

Ali Kuwajerwala

M.Sc. Candidate, University of Montréal & Mila

alihusein.kuwajerwala@umontreal.ca | [linkedin.com/in/alihkw](https://www.linkedin.com/in/alihkw) | github.com/alik-git | alihkw.com

Actively seeking internships in machine learning and/or robotics for summer 2022.

EXPERIENCE

Machine Learning/Software Engineer, Liquid Analytics (Startup) Summer 2021
Perform AI Application, Core Algorithms Team (Remote, US)

- Developed highly scalable algorithms in **Julia** to quickly process logistics data for large distribution companies.
- Set up queuing infrastructure using **AMQP** and **RabbitMQ** to handle upto 300,000 requests each second.
- Deployed **AWS** services to efficiently host our software in the cloud, simplifying the CI/CD pipeline.

Robotics Researcher, RVL Lab Sep. 2020 – Apr. 2021
Robot Vision and Learning Lab, University of Toronto Toronto, ON

- Developed novel data augmentation techniques for improved autonomous driving performance in mobile robots.
- Responsibilities: data collection, performing simulation experiments, designing/debugging the ANN architectures.
- Performed real robot experiments with a Husky robot; including sensor setup and **ROS** Node configuration.
- Joint first author for the paper: Sharma D, **Kuwajerwala A**, Shkurti F. *Augmenting Imitation Experience via Equivariant Representations*. arxiv.org/abs/2110.07668 (Paper currently under review for ICRA 2022)

Software Developer, EPSON Jul. 2018 – Apr. 2019
Machine Vision Team, Robotics Department, EPSON Canada Markham, ON



- Developed 3D object detection and pose estimation technologies for commercial bin picking robots.
- Automated evaluation tasks using **Python** and **Bash**, increasing (upto 5x) the amount of tasks run each day.
- Evaluated and debugged algorithms, analyzed research results to diagnose and fix detection/estimation issues.



Teaching Assistant, University of Toronto Sep. 2017 – Dec. 2020
Department of Computer Science, University of Toronto Toronto, ON


- Modified and updated existing assignments for remote delivery (using ssh and VNC) during the pandemic.
- Courses: Mobile Robotics (CSC477), Data Structures and Analysis (CSC263), Theory of Computation (CSC236).
- Prepared and taught lectures, designed & graded assignments, designed marking schemes & graded tests.



PROJECTS



All code available on Github – click the links below!

Model Based RL for Autonomous Driving | *Python, PyTorch, OpenAI Gym*   Dec. 2021

Modelling Uncertainty in Neural Networks | *Python, PyTorch*   Dec. 2021

Backwards Reachability Analysis Tutorial | *Matlab*  Dec. 2020

Feature Visualization for ANNs (Workshop) | *Jupyter Notebook, Python, Tensorflow*   Dec. 2019

NeoCircuits (Android App) | *Java, Android Studio*   Summer 2018

EDUCATION

University of Montréal & Mila (Currently Enrolled)
M.Sc, Computer Science (Robotics and Artificial Intelligence) Sep. 2021 – May 2023

- **Supervisor:** Prof. Liam Paull, director of the Montreal Robotics and Embodied AI Lab.

University of Toronto
H.B.Sc, Computer Science & Math CGPA: 3.63 Sep. 2016 – May 2020

- **Award:** Received the NSERC Undergraduate Student Research Award, a value of \$5600. (2020)
- **Extracurricular:** Co-Founder & Head of Operations of the Robotics Club. (2019-2020)

TECHNICAL SKILLS

Languages: Python, Julia, C/C++, Java, SQL

Developer Tools: Git, ROS, Amazon Web Services, OpenAI Gym, Android Studio, CUDA, ssh, VNC

Libraries: PyTorch, Tensorflow, OpenCV, pandas, NumPy, scipy, Matplotlib, Plotly