

MUZAMMIL ABDUL REHMAN

New York, NY – (857) 316-8915 – muzammil.abdul.rehman@gmail.com – www.ccs.neu.edu/home/muzammil/

EDUCATION

Northeastern University – Boston, MA

M.S. Computer Science

Sept. 2015 – Aug. 2017

CGPA: 3.63

Lahore University of Management Sciences (LUMS) – Pakistan

B.S. Computer Science

Aug. 2011 – June 2015

CGPA: 3.72

WORK EXPERIENCE

Graduate Research Assistant

Northeastern University

Sept. 2015 – present

Networked Systems Research Group

- Developed an Internet router geolocation system which **outperforms state-of-the-art** methods by up to 15%.
- Leveraged **machine learning** classifiers with real-time measurements and Internet Registry records to predict locations of network routers with 96.5% accuracy.
- Achieved **scalability** and **real-time results** by optimizing IP geolocations to use less than 10% of vantage points.
- Launched a **website** for geolocating Internet addresses using Python, Flask, Django ORM, MySQL and D3.js
- Deployed a public **REST API** at <https://passport.ccs.neu.edu/> for users.
- Mentored undergraduates in principles of software development, web development and research.

COURSE PROJECTS

- Engineered a **CDN** system using **Amazon EC2 servers** with location and DNS-based rerouting, and LRU caching.
- Implemented a Linux **TCP/IP Stack** using raw sockets with flow control and TCP Reno congestion control.
- Built a multi-user **Distributed File Sharing System** with selectable consistency guarantees between reads and writes in **C++**.
- Created a fault-tolerant, scalable, available **Distributed Key-Value Store** to process millions of records in **C++**.
- Programmed a resilient, cache-enabled, hash-based **Distributed Password Cracker** to brute force passwords.
- Developed a **Firewall** to perform stateful network inspection, and filter and identify malicious packets.
- Coded a Chord algorithm as a **BitTorrent DHT** for balancing the storage of files shared between peers in **Java**.

COURSEWORK

- Advanced Algorithms
- Data Mining & Machine Learning
- Software Engineering
- Advanced Programming in Java
- Intensive Operating Systems
- Topics in Distributed Systems
- Data Structures in C++
- Services Oriented Computing
- Topics in Network Security

ADDITIONAL EXPERIENCE AND AWARDS

- **Dean's Fellowship Award (2015-2016)**: Awarded to admitted PhD students at Northeastern University.
- **Dean's Honor List Award (2011-2015)**: Awarded to students achieving academic excellence at LUMS.
- **Teaching Assistant** for graduate-level computer networks course at LUMS.
- **Student Researcher (2014-2015)**: Designed a system to secure cloud computing by eliminating sources of non-determinism in virtual machines.

TECHNICAL SKILLS

Skills: Python, Java, C++, MySQL, Go, JavaScript, HTML, CSS.

Others: Unix, Networking, Network Protocols, Cloud Computing, Big Data Analysis, API, Backend Development, Object Oriented Programming, System Development Life Cycle, Docker, Nginx.