

Lu-Uy Hoang

Computer engineering student at Polytechnique Montréal. Looking for a master's project or an engineering role in robotics or embedded systems, starting summer 2027.

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EDUCATION

Aug 2022 to May 2027	Bachelor of Engineering, Computer Engineering Polytechnique Montréal
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PROJECTS

In progress Team of 4 Polytechnique Montréal	Fall detection on a time of flight sensor <ul style="list-style-type: none">– Detects falls in an industrial workspace with no camera. A time of flight sensor measures depth across the zone, and only the alert leaves the device.– Whole pipeline on an ESP32-S3. Baseline subtraction, blob detection, frame to frame tracking and a state machine confirm a fall before alerting over MQTT. Detection stages are plain C99 and also run on a host against recorded data. C · ESP-IDF · FreeRTOS · ams TMF8829 · MQTT · Python
Fall 2025 Team of 7 Polytechnique Montréal	Multi-robot autonomous exploration <ul style="list-style-type: none">– Two AgileX Limo robots explore an unknown room and build a shared map. Navigation runs entirely onboard and each robot returns within 30 cm of its start.– Wrote the onboard control as ROS2 action servers in C++ covering mission start and stop, return to base, waypoint following, geofence and battery. Mapping on Cartographer, fusing lidar with wheel odometry and IMU, under explore_lite, Nav2 and multirobot_map_merge. C++ · Python · ROS2 · Nav2 · Cartographer · Gazebo · Docker
2025 Personal project	libumi <ul style="list-style-type: none">– Bare metal C library for the ATmega328P. Drivers for an HD44780 LCD in 4 bit mode, USART, the internal EEPROM and matrix keypad scanning, with four worked examples and a Make based build. C · avr-gcc · avr-libc · Make · github.com/umi2002/libumi

EXPERIENCE

Apr to Aug 2026 eNUVIO	Software Development Intern <ul style="list-style-type: none">– Sole developer of the pipeline measuring muscle cell contraction from microscope recordings, tracking tracer particles across frames and turning their motion into measurements.– Built the Qt desktop application researchers use to run it and read the plots, with rendering spread over a process pool sized to available CPU and memory. Set up continuous integration with static analysis, type checking and a test suite. Python · Qt · OpenCV · NumPy
Jan to Aug 2025 Petal Two consecutive terms	Full Stack Developer Intern <ul style="list-style-type: none">– Worked on HUB Next-Gen, a microservice system handling care requests and patient data queries for healthcare scheduling and records software.– Spanned the Angular front end and several of the NestJS services behind it, which communicate over Kafka. Medical data follows FHIR, served from an Aidbox server. Angular · React · TypeScript · NgRx · NestJS · Ruby on Rails · Kafka · FHIR
May to Aug 2024 Ciena	Software API and Process Development Intern <ul style="list-style-type: none">– Built a React proof of concept with token based authentication, showing what a modern front end could do in place of Bonita, the business process platform the internal tool's UI was tied to. React · TypeScript · Tailwind CSS

SKILLS

LANGUAGES	C, C++, Python, TypeScript	EMBEDDED	ESP-IDF, FreeRTOS, AVR bare metal, MQTT
ROBOTICS	ROS2, Nav2, Cartographer, Gazebo	WEB	Angular, React, NestJS, Tailwind CSS
TOOLS	Linux, Git, Docker, Make, CI	SPOKEN	French, English