Ahmad **AlAmmouri**

Staff Research Engineer · Wireless Communications

Plano, TX, USA

(+1) 737-333-5428 | alammouri.ahmad@gmail.com | www.alammouri.com | ahmad-alammouri

Summary

Staff Research Engineer with a PhD in Wireless Communications from UT Austin and over a decade of experience in PHY-layer innovation across mmWave and FR3 systems, and stochastic modeling of wireless networks. Co-inventor on 20+ patents and author of 25+ peer-reviewed publications, including top-tier IEEE journals. Actively pursuing a research-focused role in advanced wireless systems with strong technical impact and work-life balance.

Research Experience

Samsung Research America (SRA) — *Plano, Texas*

Staff Research Engineer — *Mar. 2024 - Now*

- Coverage and capacity improvement for mmWave FWA through FWA-specific air algorithms.
- Designed and implemented PoC for Joint Phase-Time Arrays enabling uplink coverage extension.
- System-level feature planning and link budgeting for FR3 PoC with hybrid beamforming.
- Liaison between three Samsung research hubs to ensure consistent direction and timely alignment across JPTA, FR3, and FWA projects.

Senior Research Engineer — *Apr. 2021 - Feb. 2024*

- Joint-time phase arrays for coverage extension and fast beam alignment in mmWave and THz.
- Upper-mid band MU-MIMO feasibility, scheduling, hybrid precoding, and 3GPP-compliance.
- Beam design and management for Samsung's 5G mmWave BS.
- Developing and maintaining System-level, link-level, and ray-tracing simulators.

National Institute for Research in Digital Science and Technology (INRIA) — *Paris, France*

Chateaubriand Researcher — *Jan. 2020 - Jul. 2020*

- Data Traffic Dynamics in Cellular Networks.

Visiting Researcher — *Apr. 2019 - Jul. 2019*

- Data Traffic Dynamics in Cellular Networks.

Samsung Research America (SRA) — *Richardson, Texas*

Research Intern — *May 2018 - Aug. 2018*

- Beam Codebook Design for 5G Mobile Devices With the Impact of User's Handgrip.

Research Intern — *May 2017 - Aug. 2017*

- Integrated Access and Backhaul for 5G mmWaves Cellular Networks.

Education

The University of Texas at Austin — *Austin, Texas*

PhD in Electrical Engineering — *Aug. 2016 - Jan. 2021*

- Advisors: Prof. Jeffrey Andrews and Prof. François Baccelli
- Thesis: Analysis of Cellular Networks: Densification and Data Traffic Dynamics
- GPA: 4.00/4.00
- Courses: Wireless Communications, Stochastic Geometry, Theory of Probability, Queuing Theory, Random Graphs, Wireless Communications Lab.
- A technical reviewer for 50+ peer-reviewed journal papers and the recipient of three Exemplary Reviewer awards for that.
- A technical program committee (TPC) member for the conferences ICC 2018, WCSP 2018, ICC 2019, ICC 2020, ICC 2021, ICC 2022, and ICC 2023.
- Graduate research assistant in the Wireless Communications and Networking Group (WNCG) and Simons Center for Mathematics of Networks.

King Abdullah University of Science and Technology (KAUST) — *Thuwal, Saudi Arabia*

MS in Electrical Engineering — *Aug. 2014 - May 2016*

- Advisor: Prof. Mohamed-Slim Alouini
- Thesis: Full-Duplex Communications in Large-Scale Cellular Networks
- GPA: 4.00/4.00
- Courses: Numerical Optimization, Probability and Random Processes, Probability and Statistics, Digital Communication and Coding, Wireless Communications, Digital Signal Processing, Digital Communications Theory, Information Theory, and Programming Methodology and Abstraction.

