

Qiao Gu

PH.D. STUDENT · UNIVERSITY OF TORONTO

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Education

University of Toronto

PH.D. IN COMPUTER SCIENCE

- GPA: 4.0 / 4.0
- Advisor: [Prof. Florian Shkurti](#)
- Research Interest: 3D Computer Vision, Robot Learning, Generative Models

Toronto ON, Canada

09/2021 - present

Carnegie Mellon University

M.S. IN ROBOTICS

- GPA: 4.24 / 4.33
- Advisor: [Prof. David Held](#) and [Prof. Martial Hebert](#)

Pittsburgh PA, U.S.A.

08/2019 - 08/2021

Hong Kong University of Science and Technology

B.ENG. IN COMPUTER SCIENCE AND ELECTRONIC ENGINEERING

- GPA: 4.15 / 4.30
- Advisors: [Prof. Chi-Keung Tang](#) and [Prof. Yu-Wing Tai](#)

Hong Kong S.A.R.

09/2015 - 06/2019

Professional Experience

June 2025

Research Scientist Intern | Meta Reality Labs, REDMOND WA, U.S.A.

Dec 2025

With [Julian Straub](#)

Video Generation with 3D Memory

Egocentric World Models

Aug 2023

Research Scientist Intern | Meta Reality Labs, REDMOND WA, U.S.A.

Feb 2024

With [Chris Sweeney](#) and [Zhaoyang Lv](#)

Open-world Segmentation

3D Gaussian Splatting

Egocentric Perception

Dec 2018

Research and Development Intern | Tencent Youtu Lab, SHENZHEN GUANGDONG, China

Jan 2019

With [Yu-Wing Tai](#)

Computer Vision

Face Alignment

Publications

* Indicates equal contribution.

SAFE: Scalable Failure Estimation for Vision-Language-Action Models

NeurIPS 2025

[Qiao Gu](#), [Yuanliang Ju](#), [Shengxiang Sun](#), [Igor Gilitschenski](#), [Haruki Nishimura](#), [Masha Itkina](#), [Florian Shkurti](#)

[Paper](#) [Website Code](#)

SICNav-Diffusion: Safe and Interactive Crowd Navigation with Diffusion Trajectory Predictions

RA-L 2025

[Sepehr Samavi](#), [Anthony Lem](#), [Fumiaki Sato](#), [Sirui Chen](#), [Qiao Gu](#), [Keijiro Yano](#), [Angela P Schoellig](#), [Florian Shkurti](#)

[Paper](#)

EgoLifter: Open-world 3D Segmentation for Egocentric Perception

ECCV 2024

[Qiao Gu](#), [Zhaoyang Lv](#), [Duncan Frost](#), [Simon Green](#), [Julian Straub](#), [Chris Sweeney](#)

[Paper](#) [Website Code](#)

- Safe Diffusion Model Predictive Control for Interactive Robotic Crowd Navigation** CoRL 2024 Workshop
 Sepehr Samavi, Anthony Lem, Fumiaki Sato, Sirui Chen, **Qiao Gu**, Keijiro Yano, Angela P Schoellig, Florian Shkurti
[Paper](#)
- Aria Everyday Activities Dataset** arXiv 2024
 Zhaoyang Lv, Nicholas Charron, Pierre Moulon, Alexander Gamino, Cheng Peng, Chris Sweeney, Edward Miller, Huixuan Tang, Jeff Meissner, Jing Dong, Kiran Somasundaram, Luis Pesqueira, Mark Schwesinger, Omkar Parkhi, **Qiao Gu**, Renzo De Nardi, Shangyi Cheng, Steve Saarinen, Vijay Baiyya, Yuyang Zou, Richard Newcombe, Jakob Julian Engel, Xiaqing Pan, Carl Ren
[Paper](#) [Website](#)
- ConceptGraphs: Open-vocabulary 3D Scenographs for Perception and Planning** ICRA 2024
Qiao Gu^{*}, Alihusein Kuwajerwala^{*}, Sacha Morin^{*}, Krishna Murthy Jatavallabhula^{*}, Bipasha Sen, Aditya Agarwal, Corban Rivera, William Paul, Kirsty Ellis, Rama Chellappa, Chuang Gan, Celso Miguel de Melo, Joshua B. Tenenbaum, Antonio Torralba, Florian Shkurti, Liam Paull
[Paper](#) [Website](#) [Code](#)
- ConceptFusion: Open-set Multimodal 3D Mapping** RSS 2023
 Krishna Murthy Jatavallabhula, Alihusein Kuwajerwala^{*}, **Qiao Gu**^{*}, Mohd Omama^{*}, Tao Chen, Shuang Li, Ganesh Iyer, Soroush Saryazdi, Nikhil Keetha, Ayush Tewari, Joshua B. Tenenbaum, Celso Miguel de Melo, Madhava Krishna, Liam Paull, Florian Shkurti, Antonio Torralba
[Paper](#) [Website](#) [Code](#)
- Preserving Linear Separability in Continual Learning by Backward Feature Projection** CVPR 2023
Qiao Gu, Dongsub Shim, Florian Shkurti
[Paper](#) [Code](#)
- OSSID: Online Self-supervised Instance Detection by (and for) Pose Estimation** RA-L & ICRA 2022
Qiao Gu, Brian Okorn, David Held
[Paper](#) [Website](#) [Code](#)
- ZePhyR: Zero-shot Pose Hypothesis Rating** ICRA 2021
 Brian Okorn^{*}, **Qiao Gu**^{*}, Martial Hebert, David Held
[Paper](#) [Website](#) [Code](#)
- Deep Video Matting via Spatio-Temporal Alignment and Aggregation** CVPR 2021
 Yanan Sun, Guanzhi Wang^{*}, **Qiao Gu**^{*}, Chi-Keung Tang, Yu-Wing Tai
[Paper](#)
- iQUANT: Interactive Quantitative Investment Using Sparse Regression Factors** EuroVis 2021
 Xuanwu Yue, **Qiao Gu**, Deyun Wang, Huamin Qu, Yong Wang
[Paper](#)
- LADN: Local Adversarial Disentangling Network for Facial Makeup and De-Makeup** ICCV 2019
Qiao Gu^{*}, Guanzhi Wang^{*}, Mang Tik Chiu, Yu-Wing Tai, Chi-Keung Tang
[Paper](#) [Website](#) [Code](#)
- Characterizing Fluid Response and Sepsis Progression in Emergency Department Patients** EMBC 2019
Qiao Gu, Varesh Prasad, Thomas Heldt
[Paper](#)
- PreserVis, a Visual Analytic System for Traffic and Pollution Patterns** VAST 2017
Qiao Gu, Hang Yin, Lian Chen, Haotian Li, Chengzhong Liu, Xuanwu Yue, Huamin Qu
[Paper](#)

