

GABRIELLA GERGES

Halifax, Nova Scotia, Canada | ggerges019@gmail.com | [linkedin.com/gabriella-gerges/](https://www.linkedin.com/gabriella-gerges/)

EDUCATION

Western University

Masters of Engineering Science, Software Engineering (MEsc.)

June 2025

Bachelor of Engineering Science, Software Engineering with Distinction (BESc.)

2023

- Ontario Graduate Scholarship (OGS) (2023)
- Dean's Honor List (2021, 2022, 2023)
- Western Scholarship of Excellence (2019)

Accomplishments: SheHacks V Winner 2021 (Wolfram Alpha Award), TamuHacks Winner 2021 (AA Challenge)

Programming Languages (Expert): JavaScript, Python, Java, Bash, HTML/CSS

Programming Languages (Novice): C#, Ruby, TypeScript, SQL, C++

Frontend & UI: React.js, Next.js, Tailwind CSS, Material UI, Figma

Backend & APIs: Node.js, Ruby on Rails, GraphQL, Firebase, REST APIs

Cloud & DevOps: Docker, AWS, Git, Unix/Linux, VM Environments

Cybersecurity: Penetration Testing, Network Traffic Analysis, DoS Simulation, IDS Dataset Creation

RESEARCH EXPERIENCE

Western University, Department of Electrical and Computer Engineering

2023-2025

- Conducted penetration testing on an open-source EV charging infrastructure, identifying critical vulnerabilities in **MQTT-based network communication**.
- Developed a **virtual testbed** using Docker and VM-based simulation to model smart charging environments and test **multi-threaded DoS attacks** using Python and Bash.
- Used Kali Linux tools (Wireshark, tcpdump, nmap) for traffic sniffing, IP reconnaissance, and vulnerability analysis of simulated charging infrastructure.
- Built and tested ML-based Intrusion Detection Systems (IDS) to detect anomalous network traffic, using custom datasets derived from simulated attack scenarios.
- Analyzed communication protocols (OCPP, ISO 15118, IEC 61850) to uncover vulnerabilities in Charge Point-to-Backend communications.
- Presented findings to technical and non-technical stakeholders; successfully defended thesis during academic and public evaluation.

WORK EXPERIENCE

HyperPad

Summer '21, '22, '23

Software Engineer, Full Stack Developer

London, ON, Canada

- Performed migrations, transactions, and used **GraphQL with Ruby on Rails** to contribute to the backend of a large-scale project. Debugged and implemented features for a bot using Playwright, automating the creation of grants for charities. **Created and implemented tests** using Cypress.js and Cucumber pre-processor to improve software reliability.
- Contributed to building features for consulting projects using **React.js, JavaScript, HTML, CSS**, receiving positive reviews each sprint. Developed and debugged backend features using **Firebase and the Next.js** Framework. Built **Detox e2e tests** to verify app features and developed cross-device groups and audio sync features for app users.

Teaching Assistant, Software Design, Web Technologies

Winter 2024, Fall 2023

Western University, Department of Electrical Engineering

London, ON, Canada

- Efficiently graded and provided constructive feedback on assignments focusing on UML diagrams, JavaFX, and software design principles within tight deadlines of 2-3 days.
- Facilitated in-person lab sessions, offering guidance and support to students in understanding course material and applying practical skills in software development.
- Facilitated labs on **full-stack web development** and **AWS deployment**, aiding students in application creation and cloud hosting.

SELECTED PROJECTS

Travel Buddy

2021

Hackathon Project | Game Design & Implementation (C#)

- Integrated American Airlines' Flight Engine API into a backend service to dynamically retrieve real-time flight data.
- Contributed to 3D scene navigation and interactive UI development using **Unity and C#**, despite having no prior experience.
- Collaborated in a cross-functional team to prototype an immersive travel planning experience in under 24 hours.

WeGrowth

2021

Hackathon Project | Game Design & Implementation (C++)

- Implemented UI elements and game assets in C++ despite no prior experience with the language or toolchain.
- Integrated custom sprite, background, and icon designs into the game, collaborating closely with the design lead.
- Sourced and implemented ambient sound and game effects to enhance user experience.
- Demonstrated adaptability and rapid learning in a fast-paced team environment.

Val-T

2021

Database Management Systems, Final Project

- Led a group of university students by delegating responsibilities, establishing expectations and tracking progress to successfully manage the project which resulted in a **fully functional and usable web application**.
- Developed a **relational database** for a **Valorant tournament system** that stored data such as tournaments, matches, players, non-players and displayed the information to users from the back-end through **Node.js and MySQL**.
- Designed the user interface using **Figma** and successfully implemented the entire front-end through React.js which resulted in the final product being interactive, user-friendly and functional.