

# Haonan Chang

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## SUMMARY

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Interested in Generative Model in robotics, scene understanding, LLM/VLM-driven robotics system. Fluent coder in C++, CUDA and Python.

## WORK EXPERIENCE

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**Research Scientist (Intern) at ByteDance** June 2024 - Oct 2024

Research on embody AI with video generation model.

**Research Scientist (Intern) at MERL** June 2023 - Dec 2023

Research on contact-rich manipulation for precise connector insertion task.

**Research Scientist (Intern) at Amazon Lab126** June 2022 - Sept 2022

Algorithm developing for Astros robots, area including Simultaneous Localization And Mapping and 3D vision.

## EDUCATION

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2020 - present PhD (Robotics) at **Rutgers University** (GPA: 4.0/4.0)

2018 - 2020 Master Degree (Robotics and ME) at **University of Michigan** (GPA: 4.0/4.0)

2014 - 2018 Bachelor's Degree (ME and Math) at **Tsinghua University** (GPA: 3.7/4.0)

## SELECTED PUBLICATIONS

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Huang, Siyuan\*, Haonan Chang\*, Yimeng Zhu, Hao Dong, Peng Gao, Abdeslam Boularias, and Hongsheng Li (2024). "A3VLM: Actionable Articulation-Aware Vision Language Model". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (CoRL 2024)*.

Zhang, Xinyu, Yuhan Liu, Haonan Chang, and Abdeslam Boularias (2024). "Scaling Manipulation Learning with Visual Kinematic Chain Prediction". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (CoRL 2024)*.

Chang, Haonan, Kowndinya Boyalakuntla, Yuhan Liu, Xingyu Zhang, Liam Schramm, and Abdeslam Boularias (2024). "DAP: Diffusion-based Affordance Prediction for Multi-modality Storage". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*.

Chang, Haonan, Abdeslam Boularias, and Siddarth Jain (2024). "Insert-One: One-Shot Robust Visual-Force Servoing for Novel Object Insertion with 6-DoF Tracking". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*.

Chang, Haonan, Kai Gao, Kowndinya Boyalakuntla, Alex Lee, Baichuan Huang, Jinjin Yu, and Abdeslam Boularias (2024). "LGMCTS: Language-Guided Monte-Carlo Tree Search". In: *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*.

Chang, Haonan and et al (2023). "Context-Aware Entity Grounding with Open-Vocabulary 3D Scene Graphs". In: *2023 Conference on Robot Learning (CoRL)*.

Lu, Shiyang, Chang Haonan, Eric Jing, and Abdeslam Boularias (2023). "OVIR-3D: Open-Vocabulary 3D Instance Retrieval Without Training on 3D Data". In: *2023 Conference on Robot Learning (CoRL)*.

- Chang, Haonan, Dhruv Metha Ramesh, Shijie Geng, Yuqiu Gan, and Abdeslam Boularias (2023). “Mono-STAR: Mono-camera Scene-level Tracking and Reconstruction”. In: *2023 IEEE International Conference on Robotics and Automation (ICRA)*.
- Chang, Haonan and Abdeslam Boularias (2022). “Scene-level Tracking and Reconstruction without Object Priors”. In: *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. DOI: [10.48550/arXiv.2210.03815](https://doi.org/10.48550/arXiv.2210.03815).
- Sui, Zhiqiang, Haonan Chang, Ning Xu, and Odest Chadwicke Jenkins (2020). “GeoFusion: Geometric Consistency Informed Scene Estimation in Dense Clutter”. In: *IEEE Robotics and Automation Letters* 5.4, pp. 5913–5920. DOI: [10.1109/LRA.2020.3010443](https://doi.org/10.1109/LRA.2020.3010443).
- Xu, Zhuo, Haonan Chang, Chen Tang, Changliu Liu, and Masayoshi Tomizuka (2019). “Toward Modularization of Neural Network Autonomous Driving Policy Using Parallel Attribute Networks”. In: *2019 IEEE Intelligent Vehicles Symposium (IV)*, pp. 1400–1407. DOI: [10.1109/IVS.2019.8813861](https://doi.org/10.1109/IVS.2019.8813861).
- Hu, Chuxiong, Tiansheng Ou, Haonan Chang, Yu Zhu, and Limin Zhu (2020). “Deep GRU Neural Network Prediction and Feedforward Compensation for Precision Multiaxis Motion Control Systems”. In: *IEEE/ASME Transactions on Mechatronics* 25.3, pp. 1377–1388. DOI: [10.1109/TMECH.2020.2975343](https://doi.org/10.1109/TMECH.2020.2975343).
- Zhou, Zheming, Tianyang Pan, Shiyu Wu, Haonan Chang, and Odest Chadwicke Jenkins (2019). “Glass-Loc: Plenoptic Grasp Pose Detection in Transparent Clutter”. In: *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 4776–4783. DOI: [10.1109/IROS40897.2019.8967685](https://doi.org/10.1109/IROS40897.2019.8967685).

## DEMOS

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**Context-Aware Entity Grounding with Open-Vocabulary 3D Scene Graphs** [Check Demo](#)

Object grounding using natural language with a complex environment.

**Easy3DViewer**

[Check Demo](#)

A light-weighted web-based tool for visualizing dynamic reconstruction. Implemented based on Three.js.

## SKILLS

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Code Language C++, CUDA, Python, JavaScript.

## SERVICE

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Paper Reviewer ICRA 2021, 2023 ISRR 2022, IEEE Transactions on Robotics, SIGGRAPH-Asia 2023, RSS 2023, ICRA 2024, CoRL 2024, ICRA2025