Chaoyi Pan

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Education

Carnegie Mellon University (CMU) *Pittsburgh, United States*

PhD in Electronic and Computer Engineering Aug. 2023 - now

Tsinghua University (THU) *Beijing, China*

Bachelor of Electronic Engineering Sep. 2019 - July 2023

Publications

[1] **Chaoyi Pan**, Yuzi Yan, Zexu Zhang, Yuan Shen. "Flexible Decentralized Displacement-Based Formation Control: An Multi-agent Reinforcement Learning Approach" *EUSIPCO2022*, [Link]

[2] Yunfei Li*, **Chaoyi Pan***, Huazhe Xu, Xiaolong Wang, Yi Wu. "Efficient Bimanual Handover and Rearrangement via Symmetry-Aware Actor-Critic Learning", *ICRA2023* [Link]

[3] **Chaoyi Pan***, Marion Lepert*, Shenli Yuan, Rika Antonova, Jeannette Bohg. "In-Hand Manipulation of Unknown Shapes with Tactile Sensing", *IROS2023* [Link]

Research Projects

Stanford Interactive Perception and Robot Learning (IPRL) Lab *Stanford, USA*

Summer Intern · Supervisor: Jeannette Bohg June 2022 – September 2022

- **Task-Driven In-Hand Manipulation:** A system based on a Tactile-Enabled Roller Grasper to achieve in-hand manipulation without access to object shape prior or vision information. Introduce 3D tactile SLAM to achieve object pose estimation and shape reconstruction. Introduce Bayesian optimization to achieve task-driven exploration. Paper accepted by IROS2023.

Tsinghua WuLab *Beijing, China*

Research Assistant · Supervisor: Yi Wu September 2021 – June 2022

- **Bimanual Handover and Rearrangement:** A system to jointly control two arms to rearrange objects as fast as possible leveraging the interchangeable roles of the two manipulators. Develop a symmetry-aware actor-critic framework that leverages the interchangeable roles of the two manipulators. Augment training data with an object-centric relabeling technique. Paper accepted by ICRA2023.

Tsinghua SLab *Beijing, China*

Research Assistant · Supervisor: Yuan Shen October 2020 - September 2021

- **Multi-agent Formation Control:** A fully decentralized formation control system for a mobile robot system utilizing MARL and Hausdorff distance. Paper accepted by EUSIPCO2022.

Awards and Honors

Oct. 2019-2020	**Scholarship**: "National Scholarship " (0.2%)	*China*
Oct. 2020-2021	**Scholarship**: "National Scholarship " (0.2%)	*China*
Oct. 2021-2022	**Scholarship**: "National Scholarship " (0.2%)	*China*
Nov. 2020	**Contest**: First Prize in "Chinese Undergraduate Students' Physics Competition" (1%)	*China*
Sep. 2020	**Contest**: First Prize in "Hardware Design Competition" (1%)	*China*
Jun. 2021	**Honorary Title**: "Spark Innovative Talent Cultivation Program" Membership (2/256)	*China*
Jun. 2022	**Honorary Title**: "Undergraduate Visiting Research Program (UGVR)" Membership (2/256)	*Stanford*
Apr. 2022	**Fundings**: "Tsinghua University Future Scholar" PI (1/256)	*China*

Technical Skills

Programming Python, Matlab, C/C++, ROS

Simulation Environments IssacGym, PyBullet, Mujoco

Drawing & Typesetting Photoshop, Illustrator, Omnigraffle, Office, LaTeX

Languages Chinese(Native), English