The University of Jordan *Amman, Jordan*
BS in Electrical Engineering *Aug. 2009 - Jan. 2014*
- Graduation Project: Distributed Opportunistic Spectrum Sharing in Cognitive Radio Networks
- GPA: 3.73/4.00, Valedictorian, Excellent with Honor

Technical Skills

Wireless Standards: 3GPP NR (PHY-layer), ORAN.
Programming: MATLAB, Python, C++, Git.
Tools: SLS, LLS, TensorFlow, Remcom Wireless InSite, HFSS.
Theoretical Foundations: Signal Processing, Beamforming, MU-MIMO, Hybrid Precoding, Channel Estimation, Stochastic Geometry, Queuing Theory, Random Graphs

Honors & Awards

2024 ***SRA Inventor Award***, High quality patents for X-MIMO System Development.
2023 ***SRA Inventor Award***, High quality patents on Joint time-phase arrays.
2023 ***SRA Individual Award***, Projects: JPTA and X-MIMO System Development.
2023 ***SRA Team Award***, Project: JPTA System and PoC Development.
2022 ***SRA Inventor Award***, High quality patents for codebook design in Samsung's BSs.
2021 ***SRA Team Award***, Project: 5G mmWave Networks.
2020 ***Student Leadership Award***, awarded by the Wireless Networking and Communications Group (WNCG) at UT Austin.
2019 ***Chateaubriand Fellow***, awarded by the Embassy of France in the United States.
2019 ***Professional Development Award***, awarded by the ECE department at UT Austin.
2018 ***Exemplary Reviewer***, IEEE Transactions on Wireless Communications.
2018 ***SRA President's Award***, Project: Designing Beam Codebooks for mmWaves Mobile Devices.
2017 ***Exemplary Reviewer***, IEEE Transactions on Wireless Communications.
2017 ***Exemplary Reviewer***, IEEE Transactions on Communications.
2016 ***Best Poster Award***, KAUST-NSF Conference on Electronic Systems for a Sustainable Future.
2014-2016 ***King Abdullah University of Science and Technology Fellowship***, awarded to only one student from Jordan in the class of 2016.
2014 ***The University of Jordan Award for Scientific Excellence***, top of Electrical Engineering class.

Selected Publications and Patents

1 [B] Book. 14 [J] Journal paper. 12 [C] Conference paper. 21 [P] Patents. <Full list available here>

[B1] J. G. Andrews, A. K. Gupta, **A. AlAmmouri**, and H. S. Dhillon, "An Introduction to Cellular Network Analysis using Stochastic Geometry", Springer, Jun. 2023.

[J4] A. AlAmmouri, J. MO, V. V. Ratnam, B. L. NG, R. W. Heath, J. Lee, J. Zhang, "Extending Uplink Coverage of mmWave and Terahertz Systems Through Joint Phase-Time Arrays", IEEE Access, Aug. 2022.

[J3] A. AlAmmouri, J. Mo, , B. L. Ng, J. C. Zhang, and J. G. Andrews, "Hand Grip Impact on 5G mmWave Mobile Devices", IEEE Access, May 2019.

[J2] A. AlAmmouri, J. G. Andrews, and F. Baccelli, "A Unified Asymptotic Analysis of Area Spectral Efficiency in Ultradense Cellular Networks", IEEE Transactions on Information Theory, Jun. 2018.

[J1] A. AlAmmouri, H. ElSawy, O. Amin, and M. -S. Alouini, "In-Band α-Duplex Scheme for Cellular Networks: A Stochastic Geometry Approach", IEEE Transactions on Wireless Communications, Jul. 2016.

[P4] A. AlAmmouri, J. Mo, Y. Nam, "SRS-Based Channel Reconstruction in Hybrid Cellular Systems", 2023.

[P3] A. AlAmmouri, J. Mo, Y. Nam, "Methods And Apparatus of Scheduling and Beam Design in JPTA", 2023.

[P2] A. AlAmmouri, J. Mo, M. Ozkoc, B. Ng, "Composite Beam Operation and Overhead Reduction", US Patent App. 18/365,857, 2022.

[P1] A. AlAmmouri, J. Mo, V. Va , B. L. Ng, "Method and Apparatus of Beam Management With Measurement Aging", US Patent App. 17/589,702, 2022.