

# Yixuan Huang

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## Research Experience

<b>Postdoctoral Research Associate</b> with Prof. Tom Silver <i>Princeton University</i>	<i>Princeton, NJ</i> Aug 2025 – Present
<b>Visiting Student Researcher</b> with Prof. Jeannette Bohg <i>Stanford University</i>	<i>Stanford, CA</i> Jan 2024 – Aug 2024
<b>Graduate Research Assistant</b> with Prof. Tucker Hermans <i>University of Utah</i>	<i>Salt Lake City, UT</i> May 2021 – Aug 2025
<b>Undergraduate Research Assistant</b> with Prof. Sicun Gao <i>University of California, San Diego</i>	<i>La Jolla, CA</i> Aug 2019 - Aug 2020

## Education

<b>University of Utah, Salt Lake City, UT</b> <i>Ph.D. in Computing: Robotics</i>	<i>Aug 2020 - Aug 2025</i>
◦ GPA: 3.98/4.0	
◦ Advisor: Prof. Tucker Hermans	
<b>Northeastern University, Shenyang, Liaoning (China)</b> <i>B.E. in Computer Science and Technology (<u>top</u> student in the department)</i>	<i>Sep 2016 - Jun 2020</i>
◦ GPA: 93.2/100, Rank: 1/278	
<b>University of California, San Diego, La Jolla, CA</b> <i>Exchange student</i>	<i>Sep 2018 - Jun 2019</i>
◦ GPA: 3.91/4	

## Preprints

**Yixuan Huang**, Bowen Li, Vaibhav Saxena, Utkarsh Aashu Mishra, Yichao Liang, Liang Ji, Lihan Zha, Jimmy Wu, Nishanth Kumar, Sebastian Scherer, Danfei Xu, Tom Silver. "KinDER: A Physical Reasoning Benchmark for Robot Learning and Planning," 2026, In submission.

Shuangyu Xie, Kaiyuan Chen, Ziyang Chen, Simeon Adebola, **Yixuan Huang**, Zehan Ma, Tianshuang Qiu, Wentao Yuan, Dhruv Shah, Pannag R Sanketi, Ken Goldberg. "RoboVista: Evaluating Vision Language Models for Diverse Robot Applications," 2026, In submission.

Lihan Zha, Asher James Hancock, Mingtong Zhang, Tenny Yin, **Yixuan Huang**, Dhruv Shah, Allen Z. Ren, Anirudha Majumdar. "LAP: Language-Action Pre-training Enables Zero-Shot Cross-Embodiment Transfer," 2026, In submission.

## Journal Publications

**Yixuan Huang**, Nichols Crawford Taylor, Adam Comkey, Weiyu Liu, Tucker Hermans. "Latent Space Planning for Multi-Object Manipulation with Environment-Aware Relational Classifiers," IEEE Transactions on Robotics (T-RO) 2024. [Project Website] [Paper]

## Conference Publications

Mingen Li, Houjian Yu, **Yixuan Huang**, Youngjin Hong, Changhyun Choi. "Hierarchical DLO Routing with Reinforcement Learning and Multimodal In-Context VLMs," IEEE International Conference on Robotics and Automation (ICRA) 2026. [Project Website] [Paper]

**Yixuan Huang**, Novella Alvina, Mohanraj Devendran Shanthi, Tucker Hermans. "Fail2Progress: Learning from Real-World Robot Failures with Stein Variational Inference," Conference on Robot Learning (CoRL), 2025 [Project Website] [Paper]

**Yixuan Huang**, Christopher Agia, Jimmy Wu, Tucker Hermans, Jeannette Bohg. "Points2Plans: From Point Clouds to Long-Horizon Plans with Composable Relational Dynamics," IEEE International Conference on Robotics and Automation (ICRA) 2025. [Project Website] [Paper]

**Yixuan Huang**, Jialin Yuan, Chanho Kim, Pupul Pradhan, Bryan Chen, Li Fuxin, Tucker Hermans. "Out of Sight, Still in Mind: Reasoning and Planning about Unobserved Objects with Video Tracking Enabled Memory Models," IEEE International Conference on Robotics and Automation (ICRA) 2024. [Project Website] [Paper]

**Yixuan Huang**, Adam Conkey, Tucker Hermans. "Planning for Multi-Object Manipulation with Graph Neural Network Relational Classifiers," IEEE International Conference on Robotics and Automation (ICRA) 2023. [Project Website] [Paper]

**Yixuan Huang**, Michael Bentley, Tucker Hermans, Alan Kuntz. "Toward Learning Context-Dependent Tasks from Demonstration for Tendon-Driven Surgical Robots," International Symposium on Medical Robotics (ISMR) 2021. (**Best Paper Award Finalist & Best Student Paper Award Finalist**) [Paper]

## Workshop Publications

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Syeon Kim, Mohanraj Devendran Shanthi, **Yixuan Huang**, Tucker Hermans. "Learning Multimodal Probabilistic Models of Manipulation Skill Effects," 2025 CoRL Workshop on Learning to Simulate Robot Worlds.

**Yixuan Huang**, Novella Alvina, Mohanraj Devendran Shanthi, Tucker Hermans. "Fail2Progress: Learning from Failures with Stein Variational Inference for Robot Manipulation," 2025 RSS Workshop on Out-of-Distribution Generalization in Robotics Towards Reliable Learning-Based Autonomy. **Best Paper Award Finalist**

**Yixuan Huang**, Christopher Agia, Jimmy Wu, Tucker Hermans, Jeannette Bohg. "Points2Plans: From Point Clouds to Long-Horizon Plans with Composable Relational Dynamics," 2024 CoRL Workshop on Learning Effective Abstractions for Planning (LEAP). **Oral Presentation**

**Yixuan Huang**, Jialin Yuan, Weiyu Liu, Chanho Kim, Li Fuxin, Tucker Hermans. "Latent Space Planning for Unobserved Objects with Environment-Aware Relational Classifiers," 2023 IROS Workshop Causality for Robotics.

