

# Lingyu Zhang

Ph.D. Student, Duke University

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## RESEARCH INTERESTS

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Embodied AI: Robot Learning, Policy Transfer, Human-AI teaming, World Models, AI for Scientific Discovery

## EDUCATION

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### Duke University

*Ph.D. Electrical & Computer Engineering*  
*Advisor: Boyuan Chen*

*Expected 2028*

### Columbia University

*M.S. Electrical Engineering*

*02/2023*

### Nanjing University

*B.E. Microelectronic Science & Engineering*

*06/2021*

## PUBLICATIONS

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Zhengran Ji, **Lingyu Zhang**, Paul Sajda, Boyuan Chen. Enabling Multi-Robot Collaboration from Single-Human Guidance, *ICRA 2025*.

**Lingyu Zhang**, Mitchell Wang, Boyuan Chen. Scientific Judgment Drifts Over Time in AI Ideation, *Preprint 2025*.

**Lingyu Zhang**, Zhengran Ji, Nicholas R Waytowich, Boyuan Chen. GUIDE: Real-Time Human-Shaped Agents, *Neurips 2024*.

**Lingyu Zhang**, Zhengran Ji, Boyuan Chen. CREW: Facilitating Human-AI Teaming Research, *TMLR 2024*.

Mingyang Zhou, **Lingyu Zhang**, Sophia Horng, Maximillian Chen, Kung-Hsiang Huang, Shih-Fu Chang. M2-TabFact: Multi-Document Multi-Modal Fact Verification With Visual and Textual Representations of Tabular Data, *ACL Findings 2025*.

Kung-Hsiang Huang, Mingyang Zhou, Hou Pong Chan, Yi R Fung, Zhenhailong Wang, **Lingyu Zhang**, Shih-Fu Chang, Heng Ji. Do LVLMs Understand Charts? Analyzing and Correcting Factual Errors in Chart Captioning, *ACL Findings 2024*.

**Lingyu Zhang**<sup>\*</sup>, Chengzhi Mao<sup>\*</sup>, Junfeng Yang, Carl Vondrick. Robust Video Perception by Seeing Motion, *Arxiv 2023*.

Chengzhi Mao, **Lingyu Zhang**, Abhishek Vaibhav Joshi, Junfeng Yang, Hao Wang, Carl Vondrick. Robust Perception through Equivariance, *ICML 2023*.

Bangpeng Xiao, Shenyuan Ye, Xicai Li, Min Li, **Lingyu Zhang**, Yuanqing Wang. A Stereo Matching Method for Three-Dimensional Eye Localization of Autostereoscopic Display, *ICIG 2021*.

## ONGOING PROJECTS

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**Zero-shot Policy Transfer Across Extreme Fidelity Gaps**

*Project Lead. Developed a novel method that enables a navigation policy trained on extremely low-fidelity simulators to transfer to photo-realistic simulators. Manuscript in preparation.*

### **Real-time Transferrable Vision-Language Navigation (DARPA TIAMAT Challenge)**

*Co-Team Lead. Built an zero-shot vision-language navigation system capable of transferring semantics across environments. Contributed to task understanding, semantics-guided exploration & planning, and object detection modules. Manuscript in preparation.*

## **PAST RESEARCH EXPERIENCE**

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### **Graduate Research Assistant, Columbia University**

Vision-Language Fact Verification & Understanding. 02/2023 - 08/2023  
*Advisors: Shih-Fu Chang & Mingyang Zhou*  
*Developed a multi-modal dataset for fact-checking across visual-language data. Benchmarked VLMs' finetuning and zero-shot performance.*

Robust Vision Models. 02/2022 - 11/2022  
*Advisors: Junfeng Yang & Carl Vondrick*  
*Designed a novel test-time adversarial defense for video models using motion consistency. Studied a novel defense method based on dense equivariant properties of neural networks.*

### **Undergraduate Researcher, Nanjing University**

Learned Image Compression. 12/2020 - 06/2021  
*Advisor: Prof. Qiu Shen*  
*Implemented an end-to-end learned image compression model using an entropy-constrained variational autoencoder with a multi-scale encoder.*

## **TECHNICAL SKILLS**

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**Programming:** Python, C#, Bash

**DL Frameworks:** PyTorch, JAX, Huggingface Transformers, vLLM, Stable-Baselines3, CleanRL, TorchRL, Docker, Weights & Biases, Hydra

**Simulation:** Gymnasium, MuJoCo, Habitat, Unity

**Foundations:** Reinforcement Learning, Imitation Learning, Latent Action Modeling, Visual Representation Learning, Optical Flow, Language Modeling, LLMs & VLMs, Adversarial ML

## **SERVICE**

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### **Peer Review**

2025 Conference on Robot Learning (CoRL) Reviewer

### **Mentorship**

Zhengran Ji - Human-AI Teaming

Mitchell Wang - AI-driven Scientific Ideation

### **Teaching Assistant**

Robot Learning - Fall 2025, Duke University

## **LEADERSHIP**

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**PhD Representative (ECE)**, Engineering Graduate Student Council, Duke University  
2025-present

**Career Chair**, Graduate Electrical Engineering Council, Columbia University  
2022

**President**, Nanjing University Hip-Hop Association  
2018-2019

**Class Representative**, Nanjing University  
2017-2018