

Michael Pu

Software Engineering Student - University of Waterloo

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EXPERIENCE

Backend Developer - University of Waterloo Hyperloop Team

September 2019 - Present

- Implemented **database** for TeamHub, a team communication web app using **MongoDB** and **Node.js**, connecting 100 team members
- Set up development environment and deployment pipeline using **Docker**, **Zeit**, and **GitHub actions** to ensure seamless coding, testing, and deployment

Freelance Programmer - ULAAP Inc.

May 2019 - December 2019

- Designed, implemented and deployed a rating engine system to determine the cost of truck shipments using Node.js, **REST APIs**, **PostgreSQL** for greater accuracy and flexibility
- Integrated new rating engine into the existing infrastructure by creating a web interface for the end user using HTML, CSS, **JavaScript** and modular **PHP plugins**

Lead Programmer - Team 2505A, VEX Robotics

September 2018 - June 2019

- Led and trained the software team responsible for programming the manual and autonomous drive modes using **C++** and the PROS library which achieved the **2nd highest autonomous score among 67 teams**

Google Code-in 2018 - Open-Source Software Competition

December 2018 - January 2019

- Completed several small tasks for Sugar Labs and OpenWISP using HTML, CSS, JavaScript, Git, Linux command line, and shell scripts to contribute to **open source software**

PROJECTS

EncryptChat - End-to-End Encrypted Chat System

github.com/mchlp/encryptchat

- Created a **chat system**, where users can send encrypted messages to each other without an intermediate server
- Constructed a web interface, server, and communication protocol using **React**, Next.js, Express, Node.js, web sockets, and **RSA/AES encryption**

Tetris Game AI - Tetris Game Clone with AI Component

github.com/mchlp/TetrisGameAI

- Built using **Java** and JavaFX with **unit tests** using JUnit
- Trained AI using a **genetic machine learning algorithm** which scored over **700 times higher** than a human player

Rubik's Cube Solver

github.com/mchlp/Rubiks-Cube-Solver

- Collaborated with a team to construct a physical Rubik's Cube Solver capable of solving in under 30 seconds
- Worked on the **algorithm** using a library and Arduino communication in **Java** as well as the colour calibration in **OpenCV** and **Python**

SKILLS

Languages: JavaScript, Java, Python, C/C++, SQL, HTML, CSS, Bash

Frameworks/Software:

Node.js, React, MongoDB, Jest, Nginx, JavaFX, MySQL, Docker, Google Cloud Platform

Tools: Git, Linux, Arduino, Raspberry Pi, Visual Studio Code, Vim

EDUCATION

Candidate for Bachelor of Software Engineering

University of Waterloo

September 2019 - 2024

(Expected)

Relevant Courses:

- CS137** - Programming Principles in C
- CS138** - Intro to Data Abstraction and Implementation in C++
- SE101** - Intro to Methods of Software Engineering

AWARDS

- President's Scholarship of Distinction**, University of Waterloo, 2019
- Grade 12 Computer Science Award**, Don Mills Collegiate Institute, June 2019
- Ontario Finalist**, ECOO Programming Competition, May 2018

INTERESTS

Space Exploration, Linux, Science Fiction, Artificial Intelligence, Aviation