Chao Tang (唐潮)

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EDUCATION

Southern University of Science and Technology, Shenzhen, China Sept. 2021 – Jun. 2025(expected)

Doctor of Philosophy (Robotics) Supervisor: Prof. Hong Zhang

GPA: 3.79

National University of Singapore, Singapore May 2024 – May 2025(expected)

Visiting Ph.D. Student Supervisor: Prof. David Hsu

AdaComp Lab (School of Computing)

Georgia Institute of Technology, Atlanta, USA Aug. 2018 – May. 2020

Master of Science (Electrical and Computer Engineering) Supervisor: Prof. Patricio Vela

GPA: 3.90

Nanjing Tech University, Nanjing, China Aug. 2014 – Jun. 2018

Bachelor of Engineering (Automation)

GPA: 3.80, Ranking: 1/123

RESEARCH INTERESTS

My research interests involve robotic **manipulation and grasping**, **mobile manipulation**, **human-robot interaction**, and **semantic reasoning** for robots. The ultimate goal is to develop autonomous agents that can perceive, understand, and interact with the physical world with the same level of intelligence as humans.

PUBLICATIONS

- **Chao Tang**, Anxing Xiao, Yuhong Deng, Tianrun Hu, Wenlong Dong, Hanbo Zhang, David Hsu, and Hong Zhang, "MimicFunc: Imitating Tool Manipulation from a single Human Video via Functional Correspondence", under review.
- **Chao Tang**, Anxing Xiao, Yuhong Deng, Tianrun Hu, Wenlong Dong, Hanbo Zhang, David Hsu, and Hong Zhang, "FUNCTO: Function-Centric One-Shot Imitation Learning for Tool Manipulation", under review.
- **Chao Tang**, Dehao Huang, Wenlong Dong, Ruinian Xu, and Hong Zhang, "FoundationGrasp: Generalizable Task-Oriented Grasping with Foundation Models", accepted to IEEE T-ASE.
- **Chao Tang**, Dehao Huang, Wenqi Ge, Weiyu Liu and Hong Zhang, "*GraspGPT: Leveraging Semantic Knowledge from a Large Language Model for Task-Oriented Grasping*", accepted to IEEE Robotics and Automation Letters.
- **Chao Tang**, Dehao Huang, Lingxiao Meng, Weiyu Liu and Hong Zhang, "*Task-Oriented Grasp Prediction with Visual-Language Inputs*", accepted to IEEE IROS/RSJ 2023.
- **Chao Tang**, Jingwen Yu, Weinan Chen, Bingyi Xia and Hong Zhang, "*Relationship Oriented Semantic Scene Understanding for Daily Manipulation Tasks*", accepted to IEEE IROS/RSJ 2022.
- Yunzhi Lin*, **Chao Tang***, Fu-Jen Chu and Patrxicio A. Vela, "*Using Synthetic Data and Deep Networks to Recognize Primitive Shapes for Object Grasping*", accepted to IEEE ICRA 2020. (***-equal contribution**)
- **Chao Tang**, Yifei Fan and Anthony J. Yezzi, "*An Adaptive View of Adversarial Robustness from Test-time Smoothing Defense*", accepted to NeurIPS 2019 workshop.

- Yuhong Deng, **Chao Tang**, Cunjun Yu, Linfeng Li, and David Hsu, "CLASP: General-Purpose Clothes Manipulation with Semantic Keypoints", under review.
- Shan An, Ziyu Meng, **Chao Tang**, Yuning Zhou, Tengyu Liu, Fangqiang Ding, Shufang Zhang, Yao Mu, Ran Song, Wei Zhang, Zeng-Guang Hou, and Hong Zhang, "Dexterous Manipulation through Imitation Learning: A Survey", under review.
- Zijun Lin, **Chao Tang**, Hanjing Ye, and Hong Zhang, "FlowPlan: Zero-Shot Task Planning with LLM Flow Engineering for Robotic Instruction Following", under review.

