

HASEEB-UR-REHMAN FAHEEM

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EDUCATION

University of Waterloo

Sep 2023 - August 2025

Master of Mathematics in Computer Science - GPA: 3.9/4.0

Waterloo, Canada

- Awards: International Master's Award of Excellence (merit-based scholarship)

Lahore University of Management Sciences

Sep 2019 - May 2023

Bachelor of Science in Computer Science

Lahore, Pakistan

- Awards: Graduated with High Distinction, Dean's Honor List (four consecutive years)
- Coursework: Data Structures, Artificial Intelligence, Algorithms, Operating Systems, Data Science, Machine Learning

TECHNICAL SKILLS

Programming Language: Kotlin, Java, Python, C/C++ , JavaScript, Bash, Haskell

Frameworks & Libraries: Express.js, Node.js, ReactJS, Angular.Js, Scikit-learn, Keras, Pytorch, Numpy, Tensorflow

Database: Room for Android, SQLite, Firebase, SQL / MySQL, Postgres, MongoDB

Developer Tools: Linux, Github, Docker, Kubernetes, Postman, Selenium, Grafana, AWS EC2 & S3, Vagrant

EXPERIENCE

Cryptography, Security, and Privacy Lab - University of Waterloo

Sep 2023 – August 2025

Software Engineer | Research Assistant - Supervised by Yousra Aafer

Waterloo, Canada

- Developed a tool combining static analysis and large language models (LLMs) to analyze and detect access control (AC) vulnerabilities in Android Framework APIs, reducing manual analysis time by 90%
- Improved access control prediction accuracy from 38% to 79% by leveraging LLMs for sink identification and a retrieval-augmented generation (RAG) model with dense CodeT5+ embeddings for enhanced semantic analysis
- Modeled AC propagation via dependency graphs and controlled flooding, abstracting Java data-holder relationships to detect data-driven inconsistencies with 97% accuracy in Android Open Source Project (AOSP)
- Identified 16 insecure APIs via PoCs acknowledged by Vivo/Samsung (\$300+ bug bounties awarded)

Internet Security and Privacy Lab - LUMS

Sep 2022 – June 2023

Cloud Systems Developer | Research Assistant - Supervised by Fareed Zaffer

Lahore, Pakistan

- Developed an anomaly-based threat detection framework utilizing graph neural networks (GNNs) and translation-based embedding model (TransE) to detect container escape attacks in Docker and Kubernetes audit logs
- Designed a knowledge graph to integrate first-order and high-order connectivity of system entity interactions, increasing detection precision by 24% and recall by 19% compared to baseline models

Techloyce

June 2022 – Sep 2022

Software Development Intern

Remote - UK

- Developed **SubscriptionFlow's SaaS billing mobile app (YC W22)**, optimizing cache storage and search/filter features to reduce data retrieval by 70% and drive **\$100K+** annual revenue for 20+ businesses
- Integrated Logistic Regression models with class weighting (scikit-learn) to address imbalanced churn data, achieving 90% recall in high-risk customer detection
- Implemented a CI/CD pipeline with Docker and GitHub Actions, ensuring consistent build-test-deploy workflows

PROJECTS AND HACKATHON

Amazon Robotics Hackathon

[Github Link](#)

- Placed 1st with a pathfinding algorithm based on breadth-first search that efficiently navigates a dynamic environment

Open Source Contributions to SPADE

[Github Link](#)

- Implemented a Java-based Contextual Temporal Traversal Transformer, leveraging edge timestamps and local minimum filtering to optimize the traversal of provenance graphs and reduce false dependencies

BookShelf

[Github Link](#)

- Built a full-stack MERN book marketplace with advanced search, user auth, and Stripe integration; deployed via Netlify (frontend) and AWS EC2 (backend) for scalable cloud hosting

LEADERSHIP

Fizaa Foundation

Sep 2021 – Dec 2021

Co-Founder / Logistics Head

Lahore, Pakistan

- Led climate action NGO deploying 10K+ trees and 12 cleanliness drives; fundraised **\$600+** from donors, partnered with city officials, and trained 50+ volunteers to lead workshops on sustainable forestry and recycling for 300+ residents