

# HASEEB AHMED

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## EDUCATION

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**University of Waterloo, Canada**, Masters of Mathematics (MMath-CS) Expected 2025

Research area: Privacy Protecting Databases.

GPA: 97/100

**Lahore University of Management Sciences, Pakistan**, Bachelor of Computer Science (BS) 2019-2023

Graduated with High Distinction

## RESEARCH

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### Oblivious Relational Database:

- Goal of the project is to develop a **relational database** that is resistant to access pattern and volume pattern attacks under passive-persistent adversarial model. The data store supports a subset of SQL operations such as **select**, **range** and **joins** along with aggregate functions.
- Supervised by Dr. Sujaya Maiyya (University of Waterloo).

### Web Affordability:

- Supervised by Dr. Zafar Ayyub Qazi and Dr. Ihsan Ayyub Qazi (LUMS).
- Led a project that carried out an empirical analysis of the data costs and affordability of video ads on YouTube in developed and developing regions.
- Managed a team of three research interns working on the project.
- Collected and analyzed over 4500 YouTube videos showing over 6500 video ads from 10 countries.

### CVE Prioritization:

- Supervised by Dr. Wajih ul Hassan (University of Virginia).
- Project focuses on extracting finite state automatas for different Common Vulnerabilities and Exposures (CVEs) through dynamic analysis of Proof of Concept (POC) programs.
- Worked with angr binary analysis toolkit while working with C/C++ programs.
- Devised a methodology to collect control-flow graphs and map important functions to their corresponding system calls for Python POCs.

## PUBLICATIONS

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- **SIGCOMM 2023**: A Framework for Improving Web Affordability and Inclusiveness (Rumaisa Habib\*, Sarah Tanveer\*, Aimen Inam, **Haseeb Ahmed**, Ayesha Ali, Zartash Afzal Uzmi, Zafar Ayyub Qazi, Ihsan Ayyub Qazi) [\*Joint first authors]

## PROFESSIONAL EXPERIENCE

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**Software Engineering Intern** June 2022 - August 2022

Tajir (YC Winter-2020) *Lahore Pakistan*

- Worked primarily as a back-end developer. Hands on experience with Google Cloud suite, deploying applications on google kubernetes.
- Successfully developed and deployed an internal company tool allowing for better company product pricing.

- Worked directly with the Product Manager to design, develop and deploy system integration for various tools used by customer support and warehouse teams.
- Continued asynchronous support for components I had built during my time at Tajir. Was employed on a contractual basis.

### Teaching Assistant

Lahore University of Management Sciences

August 2021 - May 2023

*Lahore Pakistan*

- **Topics in Internet Research (CS-678):** Responsible for assisting students with research papers and understanding the research projects. Hold weekly meetings that involving discussing the various research projects groups are carrying out. Grading components including class participation and paper summaries.
- **Machine Learning (CS-535):** Responsible for creating and grading assignments and quizzes. Held regular tutorials and office hours. Responsible for five group projects related to voice categorization.
- **Introduction to Programming (CS-200):** Responsible for creating and grading lab and quizzes. Assisted in development of assignments and class content.
- **Intro to Artificial Intelligence (CS-331):** Responsible for creating and grading assignments and quizzes. Held regular tutorials and office hours.

### EXTRA-CURRICULAR ACTIVITIES

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- **IEEE (LUMS) Coding Guru 4.0 Convener:** Primary responsibilities encompass designing competition modules, picking strong event heads and technical teams.
- **LUMS Model United Nation IT team:** Developed an in-house web application to cater to Model United Nation format and requirements. Deployed and used by over 400 students during the event.
- **Research Portal:** Currently developing a simple web application to fill the communication gap that exists between students who are interested in research and professors looking for students.

### COURSE PROJECTS

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- **Online Live Video streaming platform:** Course: Topics in Internet Research  
In order to quantify delay behind live experienced in online live video streaming, we created our own live streaming platform. This platform showed three different streams of the same content at different resolutions (with different delay behind lives). An experiment was conducted using a pool of 20 students who were asked their preference.
- **Online Marketplace:** Course: Software Engineering  
A simple online marketplace where a user can browse through catalogs of product and order products. Integrated various external API's for payment and location.

### TECHNICAL SKILLS

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**Programming Languages:** C, C++, Python, Go, Haskell, JavaScript and R.

**App/Web Development:** MongoDB, SQL, React, Flask and Django.

**Miscellaneous:** NumPy, Pandas, Pytest, Docker, Selenium, Bash and Google Cloud Platform.

### HONORS AND AWARDS.

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**Dean's Honour List:** Fall & Spring 2020-21. Spring 2021-2021

**Graduation:** Graduated with Distinction.