www.linkedin.com/in/sahmad
Homepage

SOHAIB AHMAD

(443) 983-1253
sohaib@cs.umass.edu

EDUCATION

PhD, Computer Science — **University of Massachusetts, Amherst** — **May 2024** (expected)
- Krithi Ramamritham scholarship award for outstanding researcher
- Advisors: Dr. Ramesh Sitaraman, Dr. Hui Guan

MS, Computer Science — **University of Massachusetts, Amherst** — **May 2020**
- Thesis project published at ACM e-Energy 2019

BS, Computer Science — **LUMS, Pakistan** — **May 2017**
- Graduation with high distinction
- Dean's honor list for excellent academic performance in all years
- Ranked 1st in the Computer Science class of 2017 (CGPA)

Research interests: Systems for ML, ML for Systems, Networked Systems, Resource Management and Scheduling, Edge Computing

EMPLOYMENT

Software Engineering Intern — **Meta (formerly Facebook)** — **May 2022 – Aug 2022**
- Worked on the Serverless Computing team for asynchronous execution of workloads with varying service level agreement (SLA) requirements.
- Implemented a new mechanism to add and manage elastic workers to the pool of serverless compute resources and throttle them based on different SLA requirements of applications.

Research Intern — **Nokia Bell Labs** — **Jun 2021 – Aug 2021**
- Worked on resource management and scheduling of inference requests for the Bell Labs Inferencing Service.
- Used **reinforcement learning** to learn adaptable scheduling policies that increased the number of inference requests meeting quality-of-service requirements by up to 46% over the existing techniques.

Research Intern — **Nokia Bell Labs** — **Jun 2020 – Aug 2020**
- Designed a scheduler for placement of machine learning training jobs in a cluster distributed over multiple continents, based on the resource and data constraints of the jobs for the Nokia internal job training system.
- Reduced the make-span of jobs by up to 52% under normal load and up to 26% under high load conditions compared to the existing Nokia job training system, improving resource utilization across all locations.

Research Assistant — **University of Massachusetts, Amherst** — **Sep 2017 – Present**
- Devised a machine learning approach to reduce the energy costs of large datacenters, outperforming the state-of-the-art online algorithms by up to *10%.* Project received **Google Research Award**.
- Collaborated with **Raytheon BBN Technologies** to design and implement a load balancing algorithm to reduce end-user latency by up to *3.5x* and network traffic by up to *2.4x* for edge computing networks in simulation.

Research Assistant — **LUMS, Pakistan** — **Aug 2015 – May 2017**
- Implemented and compared congestion control protocols for TCP in-cast congestion in datacenter networks.
- Performed a study on mobile device characteristics in developing regions and identified device-level bottlenecks for Internet performance, published in ACM Internet Measurements Conference (IMC) 2016.

PUBLICATIONS

ACM/IEEE SEC 2021: D. Kumar, *S. Ahmad*, A. Chandra, R. Sitaraman. *AggNet: Cost-Aware Aggregation Networks for Geo-distributed Streaming Analytics.* Proceedings of the 2021 IEEE/ACM Symposium on Edge Computing (SEC). December 2021. Pages 297-311. [**PDF**]

ACM e-Energy 2019: *S. Ahmad*, A. Rosenthal, M. Hajiesmaili, R. Sitaraman. *Learning from Optimal: Energy*

Procurement Strategies for Data Centers. Proceedings of the Tenth ACM International Conference on Future Energy Systems. June 2019. Pages 326–330. [**PDF**]

ACM SIGCOMM 2018: R. Sen, *S. Ahmad*, A. Phokeer, Z. Farooq, I. Qazi, D. Choffnes, K. Gummadi. Inside the Walled Garden: Deconstructing Facebook's Free Basics Program. Proceedings of the 2018 Conference of the ACM Special Interest Group on Data Communication. August 2018. [**PDF**]

ACM IMC 2016: *S. Ahmad*, A. L. Haamid, Z. A. Qazi, Z. Zhou, T. Benson, I. Qazi. A View from the Other Side: Understanding Mobile Phone Characteristics in the Developing World. Proceedings of the 2016 Internet Measurement Conference. November 2016. Pages 319–325. [**PDF**]

AWARDS & SERVICE

- **Best Paper Award**, ACM/IEEE CCGrid 2023
- **Best Paper Award**, ACM SIGCOMM CCR 2018
- Manning Dissertation Writing Fellowship, Fall 2023
- Krithi Ramamritham scholarship at UMass Amherst for outstanding student in systems research
- Program Committee member (shadow) at ACM EuroSys 2022
- ACM/IEEE Symposium on Edge Computing (SEC) 2021 Travel Grant
- ACM e-Energy 2019 Travel Grant
- ACM Internet Measurements Conference (IMC) 2016 Travel Grant
- Summer Research Project Award at LUMS (2016)

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, MATLAB, SQL
Libraries: TensorFlow, Torch, Keras, Scikit-Learn, FastAPI
Tools: Docker, LaTeX, Git, Jupyter, Bash/Shell