

# Fan Yang

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## Education Background

- Carnegie Mellon University**, Pittsburgh, PA Aug. 2021 – 2023  
➤ Master of Science in Robotics (MSR) GPA 4.08/4.0
- Stanford University**, Palo Alto, CA Jun. 2018-Aug. 2018  
➤ Summer Session GPA 4.0/4.0
- Tsinghua University**, Beijing Aug. 2016-Jul. 2020  
➤ Bachelor of Engineering in Engineering Mechanics (Qian Class, Tsien Excellence in Engineering Program)

## Publications

1. **Fan Yang**, Wenxuan Zhou, Harshit Sikchi, David Held. "Self-Paced Policy Optimization with Safety Constraints". *ICML Safe Learning for Autonomous Driving Workshop*, 2022
2. **Fan Yang**, Chao Yang, Huaping Liu, and Fuchun Sun. "Evaluations of the Gap between Supervised and Reinforcement Lifelong Learning on Robotic Manipulation Tasks." In *Conference on Robot Learning*, pp. 547-556. PMLR, 2022.
3. **Fan Yang**, Chao Yang, Di Guo, Huaping Liu, and Fuchun Sun. "Fault-Aware Robust Control via Adversarial Reinforcement Learning." In *2021 IEEE 11th Annual International Conference on CYBER Technology in Automation, Control, and Intelligent Systems (CYBER)*, pp. 109-115. IEEE, 2021.
4. Jiachen Li, **Fan Yang**, Hengbo Ma, Srikanth Malla, Masayoshi Tomizuka, and Chiho Choi. "RAIN: Reinforced Hybrid Attention Inference Network for Motion Forecasting" *IEEE/CVF International Conference on Computer Vision (ICCV) (2021)*
5. Jiachen Li\*, **Fan Yang**\*, Masayoshi Tomizuka, and Chiho Choi. "EvolveGraph: Multi-Agent Trajectory Prediction with Dynamic Relational Reasoning." *Advances in Neural Information Processing Systems (NeurIPS) (2020)* (\* denotes equal contributions).

## Research Experience

Research Assistant at **Carnegie Mellon University**, Pittsburgh, PA Aug. 2021 - Now  
Advisor: David Held, Assistant Professor at Robotics Institute

- Research focuses on combining motion planning and reinforcement learning to solve safe RL tasks in navigation and autonomous driving domain.
- Research focuses on applying motion planning as a higher level planner in manipulation tasks with long-horizon reasoning.
- Research focuses on extracting better representations of point cloud for manipulation tasks inspired by semantic features, e.g., contact points.

Research Assistant at **Tsinghua University**, Beijing Aug. 2020 – Jun. 2021  
Advisor: Huaping Liu, Professor at the Department of Computer Science and Technology

- Develop an adversarial training method to make robots robust to joint damage.
- Develop a benchmark and evaluate the performance of state-of-the-art continual learning algorithm in reinforcement learning domain.

Research Assistant at **University of California**, Berkeley, CA Sep. 2019-Dec.2019  
Advisor: Masayoshi Tomizuka, Professor at the Department of Mechanical Engineering

- Develop an algorithm that can extract the relation between multiple agents and predict the trajectory of them in a highly interactive and dynamical system, e.g. traffic.
- Combine RL with hybrid attention mechanism by pruning unimportant attention and improve the performance in motion forecasting applications.

Research Assistant at **Stanford University**, Palo Alto, CA

June. 2019-Aug. 2019

*Advisor: Oussama Khatib, Professor at the Computer Science Department*

- Develop an operational-space compliant control method, which can grasp objects accurately without any force or vision sensing. E.g., we can grasp light-weight objects accurately without perturbation.

Research Assistant at **Purdue University**, West Lafayette, IN

Aug. 2018 – Jan 2019

*Advisor: Richard Voyles, Professor of Engineering Technology*

- Develop mathematical formulations for an operational space hierarchical controller for Unmanned Aerial Vehicles with a parallel manipulator, including Jacobian matrix, mass matrix, and null space control.

### Academic Services

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Reviewer of ICRA, Conference on Robotic Learning, Intelligent Vehicles Symposium.

### Awards and Honors

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- Academic Excellence Scholarship (Awarded to the top 30% students) Sep. 2018 & Sep. 2017
- Xuetang Scholarship (Awarded to 200 out of 3000 students) Sep. 2019 & Sep. 2018 & Sep. 2017
- Overall Excellence Award of School of Aerospace Engineering (awarded to 10% of the students) Sep. 2018

### Competition

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4th in MineRL Competition of NeurIPS 2020, advised by Prof. *Lin Shao* and Prof. *Jiankun Wang*