Yiye Chen

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Education

School of Engineering, Georgia Institute of Technology Atlanta, GA, United States

- ***Ph.D.*** in Electrical and Computer Engineering *01/2021-12/2025(expected)*
- **Research Interest:** Computer Vision, Robotic Manipulation, Foundation Models for Planning and Reasoning

School of Engineering, Georgia Institute of Technology Atlanta, GA, United States

- ***M.S.*** in Electrical and Computer Engineering *08/2019-12/2020*

Image Processing Center, School of Astronautics, Beihang University (BUAA) Beijing, China

- ***B. Eng.*** in Detection Guidance and Control Technology (Astronautics Engineering) *09/2015-06/2019*
- **Technical Area:** Image Processing

Industry Experience

Microsoft Research, Mixed Reality Team Redmond, WA, United States

Research Scientist Internship, Manager: *Benjamin Lundell,* Co-host: *Harpreet Sawhney* *05/2024-08/2024*

- **Topic:** A scalable framework for improving the spatial reasoning and planning ability of Large Language Models (LLMs) on the scene graph input.
- **Publication: [1].**

Amazon Robotics, Stow Team Seattle, WA, United States

Applied Scientist Internship, Manager: *Sisir Karumanchi*, Mentor: *Shuai Han* *05/2023-08/2023*

- **Topic:** Deep vision model uncertainty estimation for quantifying the reliability of the derived robotic atomic actions.

Publications [Google Scholar]

[1] RwR: A Reason-while-Retrieve Framework for Reasoning on Scene Graphs with Large Language Models
Yiye Chen, Harpreet Sawhney, Nicholas Gyde, Yanan Jian, Jack Saunders, Patricio A. Vela, Benjamin Lundell
(Under Review).

[2] GASP: Gaussian Avatars with Synthetic Priors
Jack Saunders, Charlie Hewitt, Yanan Jian, Marek Kowalski, Tadas Baltrusaitis, **Yiye Chen**, Darren Cosker, Virginia Estellers, Nicholas Gydé, Vinay Namboodiri, Benjamin Lundell
(Under Review).

[3] WDiscOOD: Out-of-Distribution Detection via Whitened Linear Discriminant Analysis
Yiye Chen, Yunzhi Lin, Ruinian Xu, Patricio A. Vela
IEEE International Conference on Computer Vision (ICCV), 2023.

[4] Keypoint-GraspNet: Keypoint-based 6-DoF Grasp Generation from the Monocular RGB-D input
Yiye Chen, Yunzhi Lin, Patricio A. Vela
IEEE International Conference on Robotics and Automation (ICRA), 2023

[5] KGNv2: Separating Scale and Pose Prediction for Keypoint-based Grasp Synthesis on RGB-D input
Yiye Chen, Ruinian Xu, Yunzhi Lin, Hongyi Chen, Patricio A. Vela
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023.

[6] Planning with Language Models through Iterative Energy Minimization
Hongyi Chen*, Yilun Du*, **Yiye Chen***, Patricio A. Vela, Joshua B. Tenenbaum
The International Conference on Learning Representations (ICLR), 2023 (***equal contribution**)

[7] A Joint Network for Grasp Detection Conditioned On Natural Language Commands
Yiye Chen, Ruinian Xu, Yunzhi Lin, Patricio A. Vela
IEEE International *Conference on Robotics and Automation (ICRA), 2021*

[8] Simultaneous Multi-Level Descriptor Learning and Semantic Segmentation for Domain-Specific Relocalization
Xiaolong Wu*, Yiye Chen*, Cèdric Pradalier, Patricio A. Vela
IEEE International *Conference on Robotics and Automation (ICRA), 2021* (***equal contribution**)

Academic Service

Reviewer

- **Conference**: IROS'23-24, ICRA'24, CVPR'24, ICLR'25
- **Journal**: The International Journal of Robotics Research (IJRR), IEEE Robotics and Automation Letters (RA-L), IEEE Transactions on Industrial Electronics (TIE)

Honors & Awards

- Lee Kum Kee Aerospace Scholarship (Top 5/206 ≈ 2.45%) 10/2016
- 3x Beihang Scholarship 2015-2018
- National Outstanding Graduates 06/2019
- The 2nd Prize of the 8th National Mathematics Competition (Top 7.5%) 10/2016

Professional Skills

Programming Skills: Python, Matlab, C++, Latex
Frameworks & Tools: Pytorch, TensorFlow, OpenCV, ROS, Git