


MARCO TAN

Student, Developer

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SUMMARY

Mechatronics and Biomedical Engineering student at McMaster University. Experience in embedded, web, and machine learning development. Seeking software internship and co-op positions for the summer of 2024.

SKILLS

Languages: C, C++, Rust, MatLab, Maple, Lua, Python, TypeScript

Technologies: GCP, Firebase, Next.js, TailwindCSS, PyTorch, Express, Flask, numpy, pandas

PROJECTS

Robotics	Competition Code - VEX VRC 2022 Competition code for the ARM-based VEX V5 system. Uses PID and feedforward control to maneuver the robot in its environment and manipulate field objects to score points autonomously.	https://github.com/Discobots-1104A/2021-2022-branch-sample
Algorithms	Matrix Market Format Reader & Matrix Solver C code to read Matrix Market files and solve for $A * x = b$ using the Jacobi method and Successive Over-Relaxation. Iterates through huge arrays in a few minutes.	https://github.com/IonicArgon/MT2MP3-MatrixSolver
WebDev	Portfolio Website v2.0 The second version of my portfolio website, built with Next.js 12.1 (Pages Router) and ChakraUI. Single page, responsive application.	https://github.com/IonicArgon/web-v2
Robotics	Head Gesture-Controlled Wheelchair Driver Code for a Raspberry Pi-based project which controls a power wheelchair through simple head gestures. Extensive use of threading for concurrent logic, filtering of sensors with EMA running averages.	https://github.com/IonicArgon/ibehs-dp3-program
AppDev	LinkedIn Outreach Application Python application that scrapes candidates from Recruiter Lite and sends out connection requests on LinkedIn. Keeps track of sent connection requests to avoid repeated sending and to avoid LinkedIn's bot filters. UI made with PyQt5.	https://github.com/IonicArgon/localstudent-li-connect-ui

EDUCATION

2022 - 2027	BEngBME - Mechatronics and Biomedical Engineering Enrolled full-time, secretary for McMaster A Cappella (2023 - 2024), vocal director in The MacaFellas (2023 - 2024), baritone/tenor in The MacaFellas (2022 - Present)	McMaster University
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EXPERIENCE

10/2023 - Present	AI Automation & Implementation Consultant <ul style="list-style-type: none">Created a Python project to simplify candidate lookup and outreach of hundreds of applicants on LinkedIn.Began development of a full-stack solution to automate candidate lookup and outreach. Used GCP, Flask backend, Next.js frontend.Automated scraping of Toronto BIA numbers and emails.Fine-tuned custom Vision Transformer (ViT) models to classify and grade the performance of grass-cutting and leaf-collection jobs using PyTorch and Hugging Face. GCP / Firebase / PyTorch / Hugging Face / Flask / Playwright / Next.js / PyQt5	LocalStudent
6/2021 - 7/2022	Mentor <ul style="list-style-type: none">Taught many students C/C++ with the V5 system and PROS kernel. Introduced control theory, PID, feed-forward systems, odometry, sensor filtering.Introduced modelling in Autodesk Inventor to many students.Prepared all competition teams by helping to refactor codebases, testing hardware systems. C/C++ / Autodesk Inventor / Control Theory	Brampton Robotics

LANGUAGES

English - native