

GABRIELLA GERGES

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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, Golang, MongoDB, Neo4J

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

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

WORK EXPERIENCE

HyperPad

Summer '21, '22, '23

Software Engineer, Full Stack Developer

London, ON, Canada

- Onboarded and mentored new hires, teaching Git CLI workflows, pull request rebasing, and clean code practices.
- Collaborated with UI/UX designers to develop polished, user-focused frontend features.
- Developed backend services using GraphQL, Ruby on Rails, and Firebase to enhance performance and scalability.
- Automated grant workflows with Playwright bots, improving operational efficiency.
- Created robust E2E tests with Cypress, Detox, and Cucumber to ensure software quality.
- Delivered responsive frontend components with React.js, HTML/CSS, and Next.js in an Agile environment.

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

AI Resume Chatbot

Personal Portfolio Project | *Full Stack Development*

2025

- Built an AI-powered chatbot that answers questions about my resume using a hybrid retrieval system combining Neo4j graph traversal and OpenAI vector embeddings.
- Developed a Go backend integrating GPT models with intelligent prompt construction and session handling.
- Modeled resume data in Neo4j as a connected graph with embedded vectors for semantic search and relationship-based retrieval.
- Designed a responsive React frontend with TailwindCSS, shadcn/ui, and Vite, featuring animated typing and real-time chat flow.
- Implemented a CI/CD pipeline using GitHub Actions to automate build, test, Docker packaging, and deployment to DigitalOcean, with automated frontend deployment to GitHub Pages.

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.

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.