Maaz Makrod

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Technical Skills

Languages: JavaScript, TypeScript, Python, C, C++, Java, HTML, CSS (SASS/LESS), SQL
Technologies: AWS, Azure, MongoDB, MySQL, Contentful, Bynder, Heroku, Postman, Figma, Terraform, Git, Redis
Frameworks/Libraries: Next.js, React, Express, GraphQL, Three.js, D3, Material UI, Langchain, Hugging Face, CI/CD

Experience

Konrad Group | *Next.js, TypeScript, Python, Azure, AWS, Contentful, Bynder, Redis, AEM*   **May 2023 – Aug. 2024**
Associate Software Engineer Intern   *Toronto, ON*
- Worked on cross-functional teams to provide software solutions for clients ranging from startups to the Fortune 500
- **Architected** and **implemented new features**; enhanced **SEO**, **user experience** and **accessibility** on client apps
- Used **Terraform** to setup the infrastructure for a server which reduced a client's dependency on third-party solutions
- Led the development of an asset migration tool using **TypeScript** to automate the transfer of **10s of thousands of assets** from a CMS to DAM while ensuring backward compatibility for a large commercial real estate group
- Automated the synchronization of upstream and downstream data sources in client CMSs using **OOP** to mitigate the need to manually duplicate entries between CMS spaces **saving hours weekly**
- Developed an **E2E data processing pipeline and AI model for multi-class classification** along with a testing framework and REST API to support RLHF for a large banking infrastructure company

LabOnWeb | *JavaScript, React, Java*   **Sep. 2022 – Apr. 2023**
Software Developer   *Toronto, ON*
- Worked on an Edtech platform that allows students to simulate physics experiments using a web application
- Expanded the capabilities of the **computation engine** and used **OOP** to create interactive simulation tools

Rocscience Inc. | *JavaScript, LAMP, C#, Unity*   **May 2022 – Aug. 2022**
Software Developer Intern   *Toronto, ON*
- Developed an application to create and edit 2D/3D models of excavation sites using **D3** and **Three.js** allowing **1000s of users worldwide** to interact with their sites on the web
- Utilized **OOP** to develop an image loader tool that enabled users to upload and interact with images on their sites
- Created a feature to interact with **Google and MapBox APIs** to load in and render 2D and 3D map tiles so that users can interact with their excavation site in surrounding terrain
- Identified and resolved redundancies in model export files **reducing the file sizes by 67%**

Canadian Sheep Federation | *React, MongoDB, Express, Node, Figma*   **May 2021 – Aug. 2021**
Software Developer and QA Auditor   *Toronto, ON*
- Created an application to monitor the transportation of sheep **nationwide** eliminating the need for handwritten reports
- Designed schemas and performed advanced queries to improve the speed of the sheep **traceability algorithm by 15%**
- Led a team of 3 in the testing of the webapp, generation of requirement reports, and designing of new components

Projects

Speech Emotion Recognition AI Model | *Python, Numpy, Pytorch, Jupyter Notebooks*   **Apr. 2023**
- Led a team of 4 in developing an **AI model** to identify the emotion used in audio clips of varying voices
- Developed a **data processing pipeline** to create train/test/validation splits and convert audio data to spectrograms
- Tuned hyperparameters and evaluated the efficacy of several open source and custom **CNN neural networks**

Mapping Application | *C++, Glade, GTK, Open Street Map*   **Apr. 2022**
- Led a team of 3 in developing a multiclass mapping application using **C++** for data management and **GTK** for the UI
- Applied **BFS**, **Dijkstra's**, and **A*** algorithms to produce a program that finds paths between 100s of locations **sub 17s**
- Implemented a **multithreaded** solution to the traveling salesman problem ranking in the **top 25% of submissions**

Blogging Application | *MERN, Redux, Material UI*   **Apr. 2022**
- Developed an application that allows users to perform CRUD operations on posts based on their permission levels
- Used JWT to perform user authentication and utilized JEST to test the application

Education

University of Toronto   **Sep. 2020 – Apr. 2025**
Candidate for BASc Computer Engineering   *Toronto, ON*
- GPA: 3.84/4.0; Dean's Honour List; Awarded UofT Scholar and Rogers Edwards Admission Scholar scholarships
- Courses: Data Structures and Algorithms, Computer Networks (C), Operating Systems (C), Computer Architecture (C/C++), Deep Learning (Python), Software Communication and Design (C++)