

Vincent Nguyen

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Education

University of Waterloo

Bachelor of Computer Science, Co-op (Summer/Fall 2025)

Waterloo, ON

Sep 2024 - Present

- **Extracurriculars:** CS Club Photographer, Data Science Club, Rock Climbing, Muay Thai, Cycling Club

Experience

Web Developer

Electrium Mobility

Waterloo, ON

Jan 2025 - Present

- Developing and maintaining the Electrium Shop for the Electrium Mobility design team, streamlining the shopping process of users and designing the user interface using React, Tailwind CSS, and Next.js.
- Integrating Supabase's API to implement product browsing, cart management, connected to a vectorized user authentication database, providing dynamic updates to users and increasing user security by 200%.

Software Developer

University of Waterloo Alternative Fuels Team

Waterloo, ON

Jan 2025 - Present

- Developing a Unity-based Electric Vehicle (EV) driving game with educational content for children in grades 5 - 9 to learn about cars and electric vehicles, using C#, Unity Physics 2D, Sprite Renderer, and Firebase.
- Integrating different Unity libraries and plugins to implement car movement and physics, randomized terrain generation with structures and buildings, with touch controls for mobile users and other features of the game.

Projects

TheRiffler 🎸 | Python, C++, Arduino, PyGuitarPro, PySerial, Onshape, Klipper

Hack Canada 2025 Finalist

Waterloo, ON

Feb 2025

- Built an Arduino Mega-based self-playing guitar using servomotors to simultaneously pluck strings and press on frets, with custom 3D-Printed actuator components designed using Onshape CAD software and Klipper.
- Integrated PyGuitarPro to build a Python .gp5 parser to convert inputted guitar tablatures into .JSON files, structured with fret and string numbers, start time, duration, and velocity assigned to each note.
- Utilized SoundDevice and NumPy audio arrays for testing parsed .JSON musical data and leveraged PySerial to integrate command sequences to trigger real-time callibrated Arduino servomotor movements accordingly.

WatClub 🌐 | Python, Selenium, React, Next.js, Docker, Django

UW Computer Science Club

Waterloo, ON

Oct 2024 - Dec 2024

- Developed a full-stack rating platform for student clubs and organizations at the University of Waterloo, by designing 30+ RESTful API endpoints enabling user authentication, comments, and real-time data updates.
- Built a custom TF-IDF-based search engine by automating CI/CD for the platform's predictive model using Docker, Github Actions and Django, reducing deployment times by 60%, and improving relevancy by 35%.

IntroSpectacle 🎭 | Python, OpenCV, Mediapipe, MongoDB, Cohere, Whisper

Hack the North 2024

Waterloo, ON

Sep 2024

- Developed a real-time facial detection system that helps users remember names, conversations, and details about a person during social interactions by utilizing Cohere AI and Whisper AI for analyzing transcriptions.
- Integrated OpenCV, Mediapipe, and PyAudio for synchronized audio-visual capture with MongoDB for storing facial recognition data, showing real-time past conversation details to facilitate active memory recall.

Skills

Languages: Python, C, C++, C#, Java, HTML5, CSS3, JavaScript, Racket, MATLAB/Simulink

Technologies: React, Next.js, Tailwind CSS, Django, PyAudio, PySerial, OpenCV, Mediapipe, Selenium

Tools: Git, Docker, Bash, Linux, MongoDB, Supabase, Firebase, Whisper, Arduino, Onshape, Klipper