

Education

M.Sc. **Tufts University, Medford MA** **Dec 2017**
Major: Computer Science
• Graduate Tuition Scholarship, awarded to students with scholarly promise.


B.Sc. **Lahore University of Management Sciences (LUMS), Pakistan** **May 2014**
Major: Electrical Engineering | Minor: Computer Science


Relevant Coursework	Internet Scale Distributed Systems	Algorithms & Data Structures	Operating Systems	Computer Networks
	Rethinking Internet Architecture	Probability & Statistics	Advanced Calculus	Network Security
	Topics in Internet Research	Computation Geometry	Computation Theory	Cloud Computing


Technical Skills

Languages	C, C++, Python, C#, MATLAB, JavaScript, shell, SQL, TCL, XML, CSS, HTML, JSON, PHP, Java (familiar)
Areas	Unix, Computer Networking (TCP/IP), Research, Cloud Infrastructure, Computer Vision, Robotics
Technologies	Visual Studio, git, OpenCV, Robot Operating System (ROS), Point Cloud Library (PCL)

Employment

Research Asst. **Tufts University, Medford MA** **Fall 2014 - present**

Network Systems
• Reduced tail latency up to 10 times by using redundancy in a novel way to effectively mitigate stragglers in the Cloud.
• Demonstrated gains on Google Cloud by implementing a redundancy-aware network traffic generator.
• Published results as a first author with 2 collaborators at a top-tier workshop, ACM HotNets'2016. Publication: [link](#)

Software Intern **Microsoft, Redmond WA** **Summer 2013**

Development of Automated Test Suite
• Reduced shipping time of datamarket.azure.com by 95% by developing a tool to automate production testing in C#.
• Enabled tests to safely run in production by implementing a kill switch which turns testing off at peak loads.
• Assured reporting accuracy by marking test traffic to distinguish it from real usage (in collaboration with BI team).

Research Intern **LUMS, Lahore Pakistan** **Spring 2013**

Robotics & Computer Vision
• Facilitated autonomous land excavation with the aid of Computer Vision techniques.
• Calibrated a stereo vision camera pair for depth perception using OpenCV.
• Estimated excavated material volume by generating 3D point-clouds of the excavator bucket. Acknowledged: [link](#)

Project Experience

Cloud Topology	• Designed a network topology to improve the availability, predictability, and efficiency of data centers. Git: link
Routing Protocol	• Analyzed the feasibility of unequal cost multipath routing in data centers by comparing it with ECMP routing.
Sensor Fusion	• Achieved robust control of a robotic end effector to scan an uneven terrain using sensor fusion. Report: link
Smartphone App (Microsoft Imagine Cup)	• Contributed to the goal of eradicating Polio by building a phone app which monitors vaccine coverage in Pakistan.

Presentations & Teaching

Research Talks	• Delivered talks on Cloud Networking: HotNets'2016, Atlanta SIGCOMM M.M.'2015, London NENS'2014, Boston.
Posters	• Presented work on Redundancy-Aware Network Stack for Data Centers at NENS'2016 & '17 in Boston.
Matlab Workshop	• Conducted a workshop for non-programmers in November 2016 at Tufts University.
Teaching Asst.	• Taught Algorithms, Computer Networks, Computation Theory and Discrete Mathematics at Tufts and LUMS.