**Yixuan Huang**. "Reasoning and Planning about Unobserved Objects with Memory Models," 2023 CoRL Workshop for Neural Representation Learning for Robot Manipulation.

## Honors and Awards

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2025 IEEE International Conference on Robotics and Automation Doctoral Consortium	<i>May 2025</i>
2021 International Symposium on Medical Robotics Best Paper Award Finalist	<i>Nov 2021</i>
2021 International Symposium on Medical Robotics Best Student Paper Award Finalist	<i>Nov 2021</i>
2021 International Symposium on Medical Robotics NSF Travel Award	<i>Oct 2021</i>
University of Utah School of Computing Department Fellowship	<i>Aug 2020</i>
National Scholarship (top 1%)	<i>Nov 2017 &amp; 2018</i>
Northeastern University Excellent Student (top 1%)	<i>Dec 2017 &amp; 2018</i>
Second Place in National Mathematical Modeling Competition in China	<i>Oct 2017</i>
First Place in Provincial Mathematical Modeling Competition	<i>Oct. 2017</i>

## Invited Talks

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Nov 2025, "Mobile Manipulation", AI@Princeton, Princeton, NJ.

Sep 2025, "Planning for Sequential Multi-Object Robot Manipulation with Learned Relational Dynamics Models", Princeton Postdoctoral Council Seminar Series, Princeton, NJ.

July 2025, "Planning for Sequential Multi-Object Robot Manipulation with Learned Relational Dynamics Models", Oregon State University, Host: Li Fuxin, Corvallis, OR.

May 2025, "Planning for Sequential Multi-Object Robot Manipulation with Learned Relational Dynamics Models", University of Texas at Austin, Host: Roberto Martín-Martín, Austin, TX.

Apr 2025, "From Sensor Data to Long-Horizon Plans with Spatial-Temporal Reasoning", University of Utah Robotics Seminar, Host: Haohan Zhang, Salt Lake City, UT.

Jan 2025, "From Sensor Data to Long-Horizon Plans with Spatial-Temporal Reasoning", University of Utah Graduate Research Symposium, Host: Pratik Soni, Salt Lake City, UT.

Feb 2024, "Reasoning and Planning for Unobserved Objects with Environment-Aware Relational Classifiers and Memory Models", University of Illinois Urbana-Champaign, Host: Katie Driggs-Campbell, Champaign, IL.

Nov 2021, "Toward Learning Context-Dependent Tasks from Demonstration for Tendon-Driven Surgical Robots", University of Utah Robotics Seminar, Host: Jake J Abbott, Salt Lake City, UT.

## Teaching

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### ECE 531/COS 531: Robot Planning Meets Machine Learning

*Guest Lecture about Learning Models for Robot Planning*

*Princeton University*

*Oct 2025*

### CS 6300 Artificial Intelligence

*Guest Lecture about Reinforcement Learning*

*University of Utah*

*Nov 2024*

### CS 4300 Artificial Intelligence

*Guest Lecture about Imitation Learning*

*University of Utah*

*April 2022*

### CS 4300 Artificial Intelligence

*Teaching Assistant*

*University of Utah*

*Jan 2022 – May 2022*

### CS 4300 Artificial Intelligence

*Teaching Assistant*

*University of Utah*

*Aug 2022 – Dec 2022*

## Mentoring

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*Mentees who co-authored above listed publications/articles are indicated with \*.*

Nichols Crawford Taylor\* (Utah Undergrad → Northeastern PhD Student)

Fall 2021 - Spring 2024

Pupul Pradhan\* (Utah Master → Evans & Sutherland)

Summer 2023

Novella Alvina\* (Utah Master)

Fall 2024 - Summer 2025

John Chen (Utah Undergrad)

Spring 2025 -Summer 2025

Bingying Wang (Utah Undergrad)

Spring 2025 - Spring 2025

Tom Wang (Princeton Undergrad)

Fall 2025 - Present

Akash Bhowmick (Princeton Undergrad)

Fall 2025 - Present

Joseph Xu (Princeton Master)

Fall 2025 - Present

Ian Henriques (Princeton Master)

Fall 2025 - Present

## Reviewing

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Conference on Robot Learning (CoRL)

2023, 2024, 2025

Robotics: Science and Systems (RSS)

2024, 2025

Robotics and Automation Letters (RA-L)

2024, 2025, 2026

International Conference on Robotics and Automation (ICRA)

2023, 2024, 2025

International Conference on Intelligent Robots and Systems (IROS)

2024, 2025

International Conference on Learning Representations (ICLR)

2025

IEEE Transactions on Robotics

2025

IEEE Transactions on Artificial Intelligence

2024

IEEE Transactions on Instrumentation and Measurement

2024

IEEE Transactions on Industrial Electronics

2024

Workshop on Learning Effective Abstractions for Planning (LEAP @ CoRL)

2024, 2025

## Skills

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**Computer Languages:** C/C++, MATLAB, Python (TensorFlow, PyTorch), Java, VHDL

**Software & Tools:** IsaacGym, ROS, Gazebo, PyBullet, HTML, LaTeX

## Outreach

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Robotics lab tour co-organizer, University of Utah Bridge Program

2022, 2023