YOUSEPH ELKHOULY

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Education

University of Guelph   **September 2023 – April 2027**
Bachelor of Computing, Computer Science Honours   *GPA: 3.7*

Relevant Coursework: Data Structures & Algorithms, Discrete Math, Object-Oriented Programming, Database Systems, Parallel Programming, Operating Systems, Systems Analysis and Design, Software Reliability & Testing, Software Engineering

Technical Skills

Languages & Database: Python, Java, Javascript, Typescript, C, SQL, PostgreSQL, MongoDB, Firebase.
Frameworks & Tools: React, Redux, Express, Spring, Flask, AWS, Docker, Jest, Pytest, Git, CI/CD.

Experience

Jasara Technology · Software Engineer Intern   **Sep 2025 – Present**
Python (FastAPI) · TypeScript (React) · SQLite/pgvector · Azure OpenAI API   *Hamilton, Ontario*

- Engineered an AI-powered customer support chatbot using FastAPI and retrieval-augmented generation (RAG) with vector embeddings for semantic search across company documentation, implementing async processing and intelligent prompt engineering to automate **65%** of common inquiries.
- Developed a chat widget with real-time WebSocket messaging and conversation persistence to enhance user satisfaction through intuitive customer interactions.
- Implemented comprehensive data protection and escalation system with automated PII detection and redaction, coupled with ML confidence scoring to ensure seamless handoff of sensitive or complex cases to human agents, achieving **100%** secure handling of customer data.
- Built a modular AI inference layer with Azure OpenAI API, allowing flexible provider integration

Aiducare · Mobile App Developer Intern   **June 2025 – August 2025**
TypeScript · Python · React · AWS (S3) · PostgreSQL   *Montreal, Quebec (Remote)*

- Built an interactive audio playback feature enabling click-to-hear pronunciation, enhancing user engagement and comprehension for **30+** active learners.
- Designed an intuitive interface for pronunciation practice that allows users to record speech and view ML-generated feedback and progress insights, improving learning accuracy by **40%**.
- Reorganized components into shared, reusable React Native modules with consistent styling, reducing code duplication by **30%** and improving cross-platform maintainability.

Stylus Marketing · Software Engineer Intern   **May 2024 – August 2024**
Python · TypeScript · PostgreSQL · AWS (SQS, Lambda, & EventBridge) · React   *Toronto, Ontario, Canada*

- Engineered a serverless inventory tracking and management service adopted by **50+** clients, delivering scalable, cost-efficient operations.
- Architected an automated, event-driven Stripe integration for overdue charge recovery, incorporating dynamic retry logic and real-time alerts to boost payment reliability and accelerate resolution times by **75%**.
- Implemented intuitive dashboards for payment and inventory management, leveraging WebSockets for instant data synchronization and delivering a seamless, user-friendly interface that reduced user onboarding time.

Projects

Merchant | TypeScript · Python · React · Flask · AWS · Docker · PostgreSQL
- Developed a full-stack web application that aggregates listings from multiple second-hand marketplaces, providing users with a centralized platform to discover sellers efficiently.
- Built a web scraping pipeline using BeautifulSoup to collect and process listing data from platforms such as Kijiji and Facebook Marketplace.
- Integrated Twilio API to deliver SMS notifications when new listings matched user-defined keywords and preferences.

SparkAndPrepper | React · Express · TypeScript · Firebase · MongoDB
- Created an AI-powered web platform that transforms uploaded course materials into interactive learning tools, such as study guides, flashcards, cheat sheets, and mock exams.
- Engineered backend services for document upload, parsing, and integration with the Gemini API to generate structured academic content.
- Utilized Firebase for file storage and access, and MongoDB for user authentication, session handling, and metadata management.
- Implemented prompt engineering strategies to enhance the relevance and precision of AI-generated content.