JUNJIA LIU

Email: jjliu@mae.cuhk.edu.hk **Tel:** +852 68793633 **Add:** The Chinese University of Hong Kong, Shatin, Hong Kong

PERSONAL STATEMENT

My research interest lies primarily in learning robot bimanual manipulation skills for domestic service tasks.

EDUCATION

01/08/2021-present **The Chinese University of Hong Kong** **Hong Kong, CN**
Doctor of Philosophy in Mechanical and Automation Engineering

01/09/2018-01/06/2021 **Shanghai Jiao Tong University** **Shanghai, CN**
Master of Engineering in Mechanical Engineering **GPA: 3.65/4.0**

01/09/2014-01/06/2018 **Southwest Jiaotong University** **Chengdu, CN**
Bachelor of Engineering in Mechatronic Engineering **GPA: 3.71/4.0 Rank: 1/22**

Awards and honors:

2019 SJTU School Scholarship for Technological Innovation

2019 Best Technology Award, Deecamp 2019 Deep Learning Summer Camp

2017 1st Prize in Sichuan Province, "Challenge Cup" for Academic and Technology Contest

2017 National Scholarship for undergraduate students

2016 National Scholarship for undergraduate students

2015 1st Prize in Sichuan Province, National Mathematical Modelling Contest for University Students

Publications:

1. **Junjia Liu**, Yiting Chen, Zhipeng Dong, Shixiong Wang, Sylvain Calinon, Miao Li, Fei Chen. **Robot Cooking With Stir-Fry: Bimanual Non-Prehensile Manipulation of Semi-Fluid Objects.** *IEEE Robotics and Automation Letters, 2022, 7(2): 5159-5166. Paper Link*
2. **Junjia Liu**, Huimin Zhang, Zhuang Fu, Yao Wang. **Learning Scalable Multi-Agent Coordination by Spatial Differentiation for Traffic Signal Control**, *Engineering Applications of Artificial Intelligence (EAAI): 104165*. *Paper Link*
3. **Junjia Liu**, Zhihao Li, Wanyu Lin, Sylvain Calinon, Kay Chen Tan, Fei Chen. **SoftGPT: Learn Goal-oriented Soft Object Manipulation Skills by Generative Pre-trained Heterogeneous Graph Transformer.** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023). Paper Link*
4. **Junjia Liu**, Hengyi Sim, Chenzui Li, and Fei Chen. **BiRP: Learning Robot Generalized Bimanual Coordination using Relative Parameterization Method on Human Demonstration.** *IEEE Conference on Decision and Control (CDC 2023). Paper Link*
5. Zheng Sun, Zhiqi Wang, **Junjia Liu**, Miao Li, Fei Chen. **Mixline: A Hybrid Reinforcement Learning Framework for Long-horizon Bimanual Coffee Stirring Task.** *Intelligent Robotics and Applications: 15th International Conference, ICIRA 2022. Paper Link*
6. **Junjia Liu**, Jianfei Guo, Zehui Meng, Jingtao Xue. **ReVoLT: Relational Reasoning and Voronoi Local graph planning for Target-driven navigation**. *Arxiv. Paper Link*
7. **Junjia Liu**, Jiaying Shou, Zhuang Fu, Hangfei Zhou, Rongli Xie, Jun Zhang, Jian Fei, Yanna Zhao. **Efficient reinforcement learning control for continuum robots based on Inexplicit Prior Knowledge**. *Arxiv. Paper Link*

8. Huimin Zhang, Yafei Wang, **Junjia Liu**, Chengwei Li, Taiyuan Ma, Chengliang Yin. **A Multi-Modal States based Vehicle Descriptor and Dilated Convolutional Social Pooling for Vehicle Trajectory Prediction**, *SAE Technical Paper (2021): 10.4271*. *Paper Link*

RELEVANT SKILLS

- **Languages**: native in Chinese and proficient in English (IELTS: 7.0).

- **Programming Language**:
  Python (advanced level, AI programming);
  C/C++ language (intermediate, Robot Hardware Control, like STM32);
  C# language (intermediate, Robot Software Development);
  MATLAB (intermediate, scientific computing).

- **Robot Design & Control**:
  Linux, STM32, UR5, ROS, SolidWorks, Auto CAD.