Awards, Scholarships, & Grants

2025	Mary H. Beatty Fellowship	CAD 10,000
2025	University Nomination for Google PhD Fellowship	
2025	Finalist of Qualcomm Innovation Fellowship	
2025	Kwok Sau Po Scholarship	CAD 1,750
2025	The Fahiem Bacchus Memorial Graduate Student Scholarship	CAD 2,000
2024	NeurIPS 2024 Top Reviewer	
2024	Mary H. Beatty Fellowship	CAD 10,000
2024	Ray Reiter Graduate Award	CAD 1,000
2023	Acres Productive Technologies Inc./Joseph Yonan Memorial Fellowship	CAD 2,000
2022	Ontario Graduate Scholarships	CAD 15,000
2019	HKUST Academic Achievement Medal (Top 1%)	
2017-2019	HKSAR Government Scholarships	HKD 160,000
2015-2019	Dean's List	
2018	Mr. Armin and Mrs. Lillian Kitchell Undergraduate Research Award	
2017	High Fashion Charitable Foundation Exchange Scholarships	HKD 50,000
2017	HKSAR Government Scholarship Fund - Reaching Out Award	HKD 10,000
2017	HKSAR Government Scholarship Fund - Talent Development Scholarship	HKD 10,000
2016	Simatelex Charitable Foundation Scholarship	HKD 20,000
2016	University's Scholarship Scheme for Continuing Undergraduate Students	HKD 20,000
2015	University Admission Scholarship	HKD 40,000

Invited Talks

03/2024. *ConceptGraphs: Open-Vocabulary 3D Scene Graphs for Perception and Planning*. Boston Dynamic AI institute

02/2024. *Open-World 3d Segmentation with Project Aria*. Meta Reality Labs

10/2023. *ConceptGraphs: Open-Vocabulary 3D Scene Graphs for Perception and Planning*. Meta Reality Labs

Teaching Experience

Fall 2022	CSC384: Intro to Artificial Intelligence	Teaching Assistant
Winter 2022	CSC384: Intro to Artificial Intelligence	Teaching Assistant
Fall 2021	CSC110: Foundations of Computer Science I	Teaching Assistant

Mentorship

2024-present	James Ross	Master student, University of Toronto
2024-present	Yuanliang Ju	PhD student, University of Toronto
2024-present	Owen Sun	Undergraduate student, University of Toronto
2022-2025	Anthony Lem	Master student, University of Toronto
2023-2024	Sirui Chen	Undergraduate student, University of Toronto
2023	Edward Li	Undergraduate student, University of Toronto
2023	Spencer Li	Undergraduate student, University of Toronto

Outreach & Professional Development

SERVICE AND OUTREACH

2024-2025 **UofT RI Reading Group** Organizer
2022 **Toronto AI in Robotics Seminar** Organizer

REVIEWER SERVICE

TRO, TPAMI, IJRR, TMLR, RA-L, NeurIPS, CVPR, ICLR, ICCV, ICRA, IROS, ECCV, ICML, WACV

PROFESSIONAL MEMBERSHIPS

Student member, IEEE