

# Ahmad Hassan

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## 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 Systems, 5G Mobile Networking, and Networked 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 Xumiao Zhang, Shuwei Jin, Yi He, **Ahmad Hassan**, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. QUIC is not Quick Enough over Fast Internet. *To appear in WWW'24*.
- 2024 Shuwei Jin, Ruiyang Zhu, **Ahmad Hassan**, Xiao Zhu, Z. Morley Mao, Zhi-Li Zhang, and Feng Qian. OASIS: Collaborative Neural-Enhanced Mobile Video Streaming. *To appear in MMSys'24*.
- 2024 **Ahmad Hassan**, Wei Ye, Anlan Zhang, Jason Carpenter, Ruiyang Zhu, Shuwei 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, Shuwei 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

- 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.
- 2019 **Fast-EPC: A Low Latency Cellular Control Planes:** An edge-based cellular control plane that significantly reduces the control procedures’ latency while providing fast failure recovery.

## WORKING EXPERIENCE

- 2021 Data Analyst - AI Production Department, Afiniti Software Solutions Private Ltd.
- 2019–20 Research Assistant - Zong 4G Lab, LUMS.

## TECHNICAL SKILLS

C/C++, Java, Golang, Javascript, Python, Pytorch, Perl, Node.js, React, Bootstrap, HTML/CSS.

## AWARDS/HONORS/GRANTS

- 2017–20 Placed on Dean’s Honor List
- 2014–16 Merit Scholarship in High School (valued at \$2,000)

## INVITED TALKS

- September, 2022 GRaDS talk organized by CSGSA, UMN
- October, 2022 Guest Lecture for UMN CSCI 8211 (Advanced Computer Networks)

## **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**

2023– 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 March 2024