

Education

- **University of Toronto** Toronto, Ontario
PhD student in Computer Science, Supervisor: Raquel Urtasun, GPA: A+ Sep. 2018 - present
- **Georgia Institute of Technology** Atlanta, Georgia
B.S. in Computer Science, GPA: 4.0 Aug. 2014 - May 2018

Experience

- **Sr. Staff Researcher** Aug. 2024 - Present
Waabi Innovation Toronto, ON
 - Technical Lead Manager for sensor simulation
 - Staff Researcher: Jun. 2022 - Aug. 2024
 - Senior Researcher I: Mar. 2021 - Jun. 2022
- **Research Scientist II** Aug. 2019 - Feb. 2021
Uber Advanced Technologies Group Toronto Toronto, ON
 - Conducted research on simulation for self-driving.
 - Research Scientist I: Aug. 2018 - Aug. 2019
 - Research Intern: May 2018 - Aug. 2018
- **Engineering Intern** May 2017 - Aug. 2017
Amazon Lab126, Alexa Developer Experience Sunnyvale, CA
- **Engineering Intern** May 2016 - Aug. 2016
Proctor & Gamble R&D Engineering, Modeling & Simulation Cincinnati, OH

Publications

- Henry Che, Jingkang Wang, Yun Chen, Ze Yang, **Sivabalan Manivasagam**, and Raquel Urtasun. Diffusion-guided Generalizable Enhancer for Urban Scene Reconstruction. **ICRA** 2026.
- Yun Chen*, Matthew Haines*, Jingkang Wang, Sahil Jain, Krzysztof Baron-Lis, **Sivabalan Manivasagam**, Ze Yang, and Raquel Urtasun. SaLF: Sparse Local Fields for Multi-Sensor Rendering in Real-Time. **ICRA** 2026.
- Jingkang Wang*, Henry Che*, Yun Chen*, Ze Yang, Lily Goli, **Sivabalan Manivasagam**, and Raquel Urtasun. Flux4D: Flow-based unsupervised 4D reconstruction. **NeurIPS** 2025.
- Ze Yang, Jingkang Wang, Haowei Zhang, **Sivabalan Manivasagam**, Yun Chen, and Raquel Urtasun. GenAssets: Generating in-the-wild 3D Assets in Latent Space. **CVPR** 2025.
- Yun Chen, Jingkang Wang, Ze Yang, **Siva Manivasagam**, Raquel Urtasun. G3R: Gradient Guided Generalizable Reconstruction. **ECCV** 2024.
- Ze Yang, George Chen, Haowei Zhang, Kevin Ta, Ioan Andrei Bârsan, Daniel Murphy, **Siva Manivasagam**, and Raquel Urtasun. UniCal: Unified Neural Sensor Calibration. **ECCV** 2024.
- Ava Pun*, Gary Sun*, Jingkang Wang*, Yun Chen, Ze Yang, **Siva Manivasagam**, Wei-Chiu Ma, and Raquel Urtasun. Neural Lighting Simulation for Urban Scenes. **NeurIPS** 2023.
- Jay Sarva*, Jingkang Wang, James Tu, Yuwen Xiong, **Siva Manivasagam**, and Raquel Urtasun. Adv3D: Generating Safety-Critical 3D Objects through Closed-Loop Simulation. **CoRL** 2023.

