
INTERESTS	My goal is to develop safe and intelligent agents for the real world. Key research questions I'm interested in are: 1) what is the right data engine to enable scalable learning? 2) what learning algorithms enable effective scaling with compute? 3) how can we guarantee, test or validate the safety and performance of agents we deploy?
EDUCATION	University of Toronto PhD, <i>Computer Science</i> , GPA 3.96 Advisor: Prof. Raquel Urtasun Sep 2019 – present
	University of Waterloo BAsC, <i>Systems Design Engineering</i> , GPA 3.90 Sep 2014 – Apr 2019
PROFESSIONAL EXPERIENCE	Waabi Innovation Inc <i>Toronto, ON</i> <i>Sr Researcher I</i> Jan 2024 – present Scenario generation for learnable driving policies.
	<i>Researcher II</i> Jun 2022 – Jan 2024 Realistic and robust traffic simulation agents. Coverage-based testing for autonomy. Controllable scene generation.
	<i>Researcher I</i> Mar 2021 – Jun 2022 Scalable closed-loop training framework in simulation. Efficient closed-loop learning algorithms for autonomy.
	Uber ATG <i>Toronto, ON</i> <i>Research Scientist I</i> Aug 2019 – Feb 2021 Safe and robust motion planning.
	<i>Research Intern</i> May 2018 – Sep 2018 Neural architecture search with applications to anytime prediction.
	<i>Research Intern</i> Sep 2017 – Jan 2018 Efficient semantic segmentation for point clouds.
	University of Waterloo <i>Waterloo, ON</i> <i>Part-time Research Assistant</i> May 2017 – Sep 2017 CUDA kernels for efficient image semantic segmentation.
	A9, Amazon.com <i>Palo Alto, CA</i> <i>Software Engineer Intern</i> Jan 2017 – Apr 2017 Learning to rank for visual search.
	Focal Systems <i>Palo Alto, CA</i> <i>Software Engineer Intern</i> May 2016 – Sep 2016 Shipped indoor localization feature powered by deep learning.
	Benbria, Loop <i>New York City, NY</i> <i>Software Engineer Intern</i> Sep 2015 – Jan 2016 Topic extraction and sentiment analysis for customer feedback.
	Ontario Institute for Cancer Research <i>Toronto, ON</i> <i>Web Developer Intern</i> Jan 2015 – Apr 2015 Development for NIH NCI – Genomic Data Commons web portal.
PUBLICATIONS	SceneControl: Diffusion for Controllable Traffic Scene Generation Jack Lu*, Kelvin Wong*, Chris Zhang, Simon Suo, Raquel Urtasun <i>In International Conference on Robotics and Automation (ICRA), 2024</i>

Learning Realistic Traffic Agents in Closed-loop

Chris Zhang, James Tu, Lunjun Zhang, Kelvin Wong, Simon Suo, Raquel Urtasun
In 7th Annual Conference on Robot Learning (CoRL), 2023

Towards Scalable Coverage-Based Testing of Autonomous Vehicles

James Tu, Simon Suo, Chris Zhang, Kelvin Wong, Raquel Urtasun
In 7th Annual Conference on Robot Learning (CoRL), 2023

Rethinking Closed-loop Training for Autonomous Driving

Chris Zhang*, Runsheng Guo*, Wenyuan Zeng*, Yuwen Xiong, Binbin Dai, Rui Hu, Mengye Ren, Raquel Urtasun
In European Conference on Computer Vision (ECCV), 2022

Graph Hypernetworks for Neural Architecture Search

Chris Zhang, Mengye Ren, Raquel Urtasun
In International Conference on Learning Representations (ICLR), 2019

Efficient Convolutions for Real-Time Semantic Segmentation of 3D Point Clouds

Chris Zhang, Wenjie Luo, Raquel Urtasun
In International Conference on 3D Vision (3DV), 2018

AWARDS AND
SCHOLARSHIPS

- Vector Research Grant, University of Toronto 2019 – 2024
- Dean’s Honours List, University of Waterloo 2016 – 2019
- President’s Scholarship, University of Waterloo 2014

SKILLS

Technologies:

PyTorch, Tensorflow, Jax, Numpy, Pandas, OpenCV, Bazel, Docker, Hadoop, Spark, ElasticSearch, AWS, Git, Linux

Languages:

Python, C++, MATLAB, Java, JavaScript, SQL