Xiyang Wu

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Education

University of Maryland — College Park, MD
Ph.D. in Electrical and Computer Engineering, GAMMA Laboratory — *Aug. 2021 – May. 2026 (Expected)*
Advisor: Dinesh Manocha GPA: 3.80/4.00

Georgia Institute of Technology — Atlanta, GA
M.S. in Electrical and Computer Engineering, CORE Robotics Laboratory — *Aug. 2019 – May. 2021*
Advisor: Matthew Gombolay GPA: 4.00/4.00

Tianjin University — Tianjin, China
B.Eng. in Measuring and Controlling Technologies and Instruments (Honors Class) — *Sep. 2015 – Jul. 2019*
Advisor: Xiaodong Zhang GPA: 3.85/4.00

Publication

1. **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) (**Oral**)*, 2023

2. **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 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (**Best Paper Award**)*, 2023

3. 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)

1. 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 & Visual Illusion in Large Vision-Language Models *arXiv:2310.14566, Submitted to The IEEE / CVF Computer Vision and Pattern Recognition Conference (CVPR)*, 2024

2. Chak Lam Shek*, **Xiyang Wu***, Dinesh Manocha, Pratap Tokekar, Amrit Singh Bedi. LANCAR: Leveraging Language for Context-Aware Robot Locomotion in Unstructured Environments. *arXiv:2310.00481, Submitted to International Conference on Robotics and Automation (ICRA)*, 2024

3. Esmaeil Seraj, **Xiyang Wu**, Matthew Gombolay. FireCommander: An Interactive, Probabilistic Multi-agent Environment for Joint Perception-Action Tasks. *arXiv:2011.00165*, 2020

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

- **Reviewer:** IEEE Access, ICRA 2024, RA-L