- Jeffrey Liu, Yun Chen*, Ze Yang*, Jingkang Wang, **Siva Manivasagam**, and Raquel Urtasun. Real-Time Neural Rasterization for Large Scenes. **ICCV** 2023.
- **Siva Manivasagam***, Andrei Barsan*, Jingkang Wang, Ze Yang, and Raquel Urtasun. Towards Zero Domain Gap: A Comprehensive Study of Realistic LiDAR Simulation for Autonomy Testing. **ICCV** 2023.
- Ze Yang*, Yun Chen*, Jingkang Wang*, **Siva Manivasagam***, Wei-Chiu Ma, Anqi Joyce Yang, and Raquel Urtasun. UniSim: A Neural Closed-Loop Sensor Simulator. **CVPR** 2023. (Highlight)
- Ze Yang, **Siva Manivasagam**, Yun Chen, Jingkang Wang, Rui Hu and Raquel Urtasun. NeuSim: Reconstructing Objects in-the-wild for Realistic Sensor Simulation. **ICRA** 2023.
- Jingkang Wang, **Siva Manivasagam**, Yun Chen, Ze Yang, Ioan Andrei Bârsan, Anqi Yang, Wei-Chiu Ma and Raquel Urtasun CADSim: Robust and Scalable in-the-wild 3D Reconstruction for Controllable Simulation. **CoRL** 2022.
- James Tu, Tsun-hsuan Wang, Jingkang Wang, **Siva Manivasagam**, Mengye Ren, Raquel Urtasun. Adversarial Attacks On Multi-Agent Communication. **ICCV**, 2021.
- Yun Chen*, Frieda Rong*, Shivam Duggal*, Shenlong Wang, Xinchun Yan, **Siva Manivasagam**, Shangjie Xue, Ersin Yumer, Raquel Urtasun. “GeoSim: Photorealistic Image Simulation with Geometry-Aware Composition.” **CVPR**, 2021. (Oral, Best Paper Award Candidate)
- Jingkang Wang, Ava Pun, James Tu, **Siva Manivasagam**, Abbas Sadat, Sergio Casas, Mengye Ren, Raquel Urtasun. “AdvSim: Generating Safety-Critical Scenarios for Self-Driving Vehicles.” **CVPR**, 2021.
- Ze Yang, Shenlong Wang, **Siva Manivasagam**, Zeng Huang, Wei-Chiu Ma, Xinchun Yan, Ersin Yumer, Raquel Urtasun. “S3: Neural Shape, Skeleton, and Skinning Fields for 3D Human Modeling.” **CVPR**, 2021.
- Shuhan Tan*, Kelvin Wong*, Shenlong Wang, **Siva Manivasagam**, Mengye Ren, Raquel Urtasun. “SceneGen: Learning to Generate Realistic Traffic Scenes.” **CVPR**, 2021.
- Ze Yang, **Siva Manivasagam**, Ming Liang, Bin Yang, Wei-Chiu Ma, Raquel Urtasun. “Recovering and Simulating Pedestrians in the Wild.” **CoRL**, 2020. (Spotlight)
- Tsun-Hsuan Wang, **Siva Manivasagam**, Ming Liang, Bin Yang, Wenyuan Zeng, Raquel Urtasun. “V2VNet: Vehicle-to-Vehicle Communication for Joint Perception and Prediction.” **ECCV**, 2020. (Oral)
- Jiayuan Gu, Wei-Chiu Ma, **Siva Manivasagam**, Yuwen Xiong, Wenyuan Zeng, Zihao Wang, Hao Su, Raquel Urtasun. “Weakly-supervised 3D Shape Completion in the Wild.” **ECCV**, 2020. (Spotlight)
- Wei-Chiu Ma, Shenlong Wang, Jiayuan Gu, **Siva Manivasagam**, Antonio Torralba, Raquel Urtasun. “Deep Feedback Inverse Problem Solver.” **ECCV**, 2020. (Spotlight)
- **Siva Manivasagam**, Shenlong Wang, Kelvin Wong, Wenyuan Zeng, Mikita Sazanovich, Shuhan Tan, Bin Yang, Wei-Chiu Ma, Raquel Urtasun. “LiDARsim: Realistic LiDAR simulation by leveraging the real world.” **CVPR**, 2020. (Oral)
- James Tu, Mengye Ren, **Siva Manivasagam**, Ming Liang, Bin Yang, Richard Du, Frank Cheng, Raquel Urtasun. “Physically Realizable Adversarial Examples for LiDAR Object Detection.” **CVPR**, 2020.

Awards

- Vector Institute Fellowship 2019 - 2025
- National Science Foundation Graduate Research Fellowship – Selected 2018
- Barry M. Goldwater Scholar – Premier national undergraduate sciences research award 2014
- Georgia Tech Stamps President’s Scholar – 2 percent of Georgia Tech entering class 2014 - 2018