

Yilun (Evelyn) Hao

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EDUCATION

Massachusetts Institute of Technology (MIT) , Cambridge, MA	Sep 2023 - Present
Ph.D. in Aeronautics and Astronautics (GPA: 5.0/5.0)	
<u>Research keywords:</u> Foundation Models, Robotics, Task and Motion Planning, Formal Methods, Neuro-Symbolic Approach, Human Robot Interaction	
Stanford University , Stanford, CA	Sep 2021 - Jun 2023
Master of Science (GPA: 3.96/4.0) Major in Computer Science	
<u>Honors:</u> Distinction in Research	
University of California, San Diego , La Jolla, CA	Aug 2017 - Jun 2021
Bachelor of Science (GPA: 3.9/4.0) Major in Computer Science Minor in Mathematics	
<u>Honors:</u> Provost Honors, Magna Cum Laude	

PUBLICATIONS (* denotes equal contribution)

- **Yilun Hao**, Yongchao Chen, Chuchu Fan, Yang Zhang, “[Simulation to Rules: A Dual-VLM Framework for Formal Visual Planning](#)”, *Under review*, 2025
- Yongchao Chen, Yueying Liu, Junwei Zhou, **Yilun Hao**, Jingquan Wang, Yang Zhang, Na Li, Chuchu Fan, “[R1-Code-Interpreter: Training LLMs to Reason with Code via Supervised and Reinforcement Learning](#)”, *Under review*, 2025
- Yongchao Chen, **Yilun Hao**, Yang Zhang, Chuchu Fan, “[Code-as-Symbolic-Planner: Foundation Model-Based Robot Planning via Symbolic Code Generation](#)”, *2025 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2025
- Yongchao Chen, **Yilun Hao**, Yueying Liu, Yang Zhang, Chuchu Fan, “[CodeSteer: Symbolic-Augmented Language Models via Code/Text Guidance](#)”, *Forty-Second International Conference on Machine Learning (ICML)*, 2025
- **Yilun Hao**, Yang Zhang, Chuchu Fan, “[Planning Anything with Rigor: General-Purpose Zero-Shot Planning with LLM-based Formalized Programming](#)”, *The Thirteenth International Conference on Learning Representations (ICLR)*, 2025
- **Yilun Hao**, Yongchao Chen, Yang Zhang, Chuchu Fan, “[Large Language Models Can Solve Real-World Planning Rigorously with Formal Verification Tools](#)”, *2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL Main, Oral, Top 8%)*, 2025
- Ruiqi Zhang, Brandon Motes, Shaun Tan, Yongli Lu, Meng-Chen Shih, **Yilun Hao**, Karen Yang, Shreyas Srinivasan, Moungi Bawendi, Vladimir Bulovic, “Predicting Organic-Inorganic Halide Perovskite Photovoltaic Performance from Optical Properties of Constituent Films through Machine Learning”, *ACS Energy Letters 10.4 (2025): 1714-1724*.
- Yongchao Chen, Jacob Arkin, **Yilun Hao**, Yang Zhang, Nicholas Roy, Chuchu Fan, “[PRompt Optimization in Multi-Step Tasks \(PROMST\): Integrating Human Feedback and Preference Alignment](#)”, *Empirical Methods on Natural Language Processing (EMNLP Main, Oral, Top 3%)*, 2024
- Li-Heng Lin, Yuchen Cui, **Yilun Hao**, Fei Xia, Dorsa Sadigh, “[Gesture-Informed Robot Assistance via Foundation Model](#)”, *Proceedings of the 7th Conference on Robot Learning (CoRL)*, 2023
- Ruohan Zhang, Sharon Lee, Minjune Hwang, Ayano Hiranaka, Chen Wang, Wensi Ai, Jin Jie Ryan Tan, Shreya Gupta, **Yilun Hao**, Gabrael Levine, Ruohan Gao, Anthony Norcia, Li Fei-Fei, Jiajun Wu, “[NOIR: Neural Signal](#)

[Operated Intelligent Robot for Everyday Activities](#)”, *Proceedings of the 7th Conference on Robot Learning (CoRL), 2023*

