

# Ahmad Hassan

Ph.D. Student  
Department of Computer Science and Engineering  
University of Minnesota – Twin Cities

hassa654@umn.edu  
+1 303 264 9972  
ahmadhassandebugs.github.io

## EDUCATION

- 2021– **University of Minnesota – Twin Cities**  
Ph.D. in Computer Science, Advisor: Prof. Feng Qian  
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

- 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

- 2021– **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.
- 2019      **Reducing LTE Handover Latency with State Replication:** An ns3-based system that replicates mobile device's state in neighboring base stations to reduce handover latency.

## 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 AND HONORS

- 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

Graduate T.A. for Operating Systems, 2021.

### Lahore University of Management Sciences

T.A. for Topics in Internet Research, 2020.

T.A. for Computer Vision, 2019.

T.A. for Calculus II, 2018.

## STUDENT ACTIVITIES

- 2019–20   Batch Representative for the School of Science and Engineering (SSE) - LUMS.
- 2019      Student Member - Disciplinary Appeals Committee, 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.

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