Hy Lac Nguyen

hylac.vercel.app | linkedin.com/in/hy-lac/ | hl6nguye@uwaterloo.ca | github.com/kingMonkeh

Technical Skills

Languages: TypeScript, JavaScript, C, C++, Python, Java, C#, HTML/CSS, SQL, Bash
Frameworks/Libraries: React, Astro, Node.js, Express.js, Flask, FastAPI, Tailwind CSS, Expo, MongoDB, NumPy, OpenCV
Developer Tools: Git, Docker, Mise-en-place, Vercel, Figma, Linux, Visual Studio, Foxglove

Experience

Software Developer | TypeScript, React, Express, Python, Keras — Feb. 2025 – Present
WAT.ai — *Waterloo, ON*

- Built a dashboard using **TypeScript** and **React**, helping **30+** team members visualize and interpret AI model outputs
- Created an **Express** backend API to process incoming AI model outputs and deliver data reliably to frontend dashboard
- Developed a LSTM Autoencoder model using **Python** with **Keras** to detect anomalies in oil drilling logs

Frontend Developer | React Native, JavaScript, Expo, Python, Flask — Feb. 2025 – Apr. 2025
Popin — *Remote*

- Helped develop a cross-platform app using **React Native** and **Expo** to help users connect with the right people at events
- Implemented profile and event-sharing features, enabling **1000+ users** to connect and interact seamlessly
- Built a real-time notification system with **Python Flask** to alert users of matches and likes, enhancing user engagement

Software Developer | C++, ROS2, Nav2, Linux, Docker — Jan. 2025 – Present
WATonomous — *Waterloo, ON*

- Developed control system for a Mars rover using **Nav2**, optimizing path planning and obstacle avoidance
- Implemented costmap generation for robot, improving collision detection for robot navigation using **ROS2** and **C++**
- Optimized path planning for robot using **A*** algorithm with fine-tuned heuristic, increasing computation speed by **30%**

Coding Club Executive | Python, Pygame, C++ — Sept 2021 – June 2024
Streetsville Secondary School — *Mississauga, ON*

- Hosted live game development sessions, teaching **50+** students the basics of Pygame
- Facilitated Canadian Computing Competition review sessions, solving previous year's problems in **C++**
- Developed Jumper, a simple platformer game inspired by Doodle Jump made using Pygame

Projects

Canadian Computing Competition (CCC) Solutions | *C++*

- Helped **600+** high school students prepare for the CCC by providing full solutions to **100+** CCC problems
- **24 stars** and **1 fork** on Github, averaging **2000+ views** monthly, helping **30+** high schoolers daily

Centsible Cooking | *React, TypeScript, Tailwind CSS, Git*

- Prototyped a **React** app written in **TypeScript** to teach students how to cook meals they like while saving money
- Integrated Gemini REST API to power specialized recipe generation functionality

Goose Clicker | *HTML/CSS, JavaScript*

- Built a web game inspired by Cookie Clicker with 9 items and 25 upgrades using **HTML/CSS** and **JavaScript**
- Designed a responsive user interface to ensure compatibility on various devices and screen sizes

Hangman Helper | *Python, Matplotlib, NumPy, Tkinter*

- Developed a **Python** application to assist users in solving hangman puzzles, achieving a **99%** win rate
- Integrated **Tkinter** and **Matplotlib** to visually represent letter probabilities, improving decision-making accuracy

Awards

Governor General's Bronze Medal - Highest academic standing at Streetsville Secondary School

Education

University of Waterloo — Waterloo, ON
Bachelor's of Computer Science, ***3.91/4.00 GPA*** — *Sept 2024 - Apr 2029*