- Yilun Hao*, Ruinan Wang*, Zhangjie Cao, Zihan Wang, Yuchen Cui, Dorsa Sadigh, “[Masked Imitation Learning: Discovering Environment-Invariant Modalities in Multimodal Demonstrations](#)”, *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023*
- Ruohan Zhang*, Dhruva Bansal*, Yilun Hao*, Ayano Hiranaka, Jialu Gao, Chen Wang, Roberto Martín-Martín, Li Fei-Fei, Jiajun Wu, “[A Dual Representation Framework for Robot Learning with Human Guidance](#)”, *Proceedings of the 6th Conference on Robot Learning (CoRL), 2022*
(**Spotlight talk at CoRL 2022 Workshop on Aligning Robot Representations with Human**)
- Zihan Wang*, Zhangjie Cao*, Yilun Hao, Dorsa Sadigh, “[Weakly Supervised Correspondence Learning](#)”, *IEEE Conference on Robotics and Automation (ICRA), 2022*
- Zhangjie Cao, Yilun Hao, Mengxi Li, Dorsa Sadigh “[Learning Feasibility to Imitate Demonstrators with Different Dynamics](#)”, *Proceedings of the 5th Conference on Robot Learning (CoRL), 2021*
- Justin Morris, Yilun Hao, Saransh Gupta, Behnam Khaleghi, Baris Aksanli, Tajana Rosing “Stochastic-HD: Leveraging Stochastic Computing on the Hyper-Dimensional Computing Pipeline”, *Frontiers in Neuroscience, 2022*
- Yilun Hao, Saransh Gupta, Justin Morris, Behnam Khaleghi, Baris Aksanli, and Tajana Rosing “[Stochastic-HD: Leveraging Stochastic Computing on Hyper-Dimensional Computing](#)”, *IEEE International Conference on Computer Design (ICCD), 2021*
- Justin Morris, Yilun Hao, Saransh Gupta, Ranganathan Ramkumar, Jeffrey Yu, Mohsen Imani, Baris Aksanli, Tajana Rosing, “[Multi-label HD Classification in 3D Flash](#)”, *IEEE/IFIP International Conference on VLSI and System-on-Chip (VLSI-SoC), 2020*. (Invited Paper)
- Justin Morris, Roshan Fernando, Yilun Hao, Mohsen Imani, Baris Aksanli, Tajana Rosing, “[Locality-based Encoder and Model Quantization for Efficient Hyper-Dimensional Computing](#)”, *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2020*

WORKING EXPERIENCE

MIT-IBM Watson Lab Research Intern Advisor: Dr. Yang Zhang	Jun 2025 – Aug 2025
• Worked on fine-tuning vision language model to guide vision-enabled robot planning with formal tools	

ACADEMIC EXPERIENCE

Reliable Autonomous Systems Lab (REALM) Research Assistant supervised by Prof. Chuchu Fan	Sep 2023 - Present Massachusetts Institute of Technology
• Tackling planning with large language models and vision language models under complex real-world settings	

Stanford Vision and Learning Lab (SVL) Research Assistant supervised by Prof. Fei-Fei Li and Prof. Jiajun Wu	Mar 2022 - Jun 2023 Stanford University
• Designed and implemented human-in-the-loop RL and IRL algorithms that incorporate scene graph with human evaluative feedbacks and preferences, which significantly improve both task performance and learning speed	

Stanford Intelligent and Interactive Autonomous Systems Group (ILIAD) Research Assistant supervised by Prof. Dorsa Sadigh	Apr 2021 - Jun 2023 Stanford University
• Tackled robotics problems of 1) state over-specification of learning from multi-modality data, 2) learning from suboptimal demonstrations especially infeasible dynamics, and 3) correspondence learning	

System Energy Efficiency Lab (SEE Lab)
Research Assistant supervised by Prof. Tajana Rosing

Apr 2019 - Jun 2021
University of California, San Diego

- Designed and implemented machine learning algorithms using Hyperdimensional (HD) Computing to raise both the accuracy and efficiency of single-label & multi-label & image classification problem

ACADEMIC SERVICE

Conference Paper Reviewer: Conference on Robot Learning (CoRL) 2022, 2023, 2024; Conference on Learning Representations (ICLR) 2025; 7th Annual Learning for Dynamics & Control Conference (L4DC) 2025; 2nd International Conference on Neuro-symbolic Systems (NeuS) 2025

Journal Paper Reviewer: IEEE Transactions on Robotics (T-RO)

Conference Workshop Reviewer: ICLR Workshop on Reasoning and Planning for Large Language Models 2025, ICRA 2025 Workshop on Foundation Models and Neuro-Symbolic AI for Robotics 2025, ACL 2025 Student Research Workshop (SRW), RSS 2025 Workshop on Robot Planning in the Era of Foundation Models

Invited Talks

- 2025/09/11 – MIT Horizon Live Event Talk

TEACHING EXPERIENCE

Stanford University | Course Assistant in Computer Science Dept. Jan 2022 - Apr 2022, Jan 2023 - Apr 2023

- Worked as course assistant for ‘Principles of Robot Autonomy II’

University of California, San Diego | Tutor in Computer Science Dept. Jan 2021 - Jun 2021

- Worked as tutor for ‘Components and Design Techniques for Digital Systems’ and ‘Introduction to Machine Learning’

University of California, San Diego | Grader in Mathematics Dept. Sep 2018 - Jun 2019

- Worked as grader of “Calculus&Analytic Geometry for Sci&Engnr” and “Intro to Differential Equations”