

# Jiaming Hu

(951) 333-3160 | [jih189@ucsd.edu](mailto:jih189@ucsd.edu) | linkedin:jiaming-hu-a04a28171 | [website:jih189.github.io](https://github.com/jih189)

## MAIN RESEARCH FOCUS

Multi-Modal Motion Planning and Perception for Manipulation

## EDUCATION

B.S., M.S., and Ph.D. | UNIVERSITY OF CALIFORNIA, SAN DIEGO

09/2016-NOW

- Major: Computer Science and Engineering
- Ph.D. Graduation Expectation in 2024

## TECHNICAL STRENGTHS

**Language:** C/C++, Python, Java

**Tools:** OpenCV, PyTorch, OMPL, ROS, IsaacLab/Sim, Git, Docker, Gazebo, CopliaSim, Moveit!

**Preferred System:** Ubuntu(Linux)

## Publications

**Jiaming Hu**, Shrutheesh Iyer, Jiawei Wang, and Henrik I. Christensen (2024). Motion Planning in Foliated Manifolds using Repetition Roadmap Robotics: Science and Systems (RSS).

Shrutheesh Iyer, Anwesha Pal, **Jiaming Hu**, Akanimoh Adeleye, Aditya Aggarwal and Henrik I. Christensen (2023). Household navigation and manipulation for everyday object rearrangement tasks. International Conference on Robotic Computing (IRC).

**J. Hu**, Z. Tang, and H. Christensen, "Multi-Modal Planning on Regrasping for Stable Manipulation," 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems(IROS), 2023

**J. Hu**, A Adeleye, and H. Christensen, "Place-and-Pick-Based Re-grasping Using Unstable Placement," The International Symposium of Robotics Research, 2022

A. Adeleye, **J. Hu**, and H. Christensen, "Putting away the groceries with precise semantic placements," 2022 IEEE 18th International Conference on Automation Science and Engineering (CASE), 2022

**J. Hu**, and H. Christensen, "Rotational Slippage Minimization in Object Manipulation," 2022 IEEE 18th International Conference on Automation Science and Engineering (CASE), 2022

P Parashar, A Naik, **J Hu**, and H. Christensen, "A hierarchical model to enable plan reuse and repair in assembly domains," 2021 IEEE 17th International Conference on Automation Science and Engineering (CASE), 2021

## TEACHING EXPERIENCE

Introduction to Robotics, UCSD

10/2022-12/2022

- Being a teaching assistant and developing exercises for motion planning and SLAM on RB5 platform.

## PROJECT EXPERIENCE

### 1. Automatic Assembly System with UR5

9/2018-9/2019

Develop a complete-autonomous assembly system with UR5 arms and mainly work on

- 6D pose estimation and tracking system on parts.
- Closed-loop impedance control of assembly process.
- Behavior planning of assembly system for failure recovery.

For more information, please check the following papers:

"Lessons Learned Developing an Assembly System for WRS 2020 Assembly Challenge," arXiv:2103.15236, 2021

"Meta-Modeling of assembly contingencies and planning for repair," arXiv:2103.07544, 2021

"Pose estimation of specular and symmetrical objects," arXiv:2011.00372, 2020

### 2. Home-Robot for Rearrangement based on user preference

3/2023-now

Develop a rearranging system for in-door objects across multiple rooms and mainly work on

- System integration Fetch Robot Platform.
- Developed stable grasping planning.
- Developed complex manipulations such as drawer opening.

### 3. Constrained Motion Planning Integration in Moveit!

9/2022-12/2022

Modified the original Moveit! source code to support constrained motion planning and make it support with object in hand.