# Yunhao Yang

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Github: github.com/yunhaoyang234 || Google Scholar: https://scholar.google.com/citations?user=hEKrDSEAAAAJ

## EDUCATION

**Doctor of Philosophy in Computer Science**, Expected in May 2027
University of Texas at Austin

**Master of Science & Bachelor of Science (Integrated) in Computer Science**, May 2022
University of Texas at Austin

**Bachelor of Arts in Mathematics**, May 2021
University of Texas at Austin

## SELECTED PUBLICATION[1]

*Yunhao Yang*, Neel P Bhatt, Rohan Siva, Pranay Samineni, Zhangyang Wang, Ufuk Topcu. "RepV: Safety-Separable Latent Spaces for Scalable Neurosymbolic Plan Verification." Under Review at ICML, 2026

*Yunhao Yang*, Junyuan Hong, Zhangyang Wang, Ufuk Topcu, et al. "LAD-VF: LLM-Automatic Differentiation Enables Fine-Tuning-Free Robot Planning from Formal Methods Feedback." ICRA, 2026

Minkyu Choi*, *Yunhao Yang**, Neel P. Bhatt*, Kushagra Gupta, Sahil Shah, Aditya Rai, David Fridovich-Keil, Ufuk Topcu, Sandeep P. Chinchali. "Real-Time Privacy Preservation for Robot Visual Perception." TMLR, 2025.

Neel P Bhatt*, *Yunhao Yang**, Rohan Siva, Daniel Milan, Ufuk Topcu, Zhangyang Wang. "Know Where You're Uncertain When Planning with Multimodal Foundation Models: A Formal Framework." MLSys (**Oral**), 2025

*Yunhao Yang*, Cyrus Neary, and Ufuk Topcu. "Automaton-Based Controller and Method with Generative Language Models for Task Execution." Proceedings of Neurosymbolic Systems, PMLR, 2025.

*Yunhao Yang*, Yuxin Hu, Mao Ye, Zaiwei Zhang, Zhichao Lu, Yi Xu, Ufuk Topcu, Ben Snyder. "Uncertainty-Guided Enhancement on Driving Perception System via Foundation Models." ICRA, 2025.

Minkyu Choi, Harsh Goel, Mohammad Omama, *Yunhao Yang*, Sahil Shah, Sandeep Chinchali. "Towards Neuro-Symbolic Video Understanding." ECCV (**Oral**), 2024.

*Yunhao Yang**, Neel Bhatt*, Tyler Ingebrand*, William Ward, Steven Carr, Zhangyang Wang, and Ufuk Topcu. "Fine-Tuning Language Models Using Formal Methods Feedback: A Use Case in Autonomous Systems." MLSys (**Oral**), 2024.

*Yunhao Yang*, Cyrus Neary, and Ufuk Topcu. "Multimodal Pretrained Models for Verifiable Sequential Decision-Making: Planning, Grounding, and Perception." AAMAS (**Oral**), 2024.

*Yunhao Yang**, Parham Gohari*, and Ufuk Topcu. "On the Privacy Risks of Deploying Recurrent Neural Networks in Machine Learning Models." Proceedings on Privacy Enhancing Technologies, 2023.

*Yunhao Yang*, Yi Wang, and Chandrajit Bajaj. "Deep Contrastive Patch-Based Subspace Learning for Camera Image Signal Processing." IEEE World Conference on Applied Intelligence and Computing (**Best Paper**), 2023.

*Yunhao Yang* and Zhaokun Xue. "Training Heterogeneous Features in Sequence to Sequence Tasks: Latent Enhanced Multi-filter Seq2seq Model." Intelligent Systems and Applications: Proceedings of the 2022 Intelligent Systems Conference (**Best Student Paper**), 2022.

## PATENT

Ufuk Topcu, *Yunhao Yang*, Cyrus Neary, and Jean-Raphaël Gaglione. "Automaton-Based Controller and Method with Generative Language Models for Task Execution." US Patent Application No.18/958,684, 2025.

[1] * Equal Contribution

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## AWARD AND FELLOWSHIP

**Amazon Scholar (Fellowship)**, 2024-2025

Special Departmental Honor in Computer Science (Completed Honors Thesis Dissertation), 2022

College of Natural Science Research Distinction, 2021

Undergraduate Research Fellowship, 2020

College Scholar, 2019, 2020, 2021

## EXPERIENCE

**PhD Intern, AI Research,** June 2025~August 2025
*Neurosymbolic Intelligence Company (Startup)*

**PhD Intern, AI Research,** June 2024~August 2024
*Cruise AI (General Motors)*

**Graduate Research Assistant,** June 2022~May 2023
*Oden Institute for Computational Engineering & Science*

**Moncrief Summer Internship,** June 2020~August 2020 and June 2021~August 2021
*Oden Institute for Computational Engineering & Science*

**Research Assistant,** Jan 2020-May 2022
*University of Texas at Austin, McCombs School of Business*

## INVITED TALK

Formal-Methods-Guided Rapid LLM Refinement for Safety-Constrained Planning, UT-Amazon Hub Automated Reasoning Research, 2025

Know Where You're Uncertain When Planning with Multimodal Foundation Models, USC SAIDS Lab, 2025

Foundation Models for Verifiable Sequential Decision-Making, Amazon Science Hub Robotics Research Symposium, 2024

Fine-Tuning Language Models Using Formal Methods Feedback, UTCS Autonomous Mobile Robotics Laboratory, 2023

Multimodal Pre-trained Models for Verifiable Sequential Decision-Making, Texas Robotics Symposium, 2023

Multimodal Pre-trained Models for Verifiable Sequential Decision-Making, Microsoft Applied Sciences, 2023

## COMMUNITY SERVICE

**Reviewer/Program Committee** for MLSys 2025, ICLR 2024 and 2025, NeurIPS 2022, 2023, and 2025, AAAI 2025

**Volunteer** for TACC Back@TACC, 2022, 2024

**Volunteer** for STEM Girl Day at UT Austin, Del Valle High School Tours, 2024, 2025

**Volunteer** for LASA High School Visit, FIRST Technical Challenge: Texas-Central GEMS League Tournament, 2023

**Mentor** for REACT RUE Summer Program, 2023

## SKILL

Language: English and Chinese

Programming Language: Python, Java, C, HTML, Swift

Machine Learning and Robotics: Pytorch, Tensorflow, Scikit Learn, OpenCV, ROS, OpenAI, etc.

Formal Methods: NuSMV, Storm