

# Majed Mouawad

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## EDUCATION

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### University of Ottawa

Ottawa, ON

*Bachelor of Applied Science in Computer Engineering (COOP)*

*Sep. 2020 - Dec. 2024*

- Cumulative GPA: 3.85/4 (Magna cum laude)
- Dean's Honour List, Merit Scholarship, Differential Scholarship

## WORK EXPERIENCE

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### University of Ottawa, IT Services

Ottawa, ON

*Software Engineer*

*May 2022 - Present*

- Engineered an advanced AI-driven Health and Wellness platform enabling over 40,000 University of Ottawa students to interact with a chatbot for general wellness inquiries, personalized medical resource recommendations, and automated management of medical appointments at campus clinics
- Integrated Azure Cognitive Services including Conversational Language Understanding (CLU), achieving intent and entity recognition with 85% precision and 90% recall, alongside Azure QnA Maker for general query handling and Retrieval-Augmented Generation (RAG) powered by Azure Cognitive Search and Azure OpenAI to perform semantic searches across hundreds of indexed university resources
- Developed a scalable, secure TypeScript backend API leveraging WebSocket connections to handle real-time user authentication, message processing, and dynamic routing to appropriate AI workflows based on determined user intent, ensuring seamless and responsive user experience
- Designed and built a .NET application using C#, ASP.NET Core and MVC, enabling medical residents to submit and receive stipend payments
- Maintained and enhanced over 10 diverse applications, achieving 100% resolution of TopDesk support tickets by implementing critical updates, optimizing performance, and delivering key project enhancements on schedule
- Managed and optimized multiple SQL and MySQL databases, implementing and refining stored procedures, scripting database enhancements, and ensuring data integrity to support key institutional functions
- Configured and implemented SAML SSO on all Faculty of Medicine applications, successfully transitioning all applications from LDAP authentication to SSO using Microsoft Entra ID as the identity provider
- Developed a GitLab CI/CD pipeline for 8 applications, incorporating automated testing, static code analysis by packaging applications in Docker containers and offloading to a remote server, with results seamlessly integrated back into the pipeline for automated reporting and continuous monitoring
- Implemented security protocols across more than 5 .NET applications, eliminating 100% of medium, high, and critical threats detected by Qualys scans

## PROGRAMMING PROJECTS

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### VisiCap (Capstone Project)

Ottawa, ON

*Team Lead, Software & Hardware Teams*

*Jan. 2024 - Dec. 2024*

- Developed a smart navigation hat system aimed at helping visually impaired individuals navigate safely and confidently using real-time danger recognition and feedback mechanisms
- Trained a custom model based on YOLOv8 and integrated it with DeepSORT for real-time object detection and tracking, designed to recognize and classify obstacles with 85% accuracy using the integrated camera's live feed
- Developed a danger recognition algorithm that provides spoken movement recommendations via headphones, guiding users on how to avoid potential hazards based on the real-time obstacle detection model
- Integrated the MPU6050 sensor with a Python algorithm to achieve 95% confidence in real-time fall detection
- Engineered wristbands with vibrating motors and proximity sensors to provide tactile feedback on nearby obstacles
- Designed a React Native application for caregivers to track users' real-time location and receive fall alerts

## LEADERSHIP EXPERIENCE

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### Business Technology Association

Ottawa, ON

*Vice President of External Affairs*

*Jan. 2023 - Apr. 2024*

- Provided workshops, networking opportunities, and social events to over 350 students interested in careers such as project management, data engineering, consultancy, etc.
- Led a team that successfully engaged over 75 industry professionals to participate in 15 diverse events with University of Ottawa students working towards a business technology related career
- Raised over \$25,000 in annual sponsorship revenue by structuring and closing long-term collaboration deals with major technology and consulting companies

## SKILLS

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**Programming Languages:** TypeScript, JavaScript, C#, Python, Java, C, C++, HTML/CSS, SQL

**Frameworks/Libraries:** Zod, Redis, ReactJS, NodeJS, ExpressJS, ASP.NET, Blazor, MVC, PyTorch, OpenCV

**Developer Tools:** Git, Shell, Docker, Azure, Jira, SQL Server Management Studio

**Spoken Languages:** English, French