ARTUR KURAMSHIN

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Skills: PyTorch, ROS, Numpy, Linux, GIT, Isaac Gym, Isaac Sim
Languages: Python, C, Java, C++, JavaScript, HTML/CSS

PROJECTS

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
Model 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 — Summer 2022, **Summer 2023**

- 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 — Summer 2021, **Spring 2023**

- 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.
- Data visualization and analysis of constrained motion planning performance of a robotic arm.

Teaching Assistant, University of Toronto — Jan 2021- **May 2023**

- 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 — **Summer 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, CGPA: 3.70

- Member of the University College Sustainability Committee.

AWARDS AND INTERESTS

Interests: Robotics, Machine Learning, Martial Arts, Chess, Running, Sustainability
Awards:

- Ted Mossman Scholarship — **2018**
- Dean's List Scholar — **2019**, **2020**, **2021**