

# Frieda Rong

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**Research Area:** Computer Science → Robotics • Artificial Intelligence → Autonomous Driving

## Education

- 2024– **Ph.D. Computer Science, University of Toronto**  
Advisors: Profs. Igor Gilitschenski & Raquel Urtasun. Committee: Prof. Sanja Fidler.
- 2021–2023 **Affiliated with the Autonomous Agents Lab under Nick Haber at Stanford University.**
- 2015–2020 **B.Math. Mathematics & Computer Science, University of Waterloo**  
Triple majors in Pure Mathematics, Combinatorics & Optimization, Computer Science.

## Employment History

- 2026– **Graduate Student.** Toronto Intelligent Systems Lab, Toronto, ON, Canada.
- 2024–2026 **Researcher II.** Waabi, Behaviors Team, Toronto, ON, Canada. *Implemented scenario generation from natural language for the safety testing and validation of self-driving vehicles.*
- 2018–2020 **Research Scientist / Intern.** Uber ATG Toronto, Research & Development, Simulation Team. *Demonstrated a data-driven pipeline for the photorealistic video simulation of cars inserted into urban driving scenes. Work resulted in award-winning publication (see below).*

## Research Publications

### Conference Proceedings

- 1 **F. Rong**, C. Zhang, K. Wong, et al., “Traffic scenario orchestration from language via constraint satisfaction,” in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, 2026.
- 2 Y. Chen\*, **F. Rong\***, S. Duggal\*, et al., “Geosim: Realistic video simulation via geometry-aware composition for self-driving,” in *Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR)*, **Best paper candidate**, 2021, pp. 7230–7240.

## Patents

- 1 **F. Rong**, Y. Chen, S. Duggal, et al., “Photorealistic image simulation with geometry-aware composition,” U.S. Patent 11 551 429, Jan. 10, 2023. [🔗 URL:](https://patentimages.storage.googleapis.com/b7/44/c7/b8e9be243d9704/US11551429.pdf)  
<https://patentimages.storage.googleapis.com/b7/44/c7/b8e9be243d9704/US11551429.pdf>.

## Awards and Achievements

- 2024 **NSERC CGS-D 3 Year Fellowship**, University of Toronto, \$120,000 CAD overall.
- 2015–2020 **University of Waterloo Faculty of Mathematics National Scholarship**, \$25,000 CAD.