

Khalil Virji

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EDUCATION

McGill University

Montreal, QC

M.Sc. in Computer Science - under supervision of Dr. Gregory Dudek

09/2022 - Present

- **Research:** Robotics, Reinforcement Learning, Computer Vision, Machine Learning, Planning and Navigation

B.Sc. Major Mathematics and Computer Science

09/2017 - 05/2022

- **Coursework:** Artificial Intelligence, Algorithms, Data Structures, Probability, Statistics, Software Design

EXPERIENCE

McGill Mobile Robotics Lab | Graduate Researcher

Montreal, QC

ROS, Python, C#, C++, MATLAB

09/2022 - Present

- Research on traditional and deep reinforcement learning methods for robust marine robotic control
- Built and designed a system for underwater scuba diver tracking and recovery using low-cost components

Compost Montreal | Software Developer

Montreal, QC

Shopify, Liquid, Javascript, HTML, CSS

05/2022 - Present

- Lead developer responsible for improving and maintaining a Shopify online store
- Optimized multilingual SEO by reworking how the store markets to customers in both English and French

ColorKarma | Software Developer

Westford, MA

Node.js, Express.js, MySQL, Angular

05/2022 - 09/2022

- Improved readability and scalability of a web platform by implementing a route-controller-service architecture
- Enhanced my capacity to articulate technical ideas by managing an overseas front-end development team

CloudOps | Cloud Developer

Montreal, QC

Java, Spring Boot, MySQL, Vue.js, Spock, Jest

05/2021 - 09/2021

- Developed features on a public facing API that integrates with AWS, Azure, and Google Cloud platforms

Sensequake | Web Developer

Montreal, QC

Node.js, Express.js, MongoDB, jQuery, HTML, CSS

5/2020 - 09/2020

- Built an improved web platform to visualize and understand raw sensor data, decreasing latency by over 50%
- Developed commands to interact with sensors and produce real-time vibration plots
- Implemented an automated modal analysis algorithm using machine learning techniques from selected papers

PUBLICATIONS

Lotfi, F., **Virji, K.**, Faraji, F., Berry, L., Holliday, A., Meger, D., Dudek, G., *Uncertainty-aware hybrid paradigm of nonlinear MPC and model-based RL for offroad navigation* | ICRA 2024

Lotfi, F., **Virji, K.**, Dudek, G., *Robust Scuba Diver Tracking and Recovery in Open Water Using YOLOv7, SORT, and Spiral Search* | CRV 2023

PROJECTS

Automated Temperature and Humidity Monitoring

2021

Arduino, Node.js, MongoDB, ESP32, RHT03 sensor

<https://khalilv.github.io/temperature.html>

- Implemented an automated temperature and humidity monitoring system to limit food waste in restaurants

RFID Touchless Checkout System

2020

Java, Arduino, UHF RFID Technology, HC-SR04 ultrasonic sensor

<https://khalilv.github.io/rfid.html>

- Engineered a checkout system that can accurately and simultaneously scan items in grocery carts

Legends of Andor

2020

Java, XML, Spring Boot, Android Studio

<https://khalilv.github.io/legendsofandor.html>

- Developed a multiplayer, turn-based, mobile game for Android devices with an in-game chat room