# Artur Kuramshin

[http://akuramshin.ca](http://akuramshin.ca)  |  Richmond Hill, Ontario, Canada  |  artur.kurams@gmail.com  |
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**Skills:**        PyTorch, ROS, Numpy, Linux, Isaac Gym, GIT
**Languages**: Python, C, Java, C++, JavaScript, HTML/CSS

## PROJECTS -- [https://github.com/akuramshin](https://github.com/akuramshin)

### Hand Drawing Generation Deep Learning Model
PyTorch implementation of the cDCGAN for Google's "Quick, Draw!" dataset.
- Tested various model architectures for better results.
- Implemented techniques such as label noise and instance noise for a more stable model.
- Visualized results and training data over time to better tune model hyperparameters.

### Detection and Forecasting for Autonomous Vehicles
Models for vehicle detection and motion forecasting on the PandaSet dataset.
- Implemented preprocessing by creating BEV voxelized images from LiDAR data.
- Developed a heat-map object detection model using focal loss and anisotropic Gaussians.
- Built a model that predicts a parametric distribution over future trajectories.

## EXPERIENCE

**Software Co-op ML Team,** Sanctuary AI                                      May 2022 **- Sept 2022**
- Developed end-to-end evaluation pipeline for optimization-based dexterous grasping of objects.
- Set up experiments to investigate the robustness of grasp evaluation using analytic metrics vs. simulation-based metrics.
- Implemented new and existing motion planning routines for the grasp finger closing motion.

**Robotics Research,** Robot Vision and Learning Lab                      May 2021 **- May 2022**
- Field robotics research in autonomous environmental monitoring under Prof. Florian Shkurti.
- Developed the ROS infrastructure for real-time  2D Gaussian Process visualization, Bayesian Optimization, simulation and a web interface.
- Debugged robot sensor serial communication with the central control unit.

**Teaching Assistant,** University of Toronto                                      Jan 2021-**May 2022**
- Planned and hosted tutorial sessions to present students with supplementary material.
- Invigilated and marked tests and major assignments.
- Provided the instructor with feedback on course material and student evaluations.

**Software Developer,** Spring Air Systems                                      May 2021-**Sept 2021**
- Developed new features and resolved existing problems in the web application (.NET framework) with SQL and an AutoCAD automation system.
- Created new and modified existing unit tests for the web application and AutoCAD system.
- Refactored existing code to be more modular and extensible for future use.

## EDUCATION

### University of Toronto - St. George Campus
Bachelor of Science in Computer Science
Expected Graduation: Spring 2023 (CGPA: 3.68)
- Member of the University College Sustainability Committee.

## AWARDS AND INTERESTS

**Interests:**    Robotics, Machine Learning, Martial Arts, Long-distance running, Sustainability
**Awards:**
- Ted Mossman Scholarship                                                                          **2018**
- Dean's List Scholar                                                          **2019**, **2020**, **2021**