- Dehao Huang, Wenlong Dong, **Chao Tang**, and Hong Zhang, "HGDiffuser: Efficient Task-Oriented Grasp Generation via Human-Guided Grasp Diffusion Models", under review.
- Wenlong Dong, Dehao Huang, Jiangshan Liu, **Chao Tang**, and Hong Zhang, "RTAGrasp: Learning Task-Oriented Grasping from Human Videos via Retrieval, Transfer, and Alignment", accepted to IEEE ICRA 2025.
- Wenqi Ge, **Chao Tang**, and Hong Zhang, "Commonsense Scene Graph-based Target Localization for Object Search", (EDM workshop @ IROS 2024 Best Paper Finalist), accepted to IROS 2024.
- Dehao Huang, **Chao Tang**, and Hong Zhang, "*Efficient Object Rearrangement vai Multi-view Fusion*", accepted to IEEE ICRA 2024.
- Weinan Chen, Hanjing Ye, Changfei Fu, **Chao Tang**, Lei Zhu, and Hong Zhang, "*Keyframe Selection with Information Occupancy Grid Model for Long-Term Data Association*", accepted to IEEE/RSJ IROS 2022.
- Yunzhi Lin, **Chao Tang**, Fu-Jen Chu, Ruinian Xu, and Patricio A. Vela, "*Primitive Shape Recognition for Object Grasping*", under review.
- Fu-Jen Chu, Ruinian Xu, **Chao Tang** and Patricio A. Vela, "*Recognizing object affordance to support scene reasoning for manipulation tasks*", under review.
- Ruinian Xu, Fu-Jen Chu, **Chao Tang**, Weiyu Liu and Patricio A. Vela, "*An Affordance Keypoint Detection Network for Robot Manipulation*", accepted to IEEE Robotics and Automation Letters (RA-L) & ICRA 2021.
- Cuimei Bo, Wei Gao, **Chao Tang**, Jun Li and Xiaohua Lu, "*Dynamic Control Design and Simulation of Biogas Pressurized Water Scrubbing Process*", accepted to 10th IFAC Symposium on Advanced Control of Chemical Process ADCHEM 2018.

INTERNS

- Southern University of Science and Technology, Shenzhen, China — Mar. 2021 – Aug. 2021

Research assistant at Shenzhen Key Laboratory of Robotics and Computer Vision supervised by Prof. Hong Zhang

- Georgia Institute of Technology, Atlanta, USA — May 2020 – Jan. 2021

Graduate research assistant at Intelligent Vision and Automation Lab supervised by Prof. Patricio Vela

- Fibrant Co. Ltd, Nanjing, China — Jun. 2017 – Aug. 2017

Process control engineer with Mr. Li Liu

HONORS AND AWARDS

- Outstanding Graduate Student (2023), SUSTech
- President Scholarship (2015, 2018), Nanjing Tech University
- 2nd Prize, NXP Intelligent Vehicle Contest (2017), National Level
- 1st Prize, NXP Intelligent Vehicle Contest (2017), East China Level
- 3rd Prize, Siemens Intelligent Manufacturing Contest Challenge (2017)
- Outstanding Graduate Horner (2018), Nanjing Tech University

ACTIVITIES & SERVICES

- Conference on Robot Learning (CoRL) Reviewer
- IEEE Transactions on Industrial Informatics (TII) Reviewer
- IEEE Transactions on Automation Science and Engineering (TASE) Reviewer
- IEEE Robotics and Automation Letters (RA-L) Reviewer
- IEEE ICRA Reviewer
- IEEE/RSJ IROS Reviewer
- IEEE SII/SICE Reviewer
- WRC SARA Reviewer
- IEEE ICRA 2021 Organizing Committee & Outstanding Volunteer

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TEACHING

- ✧ Graduate Teaching Assistant: EE 5058 - Introduction to Information Technology Spring 2024, Spring 2024.
- ✧ Graduate Teaching Assistant: EE 101 - Electronic and Information Technology for Metaverse, Fall 2024.
- ✧ Graduate Teaching Assistant: EE 5346 - Autonomous Robot Navigation, Spring 2023