA

Sept. 2014–present

#### ECE Department, Queen's University

Research Assistant, Wireless Communications and Signal Processing Lab

Kingston, ON

Sept. 2012–Aug. 2014

#### ELE Department, AUS

Research Assistant, Microwave Imaging and Nondestructive Evaluation Lab

Sharjah

Aug. 2011–May 2012

### Teaching.....

#### EE Department, UCLA

Teaching Assistant for Signals and Systems

Los Angeles, CA

Winter 2018

#### EE Department, UCLA

Teaching Assistant for Logic Design of Digital Systems

Los Angeles, CA

Fall 2015–2017

#### ECE Department, Queens

Teaching Assistant for Digital Communications

Kingston, On

Winter 2014

## Selected Publications (full list available in CV and at [www.ghaithhattab.com](http://www.ghaithhattab.com))

### Book Chapters.....

B.1 **G. Hattab** and D. Cabric, "Spectrum Sensing, Measurement, and Modeling", in Wei Zhang, editor, *Handbook of Cognitive Radio - Springer*, May 2017.

### Journal Publications and Submissions .....

J.1 **G. Hattab**, E. Visotsky, M. Cudak, and A. Ghosh, "Interference Mitigation Techniques for Coexistence of 5G mmWave Users with Incumbents at 70 and 80 GHz", *submitted to IEEE Trans on Wireless Communications*.

J.2 **G. Hattab** and D. Cabric, "Coverage and Rate Maximization via User Association in Multi-antenna HetNets", *submitted to IEEE Trans on Wireless Communications*.

- J.3 **G. Hattab** and D. Cabric, "Rate-based Cell Range Expansion for Downlink Massive MIMO Heterogeneous Networks", *IEEE Wireless Commun. Letters*, Nov. 2017.
- J.4 W. Ejaz, **G. Hattab**, T. Attia, M. Ibnkahla, F. Abdelkefi, and M. Siala, "Joint Quantization and Confidence-based Generalized Combining Scheme for Cooperative Spectrum Sensing," *IEEE Systems Journal*, Oct. 2016.
- J.5 A. El-Mougy, M. Ibnkahla, **G. Hattab** and W. Ejaz, "Reconfigurable Wireless Networks," *Proceedings of the IEEE*, vol.103, no.7, pp.1125-1158, July 2015.
- J.6 **G. Hattab** and M. Ibnkahla, "Multiband Spectrum Access: Great Promises for Future Cognitive Radio Networks," *Proceedings of the IEEE* vol.102, no.3, pp.282-306, March 2014. **(The No. 8th most popular paper on IEEEExplore in Mar. 2014).**

#### Conference Publications.....

- C.1 **G. Hattab**, P. Moorut, E. Visotsky, M. Cudak, and A. Ghosh, "Interference Analysis of the Coexistence of 5G Cellular Networks with Satellite Earth Stations in 3.7-4.2GHz", *submitted to IEEE ICC'18*.
- C.2 **G. Hattab**, E. Visotsky, M. Cudak, and A. Ghosh, "Coexistence of 5G mmWave Users with Incumbent Fixed Stations over 70 and 80 GHz", *IEEE GLOBECOM'17*, Dec. 2017.
- C.3 **G. Hattab** and D. Cabric, "Energy-Efficient Massive Cellular IoT Shared Spectrum Access via Mobile Data Aggregators", *IEEE WiMob'17*, Oct. 2017.
- C.4 F. Panahi, F. Panahi, **G. Hattab**, T. Ohtsuki, D. Cabric, "Green Heterogeneous Networks via an Intelligent Power Control Strategy and D2D Communications", *IEEE PIMRC'17*, Oct. 2017.
- C.5 T. Vermeulen, M. Laghate, **G. Hattab**, D. Cabric, and S. Pollin, "Towards Instantaneous Collision and Interference Detection using In-Band Full Duplex", *IEEE INFOCOM*, May 2017.
- C.6 **G. Hattab** and D. Cabric, "Joint Resource Allocation and User Association in Multi-Antenna Heterogeneous Networks", *IEEE Globecom*, Dec. 2016.
- C.7 **G. Hattab** and D. Cabric, "Inter-tier Interference Mitigation in Multi-Antenna HetNets: A Resource Blanking Approach", *IEEE Globecom*, Dec. 2016.

#### Book (Non-refereed: a personal project).....

- B.1 **G. Hattab**, "Fundamentals of Signal Detection and Estimation," 2nd Edition, 2014.

### Awards and Distinctions

UCLA Electrical Engineering Departmental Fellowship	<i>Sept. 2014</i>
1st Place in IEEE Kingston Section M.Sc. Research Excellence Award	<i>May 2013</i>
Queen's University Graduate Award	<i>2012-2014</i>
Recipient of the Presidential Cup award (Awarded by his Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi, Supreme Council Member, Ruler of Sharjah and President of AUS)	<i>June 2012</i>
Recipient of Ministry of Presidential Affairs (MOPA) Fellowship	<i>Sept. 2008</i>
The 5th place (~35,000 Students) in high school across the UAE	<i>June 2008</i>

### Relevant Computer Skills

MATLAB and Simulink; Mathematica; Maple; Network Simulator 3 (NS3); LabVIEW; C++