

# YIBO LIU

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Personal Webpage | Google Scholar

<https://github.com/York-SDCNLab> | LinkedIn

## RESEARCH EXPERIENCE

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### Epson Canada

*Research Scientist*

Apr. 2025 - Present

*Toronto, Canada*

- Focused on applied research in vision-tactile policy learning for contact-rich assembly.

### Huawei Noah's Ark Lab

*Associate Researcher (Part-time Internship)*

Jun. 2022 - Feb. 2025

*Toronto, Canada*

- Focused on in-the-wild object reconstruction and image/text-to-3D content generation under the background of simulation in the autonomous driving industry.

- Contribution:

HIPPo: Harnessing Image-to-3D Priors for Model-free Zero-shot 6D Pose Estimation (**first author**, **RA-L2025&ICRA2026**), [DOI](#).

VQA-Diff: Exploiting VQA and Diffusion for Zero-Shot Image-to-3D Vehicle Asset Generation in Autonomous Driving (**first author**, **ECCV2024**), [DOI](#).

MV-DeepSDF: Implicit Modeling with Multi-Sweep Point Clouds for 3D Vehicle Reconstruction in Autonomous Driving (**first author**, **ICCV2023**), [DOI](#).

Top-3 winner of OmniObject3D challenge (Co-first author, [ArXiv](#), **NeurIPS 2024 Workshop on Symmetry and Geometry in Neural Representations**).

### York University

*Teaching Assistant. & Graduate Research Assistant.*

Jan. 2020 – Jan. 2025

*Toronto, Canada*

- Focused on robotic vision.

- Contribution:

Intensity Image-based LiDAR Fiducial Marker System (first author, **RA-L2022**, [DOI](#), Github **60** stars) .

Application of Ghost-DeblurGAN to Fiducial Marker Detection (first author, **IROS2022**, [DOI](#), Github **42** stars).

Mapping and Localization using LiDAR Fiducial Markers (first author, accepted to **TIM2025**, [DOI](#), Github **120** stars).

## EDUCATION

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### York University, Lassonde School of Engineering

*Ph.D. Supervisor: Prof. Jinjun Shan.*

Toronto, Canada

*Jan 2020-Jan 2025*

- Scholarship:

Academic Excellence Fund (maximum amount, 2000\$, 2022&2023).

York Graduate Scholarship (2020).

### BeiHang University, School of Aeronautic Science and Engineering

*Master*

Beijing, China

*Sep 2017-Jan 2020*

- Scholarship:

First-class Academic Merit (Top 3%).

### BeiHang University, School of Aeronautic Science and Engineering

*Bachelor*

Beijing, China

*Sep 2013-June 2017*

- Scholarship:

Outstanding Graduate (Top 5%);

## Publication

Please refer to [Google Scholar](#) for the full list.

- [1]**Liu Y\***, Jiang Z\*, Xu B, Wu G, Ren Y, Cao T, Liu B, Yang R, Rasouli A, and Shan J, "HIPPo: Harnessing Image-to-3D Priors for Model-free Zero-shot 6D Pose Estimation," in IEEE Robotics and Automation Letters (**RA-L**), vol. 10, no. 8, 2025, pp. 8284-8291. doi: 10.1109/LRA.2025.3585384
- [2]**Liu Y\***, Yang Z\*, Wu G, Ren Y, Lin K, Liu B, Liu Y, Shan J. "VQA-Diff: Exploiting VQA and Diffusion for Zero-Shot Image-to-3D Vehicle Asset Generation in Autonomous Driving", in Proc. European Conference on Computer Vision (**ECCV**), 2024, pp. 323-340.
- [3]**Liu Y**, Zhu K, Wu G, Ren Y, Liu B, Liu Y, Shan J. "MV-DeepSDF: Implicit Modeling with Multi-Sweep Point Clouds for 3D Vehicle Reconstruction in Autonomous Driving", in Proc. IEEE/CVF International Conference on Computer Vision (**ICCV**), 2023, pp. 8306-8316.
- [4]**Liu Y**, Shan J, Haridevan A, Zhang S. "L-PR: Exploiting LiDAR Fiducial Marker for Unordered Low Overlap Multiview Point Cloud Registration", IEEE Transactions on Instrumentation and Measurement (**TIM**), 2025, doi: 10.1109/TIM.2025.3544745
- [5]Yang Z\*, **Liu Y\***, Wu G, Cao T, Ren Y, Liu Y, Liu B. "Learning Effective NeRFs and SDFs Representations with 3D Generative Adversarial Networks for 3D Object Generation". **NeurIPS 2024** Workshop on Symmetry and Geometry in Neural Representations. Top-3 winner of **ICCV 2023** OmniObject3D Challenge.
- [6]**Liu Y**, Schofield H, Shan J. "Intensity Image-Based LiDAR Fiducial Marker System", in IEEE Robotics and Automation Letters (**RA-L**), vol. 7, no. 3, pp. 6542-6549, July 2022, doi: 10.1109/LRA.2022.3174971.
- [7]**Liu Y**, Haridevan A, Shan J. "Application of Ghost-DeblurGAN to Fiducial Marker Detection", in Proc. IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2022, pp. 6827-6832, doi: 10.1109/IROS47612.2022.9981701.
- [8]**Liu Y**, Schofield H, Shan J. "Navigation of a Self-Driving Vehicle Using One Fiducial Marker", in Proc. IEEE International Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI), 2021, pp. 1-6, doi: 10.1109/MFI52462.2021.9591194.
- [9]Zhang S, Shan J and **Liu Y** "Approximate Inference Particle Filtering for Mobile Robot SLAM," in IEEE Transactions on Automation Science and Engineering, doi: 10.1109/**TASE**.2024.3475735
- [10]Zhang S, Shan J and **Liu Y**. "Variational Bayesian Estimator for Mobile Robot Localization With Unknown Noise Covariance," in IEEE/ASME Transactions on Mechatronics, vol. 27, no. 4, pp. 2185-2193, Aug. 2022, doi: 10.1109/**T-MECH**.2022.3161591.

## Award

- [1]**Top-3 winner** of OmniObject3D Challenge at **ICCV2023** (3D Object Generation Task).
- [2]The first prize, 15th 'Challenge Cup' National Science and Technology College of extra-curricular academic competition works.

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## TECHNICAL REVIEWER

Conferences: ICLR, NeurIPS, AISTATS, ICRA, IROS, AIM, ICPR

Journals: RA-L, RA-M, RAS, TIE, TIM, TII