Jonathan Shanmuganantham

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Education

University of Waterloo — Waterloo, Ontario
Bachelor of Computer Science, 2023-2028 — *GPA: 3.96/4.00*
Societies: Event Co-ordinator @ Computer Science Club, Data Science Club

Skills

Programming: Python, C++, C, Javascript, Typescript, HTML CSS, Java, SQL, OOP, Bash

Technologies: React, MongoDB, Express, Node, Next, Redis, FastAPI, Vercel, Manifest V3, RSA, jQuery, Tailwind

Dev Tools: Linux, Git/Github, MS Office, Google Cloud Platform, Docker, Postman, Vite, Figma, Kanban

Experience

Full Stack Developer | — United States (Remote)
Codin — *May 2023 – Dec 2023*

- Implemented server-side rendering with **Next** and **Typescript** which resulted in a ∼40% **increase in organic traffic** and ∼25% **reduction in load times** based on Google Analytics
- Created reusable **React** components and leveraged **React Hooks** to implement business-logic; **Tailwind** styling
- **Dockerized**, **documented**, and integrated **Node Express RESTful API** to interact with **MongoDB**
- Leveraged **Postman** for API testing and **Selenium** for UI testing
- Configured a **CI/CD pipeline** with Github Actions to trigger unit testing of endpoints using **Mocha** and **Chai**
- Followed **Agile** methodology while working in a team of 5 engineers and 2 designers in the startup

Front End Developer — Toronto, Ontario
Toronto District School Board — *Jan 2023 – May 2023*

- Worked with school admin to redevelop the school's site using **HTML, CSS, jQuery**, **Bootstrap**
- Used Color Oracle to make the new site more accessible to those with color blindness
- Used by ∼**1200** students to get notified about school events and access essential information

Team Captain and Lead Programmer — Toronto, Ontario
Robotics Team @ Albert Campbell C.I. — *Sep 2019 – Jun 2023*

- Designed an **autonomous** multi-terrain Arduino robot using **C++** that achieved **1st out of 20** teams at UofT's Provincial Space Exploration Competition
- Considered factors such as torque, aerodynamics, and coefficients of material friction for tires

Projects

friended. | — | — Next, Typescript, Go, Tailwind, Supabase, PostgreSQL, OpenAI

- Website that classifies users by information on their LinkedIn and Devpost in order to recommend similar users
- Employed **Next** for server-side rendering, **Supabase** for Google authentication, and **Vercel** for hosting
- Leveraged **OpenAI embeddings** to perform **vector cosine similarity search** using **PostgreSQL**

FoldMatic | — C, Assembly, Raspberry Pi 4, Debian, OpenCV, TensorFlow Lite

- Developed a **TinyML** computer vision model for clothing classification on a 64-bit **embedded system**
- Implemented **multi-threading** to integrate the model's classifications with servos and sensors to fold clothes
- Leveraged Edge Impulse for **quantization**; FP32 data was converted to INT8 for storage and speed optimizations

Pokemon Gauntlet | — Java, Object Oriented Programming, Swing

- Developed a video game in **Java** following **object-oriented** principles such as polymorphism and inheritance
- Conceptualized the system using **Unified Modeling Language** to determine dependencies and relations
- Created a **graphical user interface** using the **Swing** graphics library

Awards & Achievements

Governor General's Academic Medal, Government of Canada
Awarded for having the highest academic standing at the secondary school level (**99.2%**)

2x Distinction At Canadian Computing Competition (Senior Division)
Placed in the **top 9%** in the CCC, a data structures and algorithms competition (primarily used C++ and Python)