SYED MUHAMMAD ALI NAWAZISH

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EDUCATION

University of Utah August 2022 - Present
Ph.D. in Computer Science
Advisors: Dr. Jacobus (Kobus) Van der Merwe

Lahore University of Management Sciences (LUMS) September 2018 - July 2020
Masters in Computer Science
Advisors: Dr. Zafar Ayyub Qazi and Dr. Taqi Raza

COMSATS, Lahore February 2013 - June 2017
Bachelors in Software Engineering
Advisors: Dr. Salman Khan

PUBLICATIONS

- **Enabling Emerging Edge Applications Through a 5G Control Plane Intervention**
  Mukhtiar Ahmad, **Syed Muhammad Ali Nawazish**, Muhammad Taimoor Tariq, Muhammad Basit Iqbal Awan, Dr. Taqi Raza, Dr. Zafar Ayyub Qazi
  To be appear in ACM CoNEXT 2022 (accept. rate = 19%)
- **Neutrino: A Fast and Consistent Edge-based Cellular Control Plane**
  Mukhtiar Ahmad, **Syed Muhammad Ali Nawazish**, Muhammad Taimoor Tariq, Syed Usman Jafri, Adnan Abbas, Syeda Mashal Abbas Zaidi, Muhammad Basit Iqbal Awan, Zartash Afzal Uzmi, Zafar Ayyub Qazi
  To be appear in IEEE/ACM Transactions on Networking journal
- **A Low Latency and Cellular Control Plane**
  Mukhtiar Ahmad, Syed Usman Jafri, Azam Ikram, Wasiq Noor Ahmad Qasmi, **Syed Muhammad Ali Nawazish**, Zartash Uzmi, and Zafar Ayyub Qazi
  SIGCOMM 2020 (accept. rate = 22%)
- **Fast EPC: A Low Latency Cellular Control Plane**
  Mukhtiar Ahmad, Wasiq Noor Ahmad Qasmi, Syed Usman Jafri, Ridah Naseem, **Syed Muhammad Ali Nawazish**, Muhammed Azam Ikram, Zartash Uzmi, and Zafar Ayyub Qazi
  SIGCOMM 2019 (Poster session)

RESEARCH EXPERIENCE

Zong Research Lab - LUMS July 2020 - July 2022
Research Assistant

- Designed and developing a machine learning based system to detect control-plane attacks in 5G core network.
- Designed and developed a 5G core network to improve control-plane latency under failures.
- Designed and developed an edge-based 5G core network for improved load-balancing.

Zong Research Lab - LUMS February 2019 - June 2020
Research Assistant

- Encoded 5G cellular messages with **ASN.1** serialization and compared them with a new **FlatBuffers** serialization scheme.
- Designed a fast packet processing system leveraging **Intel's fifth generation** user plane function and improved the user-perceived latencies by up to **10x**.

COMSATS, Lahore October 2017 - August 2018
Software Engineer

- Designed and developed a **plagiarism detection** module for university assignments using a novel **string matching** algorithm.
- Designed and developed a **graph-based semantic similarity** for finding structural similarity of C/C++ source codes using **Clang** compiler APIs.

PROJECTS

- **Computation Offloading:** Conducted a feasibility study of computation offloading of multiple IoT applications under **Edge computing** paradigm.
- **Panorama Generator:** Developed an Android and web-based solution for panoramic pictures creation using Computer vision concepts.
- **Bitcoin Miner:** Developed a distributed system that mimics the **Bitcoin's** mining algorithm.
- **Paxos:** Developed a fault-tolerant, distributed algorithm for reaching consensus using Golang.
- **OLAP Cube:** Created an approach for multi-dimensional data analysis using a Java-based automatic query builder.

AWARDS

- Awarded departmental Fellowship at the University of Utah.
- Awarded Research assistantship for outstanding performance in distributed systems course in master's.

SERVICE

- Participated in DICE competition at COMSATS Sahiwal, 2016
- Participated in DICE competition at COMSATS Lahore, 2017