

Xiyang Wu

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EDUCATION

University of Maryland

Ph.D. in Electrical and Computer Engineering, GAMMA Laboratory

Advisor: Dinesh Manocha GPA: 3.83/4.00

College Park, MD

Aug. 2021 – May. 2026 (Expected)

Georgia Institute of Technology

M.S. in Electrical and Computer Engineering, CORE Robotics Laboratory

Advisor: Matthew Gombolay GPA: 4.00/4.00

Atlanta, GA

Aug. 2019 – May. 2021

Tianjin University

B.Eng. in Measuring and Controlling Technologies and Instruments (Honors Class)

Advisor: Xiaodong Zhang GPA: 3.85/4.00

Tianjin, China

Sep. 2015 – Jul. 2019

PUBLICATION

(* indicates equal contributions)

- Chak Lam Shek*, **Xiyang Wu***, Wesley A. Suttle, Carl Busart, Erin Zaroukian, Dinesh Manocha, Pratap Tokekar, Amrit Singh Bedi. LANCAR: Leveraging Language for Context-Aware Robot Locomotion in Unstructured Environments. *The 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*. Link, Project Page.
- Tianrui Guan*, Ruiqi Xian*, Xijun Wang, **Xiyang Wu**, Mohamed Elnoor, Daeun Song, Dinesh Manocha. AGL-NET: Aerial-Ground Cross-Modal Global Localization with Varying Scales. *The 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)*. Link.
- Xiyang Wu**, Souradip Chakraborty, Ruiqi Xian, Jing Liang, Tianrui Guan, Fuxiao Liu, Brian Sadler, Dinesh Manocha, Amrit Singh Bedi. Highlighting the Safety Concerns of Deploying LLMs/VLMs in Robotics. *arXiv:2402.10340, VLADR Workshop at The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR 2024)*. Link, Code, Project Page.
- Tianrui Guan*, Fuxiao Liu*, **Xiyang Wu**, Ruiqi Xian, Zongxia Li, Xiaoyu Liu, Xijun Wang, Lichang Chen, Furong Huang, Yaser Yacoob, Dinesh Manocha, Tianyi Zhou. HallusionBench: An Advanced Diagnostic Suite for Entangled Language Hallucination and Visual Illusion in Large Vision-Language Models. *The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR 2024)*. Link, Code.
- Xiyang Wu**, Rohan Chandra, Tianrui Guan, Amrit Singh Bedi, Dinesh Manocha. Intent-Aware Planning in Heterogeneous Traffic via Distributed Multi-Agent Reinforcement Learning. *7th Annual Conference on Robot Learning (CoRL 2023) (Oral)*. Link, Code.
- Xiyang Wu**, Rohan Chandra, Tianrui Guan, Amrit Singh Bedi, Dinesh Manocha. iPLAN: Intent-Aware Planning in Heterogeneous Traffic via Distributed Multi-Agent Reinforcement Learning. *MRS Workshop at The 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023) (Best Paper Award)*.
- Haoyue Liu, **Xiyang Wu**, Ning Yan, Zexiao Li, Xiaodong Zhang. A novel image registration-based dynamic photometric stereo method for online defect detection in aluminum alloy castings. *Digital Signal Processing*, 2023.

PREPRINTS

(* indicates equal contributions)

- Xiyang Wu***, Tianrui Guan*, Dianqi Li, Shuaiyi Huang, Xiaoyu Liu, Xijun Wang, Ruiqi Xian, Abhinav Shrivastava, Furong Huang, Jordan Lee Boyd-Graber, Tianyi Zhou, Dinesh Manocha. AUTOHALLUSION: Automatic Generation of Hallucination Benchmarks for Vision-Language Models. *arXiv:2406.10900, Submitted to The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP 2024)*. Link, Project Page

2. **Xiyang Wu**, Souradip Chakraborty, Ruiqi Xian, Jing Liang, Tianrui Guan, Fuxiao Liu, Brian Sadler, Dinesh Manocha, Amrit Singh Bedi. Highlighting the Safety Concerns of Deploying LLMs/VLMs in Robotics. *arXiv:2402.10340, Submitted to The 2024 Conference on Empirical Methods in Natural Language Processing (EMNLP 2024)*. Link, Code, Project Page.
3. Ruiqi Xian, **Xiyang Wu**, Tianrui Guan, Vinay Lanka, Xijun Wang, Boqing Gong, Dinesh Manocha. UAVMAE: Object-Aware Masked Autoencoding for Self-Supervised UAV Video Pretraining. *Submitted to European Conference on Computer Vision 2024 (ECCV 2024)*.
4. Esmaeil Seraj, **Xiyang Wu**, Matthew Gombolay. FireCommander: An Interactive, Probabilistic Multi-agent Environment for Joint Perception-Action Tasks. *arXiv:2011.00165, 2020*. Link, Code.

RESEARCH EXPERIENCE

GAMMA Laboratory, University of Maryland

College Park, MD

Research Assistant Advisor: Dinesh Manocha

Sep. 2022 – Now

- **Large Language Model in Robot Navigation** (In progress). Using Large Language Model and reinforcement learning in robot trajectory planning.
- **Intent-aware Autonomous Driving**. We designed a distributed multi-agent reinforcement learning (MARL) algorithm that jointly predicts trajectories and intents in dense and heterogeneous traffic scenarios. We used behavioral incentive for high-level decision-making strategy that sets planning sub-goals and instant incentive for low-level motion planning to execute sub-goals to model agents' incentives to their strategies.

Cognitive Optimization and Relational (CORE) Robotics Laboratory

Atlanta, GA

Research Assistant Advisor: Matthew Gombolay

Jan. 2020 – Dec. 2020

- **FireCommander: Multi-agent Wildfire Pruning System with Learning from Demonstration**
We investigated and implemented the state-of-art of reinforcement learning approaches on the simulation environment we designed for multi-agent firefighting tasks.

Laboratory of Micronano Manufacturing Technology

Tianjin, China

Research Assistant Advisor: Xiaodong Zhang

Sep. 2018 – Jul. 2019

- **Online Scratch Inspection System with Photometric Stereo Method**. We designed the online defect detection system with the photometric stereo method and multiple image processing approaches.

TEACHING EXPERIENCE

Graduate Teaching Assistant

University of Maryland

ENEE 664: Optimal Control

Spring 2023

ENEE 245: Digital Circuits and Systems Laboratory

Spring 2023

ENEE 303: Analog and Digital Electronics

Fall 2022

ENEE 307: Electronic Circuits Design Laboratory

Spring 2022

ENEE 322: Signal and System Theory

Fall 2021

HONOR & AWARDS

- Best Paper Award, IROS 2023 MRS Workshop
- Merit Student Award in Tianjin University, 2018
- Samsung Scholarship, 2017
- Secondary Scholarship in Hexagon Innovation Laboratory in Tianjin University, 2016
- National Secondary Award in the 10th iCAN International Contest of Innovation, 2016

ACADEMIC SERVICE

- **Journal Reviewer:** IEEE Access, IEEE Transactions on Systems, Man and Cybernetics: Systems, RA-L
- **Conference Reviewer:** CVPR 2024 (MMFM Workshop), ICRA 2024, EMNLP 2024
- **Program Committee:** CoCoMARL Workshop at RLC 2024