YIBO LIU

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Personal Webpage | Google Scholar
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RESEARCH EXPERIENCE

Epson America   Apr. 2025 - Present
Research Scientist   *Toronto, Canada*

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

Huawei Noah's Ark Lab   Jun. 2022 - Feb. 2025
Associate Researcher (Part-time Internship)   *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   Jan. 2020 – Jan. 2025
Teaching Assistant. & Graduate Research Assistant.   *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

York University, Lassonde School of Engineering   Toronto, Canada
Ph.D. Supervisor:Prof. Jinjun Shan.   *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   Beijing, China
Master   *Sep 2017-Jan 2020*

- Scholarship:
  First-class Academic Merit (Top 3%).

BeiHang University, School of Aeronautic Science and Engineering   Beijing, China
Bachelor   *Sep 2013-June 2017*

- Scholarship:
  Outstanding Graduate (Top 5%);
  Outstanding Student Cadres

Selected Publication & Award List

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.

Technical Reviewer

Conferences: ICLR, NeurIPS, AISTATS, ICRA, IROS, AIM, ICPR
Journals: RA-L, RA-M, RAS, TIE, TIM, TII