

Kyle Tan

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TECHNICAL SKILLS

Programming Languages: C/C++, Javascript, Python, Java, SQL, HTML, CSS

Developer Tools: Bootstrap, Git, Figma, PyTorch, OpenCV, Firebase, MS Office, Flask, React, Node, ChatGPT

PROJECTS

3D Printer Remote Access Web App | *Raspberry Pi, JavaScript, Firebase, Flask, Google Authenticator*

- Creating a web app to remote access a 3D printer through WiFi in Python using OctoPrint.
- Developed a scalable web app using the **Flask framework** with features like user authentication via **Google Authenticator** and **NonSQL database with Google Firebase** to store 3D-model files.
- Developing a **object detection computer vision model** using the **YOLOv5 Classifier in PyTorch** to detect anomalies when printing and stop automatically.

NetHack | *C, Git, NCurses, Makefile*

- Developing a 2D turn-based text-based game using the **NCurses library** in **C**.
- Implemented the game using NCurses library for UI, use of **dynamic memory allocation** for flexibility in level design, and data structures like **adjacency lists** for non-playable characters' (NPCs) movement and inventory.
- Utilizes principles of **dynamic programming** such as memoization in **A-Star pathfinding algorithm** for enemy movement for NPC movement.

Personal Website | *Bootstrap, Git, HTML, CSS, JavaScript*

- Implemented a personal website using HTML, CSS, and Bootstrap for **responsive web design and UI components** such as **navigation bar and carousel** to showcase my portfolio in a visually appealing way.
- Utilized modern CSS techniques like **Flexbox & Grid** for a **dynamic UI** to accommodate different screen sizes.

EXPERIENCE

DeerHacks

April 2023

Extracurricular

Toronto, ON

- Participated in a competitive hackathon hosted by the University of Toronto.
- Developed an **Android app using Java** using **Google Maps API** to find ice cream trucks **in real time** and predict the future location using crowd-sourced information stored on a **Firebase** cloud server.
- Implemented truck verification done using **computer vision using a Haar Cascade classifier in OpenCV**.

Hack the North

September 2021

Extracurricular

Waterloo, ON

- Participated in a competitive hackathon hosted by the University of Waterloo.
- Used Python to train a **convoluted neural network** on 2000+ images scraped from the web using the library **Beautifulsoup4** to detect abnormalities in x-ray scans using **PyTorch**.

Dr. Norman Bethune CI Design Club

September 2017 – May 2021

Extracurricular

Toronto, ON

- Was elected as an executive for three years, helped promote STEM by making weekly activities **for +30 members** such as **Fusion 360** and **SketchUp**. Before leaving office, the club saw an increase in **+20 weekly members**.
- Spearheaded restoration of school's 3D printer and troubleshoot the problems brought by students and teachers.

CEMC Contests

February 2017 – March 2021

Extracurricular

Toronto, ON

- Participated in CEMC contests receiving a certificate of distinction in the *2020 Canadian Senior Math Contest*

Mathematics Tutor

December 2020 – January 2021

Volunteering

Toronto, ON

- Tutored students based on the Ontario Education Curriculum on Mathematics and communicated to parents and student on academic goals with weekly progress reports and video calls.
- Students saw **+10%** increase in academic scores after just two tutoring sessions.

EDUCATION

University of Waterloo

Honours Mathematics with Co-op

September 2021 – Present

Waterloo, ON