

Ahmad Hassan

Ph.D. Student
Department of Electrical and Computer Engineering
University of Southern California

ahmadhas@usc.edu
+1 303 264 9972
ahmadhassandebugs.github.io

EDUCATION

- 2023– **University of Southern California**
Ph.D. in Computer Engineering, Advisor: Prof. Feng Qian
- 2021–23 **University of Minnesota – Twin Cities**
M.S. in Computer Science
GPA: 4.0/4.0
- 2016–20 **Lahore University of Management Sciences**
B.S. in Computer Science, Advisor: Prof. Zafar Ayyub Qazi
GPA: 3.73/4.0

RESEARCH AREAS

Topics that intrigue me include, but are not limited to, Mobile Computing (especially 5G Mobile Networking), and Networked Multimedia Systems (VR/MR). My current research highlights challenges faced by today's 4G/5G applications and argues for a cross-layer design to overcome these challenges.

PUBLICATIONS

- 2024 Wei Ye, Xinyue Hu, Steven Sleder, Anlan Zhang, Udhaya Dayalan, **Ahmad Hassan**, Rostand Fezeu, Akshay Jajoo, Myungjin Lee, Eman Ramadan, Zhi-Li Zhang, and Feng Qian. Dissecting Carrier Aggregation in 5G Networks: Measurement, QoE Implications and Prediction. *To appear in ACM SIGCOMM'24*.
- 2024 Xumiao Zhang, Shuowei Jin, Yi He, **Ahmad Hassan**, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. QUIC is not Quick Enough over Fast Internet. *In WWW 2024*.
- 2024 Shuowei Jin, Ruiyang Zhu, **Ahmad Hassan**, Xiao Zhu, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. OASIS: Collaborative Neural-Enhanced Mobile Video Streaming. *In ACM MMSys 2024*.
- 2024 **Ahmad Hassan**, Wei Ye, Anlan Zhang, Jason Carpenter, Ruiyang Zhu, Shuowei Jin, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. The Case for Boosting Mobile Application QoE via Smart Band Switching in 5G/xG Networks. *In ACM HOTMOBILE 2024*.
- 2024 Anlan Zhang, Chendong Wang, Yuming Hu, **Ahmad Hassan**, Zejun Zhang, Bo Han, Feng Qian, and Shichang Xu. Habitus: Boosting Mobile Immersive Content Delivery through Full-body Pose Tracking and Multipath Networking. *To appear in 2024 USENIX NSDI*.
- 2023 Rostand A. K. Fezeu, Eman Ramadan, Wei Ye, Benjamin Minneci, Jack Xie, Arvind Narayanan, **Ahmad Hassan**, Jaideep Chandrashekar, Myungjin Lee, Zhi-Li Zhang, and Feng Qian. An In-Depth Measurement Analysis of 5G mmWave PHY Latency and its Impact on End-to-End Delay. *In PAM 2023*.

- 2022 **Ahmad Hassan**, Arvind Narayanan, Anlan Zhang, Wei Ye, Ruiyang Zhu, Shuowei Jin, Jason Carpenter, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. Vivisecting Mobility Management in 5G Cellular Networks. *In Proceedings of the 2022 ACM SIGCOMM*, Amsterdam, Netherlands.
- 2022 Arvind Narayanan*, Muhammad Rochman*, **Ahmad Hassan**, Bariq Firmansyah, Vanlin Sathya, Monisha Ghosh, Feng Qian, and Zhi-Li Zhang. A Comparative Measurement Study of Commercial 5G mmWave Deployments. *In Proceedings of the 2022 IEEE INFOCOM*, Virtual Conference.
- 2021 Arvind Narayanan*, Xumiao Zhang*, Ruiyang Zhu, **Ahmad Hassan**, Shuowei Jin, Xiao Zhu, Xiaoxuan Zhang, Denis Rybkin, Zhengxuan Yang, Zhuoqing Morley Mao, Feng Qian, and Zhi-Li Zhang. A variegated look at 5G in the wild: performance, power, and QoE implications. *In Proceedings of the 2021 ACM SIGCOMM*, Virtual Conference.

SELECTED PROJECTS

- 2023–24 **Dynamic TDD Scheduling**: A system that enables runtime configuration of uplink and downlink resources for a TDD base station.
- 2022–24 **Smart Band Switching**: A system to dynamically switch bands for mobile application performance boost, inspired by our multi-country field experiments.
- 2021–23 **Networked VR**: An effort to enable wireless VR through novel network and system level optimizations.
- 2021–22 **5G Mobility Management**: An in-depth study to characterize 5G mobility management, and highlight the issues in today’s 5G networks.
- 2020–21 **An in-depth study of 5G cellular networks**: A study of performance, power, and application quality-of-experience (QoE) of 5G cellular networks in the wild.

WORKING EXPERIENCE

- 2023– Research Assistant - IMMERSE Lab, USC.
- 2023–24 Associate Research Intern - NDSL, Hewlett Packard Labs.
- 2021–23 Research Assistant - Feng Qian’s Lab, UMN.
- 2021 Data Analyst - AI Production Department, Afiniti Software Solutions Private Ltd.
- 2019–20 Research Assistant - Zong 4G Lab, LUMS.

SERVICE

Journal Reviewer: IEEE/ACM ToN, IEEE TMC, IEEE ComNet

Program Committee: ACM ImmerCom 2024

Artifact Evaluation Committee: ACM SIGCOMM 2024

AWARDS/HONORS/GRANTS

- 2024 Best Paper Award, MMSys 2024

2022–24 Student (Travel) Grant: SIGCOMM 2022, HotMobile 2024
2017–20 Placed on Dean’s Honor List
2014–16 Merit Scholarship in High School (valued at \$2,000)

TEACHING EXPERIENCE

University of Minnesota – Twin Cities

2021 Graduate T.A. for Operating Systems

Lahore University of Management Sciences

2020 T.A. for Topics in Internet Research

2019 T.A. for Computer Vision

2018 T.A. for Calculus II

STUDENT ACTIVITIES

2024– VP of Programming - Viterbi Graduate Student Association, USC.
2023–24 DEIA Senator - Viterbi Graduate Student Association, USC.
2019 Student Member - Disciplinary Appeals Committee, LUMS.
2019–20 Batch Representative for the School of Science and Engineering (SSE) - LUMS.
2019–20 Chair - Harassment and Disciplinary Committee, LUMS Student Council.
2018 Research Intern - Energy Informative Group (EIG), LUMS, Lahore.
2017 Camp Leader - Project 50 Kids, Lahore.

Updated July 2024