

# Muhammad Anas Imtiaz

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## EDUCATION

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**Boston University** | Boston, MA

Expected June 2022

*Ph.D. in Computer Engineering*

- GPA: 3.86
- Relevant coursework: Applied cryptography, Applied algorithms for engineers, Cybersecurity

**National University of Computer & Emerging Sciences** | Lahore, Pakistan

Spring 2014

*B.Sc. in Electrical (Computer) Engineering*

- GPA: 3.74
- Silver medalist; Cum Laude; Dean's List (8 semesters)
- Relevant coursework: Programming for Engineers, Data Structures, Data communication and networks, Computer Logic Design, Microcontroller interfacing and programming

## ACADEMIC RESEARCH AND PROJECTS

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**Boston University** | Boston, MA

September 2017 – present

*Graduate Research Assistant*

- Investigated presence and impact of churn in the Bitcoin network
- Collected data from Bitcoin blockchain crawler showing 97% nodes experience churn; fitted best model to data; performed live measurements on Bitcoin network
- Showed degraded performance of current protocol in presence of churn
- Studied characteristics of orphan transactions in the Bitcoin network
- Measured network overhead incurred by a node in network, configured with default parameters, due to orphan transactions
- Observed network overhead with a variation of parameter values and suggested a simple fix resulting in least overhead

**National University of Computer & Emerging Sciences** | Lahore, Pakistan

*Handroid: A glove interface to sense hand gestures for sign language vocalization and control of robotic hand*

- Constructed a glove interface to detect human motion when worn
- Designed specifically for deaf/mute people relying on sign language for communication
- Devised and effected an algorithm to convert sign language to audio and text
- Replicated human hand motion on a robotic hand through a machine-control system
- Won several competitions, awards and National ICT R&D fund
- Responsible for software programming and development
- Facilitated procurement of hardware, i.e., sensors, controllers, actuators
- Managed project finances to ensure satisfactory cost of project

## PROFESSIONAL EXPERIENCE

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**Boston University** | Boston, MA

September 2018 – December 2018 and January 2019 – May 2019

*Graduate Teaching Assistant*

- Assisted professors in course “Applied algorithms for engineers”
- Created and graded homework solutions
- Held office hours
- Managed undergraduate teaching assistants
- Resolved administrative and student-related issues

**Mentor Graphics, a Siemens business** | Lahore, Pakistan

August 2016 – July 2017

*Senior Software Development Engineer*

- Implemented development and testing of Microcontroller Abstraction Layer for the Input Capture Unit module under the AUTOSAR architecture
- Developed ICU's configurations and helped with configuration generator development and testing

**Mentor Graphics, a Siemens business** | Lahore, Pakistan

December 2014 – July 2016

*Software Development Engineer*

- Developed several Mentor legacy network stacks including 'Volcano Target Package' and 'LIN Target Package'
- Upgraded and maintained CAN and LIN network protocol stacks
- Developed configuration generation tool and tests for CAN and LIN controller drivers for different microcontroller architectures
- Performed AUTOSAR Diagnostics over IP modules' test enhancement and development by identifying cases to increase code coverage
- Created several automation scripts for various tasks such as building tests, interacting with version control tools, and more using Windows BATCH, UNIX Shell and Python scripting languages
- Performed debugging with different tools such as Lauterbach, CubeSuite+, CodeWarrior, & more
- Provided customer support regarding service requests and maintenance

## **PUBLICATIONS**

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- Imtiaz, Muhammad Anas, et al. "Characterizing Orphan Transactions in the Bitcoin Network." *2020 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*. IEEE, 2020 [Accepted]
- Imtiaz, Muhammad Anas, et al. "Churn in the Bitcoin Network: Characterization and Impact." *2019 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, Seoul, Korea (South), 2019
- Bhatti, Omer Saleem, et al. "Adaptive Collaborative Position Control of a Tendon-Driven Robotic Finger." *Journal of Control Engineering and Applied Informatics* 20.2 (2018): 87-99
- Bhatti, Omer Saleem, et al. "Attitude control and stabilization of a two-wheeled self-balancing robot." *Journal of Control Engineering and Applied Informatics* 17.3 (2015): 98-104
- Nisar, Osama, et al. "Performance Optimization of a Flex Sensor Based Glove for Hand Gestures Recognition and Translation." *International Journal of Engineering Research and Technology (IJERT)* 3.5 (2014)

## **LEADERSHIP**

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**Boston University ECE Graduate Student Association** | Boston, MA

February 2020 – present

- Secretary and Web administrator
- Helped organize various events including an alumni panel directed towards helping students apply for jobs after graduation

## **SKILLS**

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*Programming:* proficient in C/C++, Python, Matlab

*Computer:* Microsoft Office (Word, Excel, PowerPoint), Git, UNIX CLI

*Language:* Urdu (proficient), Punjabi (good)

## **HOBBIES**

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- Traveler and photographer
- Occasionally contribute to Math.StackExchange (<https://math.stackexchange.com/users/533556/an4s>)