JIAMING HU

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EDUCATION

UNIVERSITY OF CALIFORNIA, SAN DIEGO (Expected Graduation Date: December, 2024)   **San Diego, CA**
B.S., M.S., and Ph.D. of Computer Science and Engineering   09/2016 - Current
MAIN RESEARCH FOCUS: Multi-Modal Motion Planning and Perception for Manipulation

PUBLICATIONS

- Shrutheesh Iyer, Anwesan 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, S. Iyer, and H. Christensen, "An Experience-based TAMP Framework for Foliated Manifolds," Under review, 2023
- 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, 252-267, 2022
- 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

PROJECTS

Automatic Assembly System with UR5   **09/2018 - 12/2019**

- Developed a complete-autonomous assembly system with UR5 arms and mainly worked on **pose estimation and tracking** on parts, **closed-loop impedance** control of assembly process, and **behavior planning 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

Home-Robot for Rearrangement based on user preference   **03/2023 - Current**

- Developed a rearranging system for in-door objects across multiple rooms and mainly work on **system integration** Fetch Robot Platform, stable **grasping prediction**, and **complex manipulations** such as drawer opening.

Constrained Motion Planning Integration in Moveit!   **06/2022 - 10/2022**

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

TEACHING EXPERIENCE

Teaching Assistant - Introduction to Robotics Course, UCSD   **09/2022 - 12/2022**

- Guided students to understand mathematical concept in tracking system.
- Developed exercises for motion planning and SLAM on RB5 platform.

TECHNICAL STRENGTHS

Language: C/C++, Python, Java
Tools: OpenCV, PyTorch, OMPL, ROS, Git, Docker, CMake, Gazebo, CoppliaSim, Moveit!, OpenGL, PCL, Open3D
Prefered System: Ubuntu (Linux)