Stanford

Yifan Hou

Postdoctoral Scholar, Electrical Engineering

Bio

BIO

I am a Post Doctoral researcher working with Prof. Shuran Song at Stanford Electric Engineering. Prior to joining Stanford, I spent three years as an Applied Scientist at Amazon Robotics working on the Stow project. I obtained my PhD and MS degrees from the Robotics Institute at Carnegie Mellon University, obtained BoE from the department of Automation at Tsinghua University. I had also spent time interning at Toyota Research Institute and MIT.

I work on robotic manipulation. I am currently interested in the intersection of data-driven visual motor policies and model based compliance control.

STANFORD ADVISORS

- Shuran Song, Postdoctoral Faculty Sponsor

LINKS

- Personal Website: https://yifan-hou.github.io/
- Old website: https://www.cs.cmu.edu/~yifanh/
- Google Scholar: https://scholar.google.com/citations?user=85D2bRgAAAAJ&hl=

Research & Scholarship

LAB AFFILIATIONS

- Shuran Song, REALab (3/18/2024)

Publications

PUBLICATIONS

- **SimPLE, a visuotactile method learned in simulation to precisely pick, localize, regrasp, and place objects** *SCIENCE ROBOTICS*
  Bauza, M., Bronars, A., Hou, Y., Taylor, I., Chavan-Dafle, N., Rodriguez, A.
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- **Extrinsic Dexterous Manipulation with a Direct-drive Hand: A Case Study**
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- **Manipulation with Suction Cups Using External Contacts**
  Cheng, X., Hou, Y., Mason, M. T.
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- **Contact Mode Guided Motion Planning for Quasidynamic Dexterous Manipulation in 3D**
  Cheng, X., Huang, E., Hou, Y., Mason, M. T., IEEE
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- **An Efficient Closed-Form Method for Optimal Hybrid Force-Velocity Control**
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- **Contact Mode Guided Sampling-Based Planning for Quasistatic Dexterous Manipulation in 2D**
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- **Robust Planar Dynamic Pivoting by Regulating Inertial and Grip Forces** *Workshop on Algorithmic Foundations of Robotics*
  Hou, Y., Jia, Z., Mason, M. T.
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- **Manipulation with Shared Grasping**
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- **Pushing revisited: Differential flatness, trajectory planning, and stabilization** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
  Zhou, J., Hou, Y., Mason, M. T.
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- **Robust Execution of Contact-Rich Motion Plans by Hybrid Force-Velocity Control**
  Hou, Y., Mason, M. T., IEEE
  edited by Howard, A., Althoefer, K., Arai, F., Arrichiello, F., Caputo, B., Castellanos, J., Hauser, K., Isler, Kim, J., Liu, H., Oh, P., Santos, Scaramuzza, D., Ude, A., Voyles, R., Yamane, K., Okamura, A.
  IEEE.2019: 1933-1939
- **Criteria for Maintaining Desired Contacts for Quasi-Static Systems**
  Hou, Y., Mason, M. T., IEEE
  IEEE.2019: 6555-6561
- **Fast Planning for 3D Any-Pose-Reorienting Using Pivoting** *IEEE International Conference on Robotics and Automation (ICRA)*
  Hou, Y., Jia, Z., Mason, M. T.
  2018
- **Follow My Step: A Framework for Biped Robots to Imitate Human Walking**
  Hou, Y., Zhao, M., IEEE
  IEEE.2014: 2471-2476