

Youssef Elfaramawy

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Education

University of Ottawa - Master of Engineering in Electrical and Computer Engineering Expected Dec 2026

University of Ottawa - Bachelor of Applied Science in Computer Engineering 2023

- Magna Cum Laude (CGPA: 8.45/10) | Merit Scholarship and Dean's Honor List (2020 to 2023)

Skills

Languages: JavaScript, TypeScript, Python, C++, Java

Frameworks: React, Node.js, Express.js, Flask, Mocha, Chai

Tools: AWS, Docker, PostgreSQL, Git, Wireshark, RabbitMQ, Linux, HOMER

Certifications: AWS Certified Cloud Practitioner

Experience

Software Developer Co-op May 2022 – Aug 2022

Mitel Networks Corporation – Ottawa, ON

- Expanded the status API with IP validation for allocated servers, reducing false alerts and improving monitoring accuracy
- Analyzed and optimized VoIP call flows using Wireshark and HOMER, modifying hold-tone routing between the app and PBX gateway to improve end-user call quality
- Developed and executed unit tests (Mocha, Chai) for new features, ensuring 100% code coverage and minimizing post-deployment bugs

Software Developer Co-op Sept 2021 – Dec 2021

Mitel Networks Corporation – Ottawa, ON

- Implemented REST APIs using AWS to support real-time status reporting via color-schemed signals, improving incident response times for monitoring teams
- Developed a chat-integrated voicemail system with audio-to-text transcription and message attachment, increasing accessibility and improving user engagement
- Authored a comprehensive Wiki documenting voicemail service functionality and improvement recommendations, serving as a reference for future development

Application Developer Co-op Feb 2021 – Apr 2021

Transport Canada – Ottawa, ON

- Modernized legacy web applications by developing government-compliant web templates to maintain user accessibility and usability standards for public services
- Conducted W3C and WAVE accessibility testing, identifying and resolving violations achieving full standard compliance
- Developed front-end applications using HTML, CSS, and Visual Basic to meet client specifications

Projects

VanLife | JavaScript, React.js, Node.js, Express.js, PostgreSQL

- Created a full-stack rental app to connect hosts offering vans with renters planning road trips
- Designed REST APIs for van listings and rentals with secure session handling and PostgreSQL synchronization
- Developed host dashboards with income analytics, transaction logs, listings, and reviews for better platform visibility

Network Traffic Simulation | Python, NumPy, SciPy, Matplotlib

- Simulated a firewall-based network to analyze throughput, latency, and network packet loss under varying traffic loads
- Verified simulation correctness using Q-Q plots and M/M/1 benchmarks and removed bias with steady-state detection
- Compared 3 configurations via ANOVA and Bonferroni tests (95% CI) to identify performance-efficiency trade-offs

Football Player Interaction | C++, Cell-DEVS, Cadmium, Cell-DEVS Viewer

- Simulated spatial player behavior to model dynamic interactions (passing, dribbling, etc.) in sports using cellular automata
- Introduced zone-based off-ball logic by role (defender, midfielder, attacker) to enhance simulation realism
- Verified transitions with grid logs and GUI playback to ensure accurate cell updates and logic event propagation