WEIYU LIU

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RESEARCH INTEREST

My research focuses on semantic reasoning for robotics, including leveraging knowledge extraction, representation, and reasoning to facilitate robotic operations in diverse real-world environments.

EDUCATION

Georgia Institute of Technology, Atlanta, GA   2017 – Present
Ph.D. in Robotics
Advisor: Sonia Chernova

Georgia Institute of Technology, Atlanta, GA   2012 – 2017
Bachelor of Science, Electrical Engineering with Distinction
GPA: 3.96

RESEARCH EXPERIENCE

Georgia Institute of Technology, Atlanta, GA   2017 – Present
Graduate Research Assistant

Georgia Institute of Technology, Atlanta, GA   2016 – 2017
Undergraduate research with Prof. Sonia Chernova

Georgia Institute of Technology, Atlanta, GA   2014 – 2016
Undergraduate research with Prof. Fumin Zhang

PUBLICATIONS

Preprints

- A Survey of Semantic Reasoning Frameworks for Robotic Systems
  Weiyu Liu, Angel Daruna, and Sonia Chernova.
  Under review, 2020

- Same Object, Different Grasps: Data and Semantic Knowledge for Task-Oriented Grasping
  Adithya Murali, **Weiyu Liu**, Kenneth Marino, Sonia Chernova, and Abhinav Gupta.
  Under review, 2020

- Leveraging Semantics for Incremental Learning in Multi-Relational Embeddings
  Angel Daruna, **Weiyu Liu**, Zsolt Kira, and Sonia Chernova.
  arXiv, 2019

Conference and Journal Papers

- CAGE: Context-Aware Grasping Engine
  Weiyu Liu, Angel Daruna, and Sonia Chernova.
  International Conference on Robotics and Automation (ICRA), 2020.

- Path Ranking with Attention to Type Hierarchies

Weiyu Liu, Angel Daruna, Zsolt Kira, and Sonia Chernova.
Conference on Artificial Intelligence (AAAI), 2020.

- Taking Recoveries to Task: Recovery-Driven Development for Recipe-based Robot Tasks
  Siddhartha Banerjee, Angel Daruna, David Kent, **Weiyu Liu**, Jonathan Balloch, Abhinav Jain, Akshay Krishnan, Muhammad Asif Rana, Harish Ravichandar, Binit Shah, Nithin Shrivatsav, and Sonia Chernova.
  International Symposium on Robotics Research (ISRR), 2019.

- Autonomous flying blimp interaction with human in an indoor space
  Ningshi Yao, Qiuyang Tao, **Weiyu Liu**, Zhen Liu, Ye Tian, Peiyu Wang, Timothy Li, and Fumin Zhang.
  Frontiers of Information Technology & Electronic Engineering, 20, 2019.

- RoboCSE: Robot Common Sense Embedding
  Angel Daruna, **Weiyu Liu**, Zsolt Kira, and Sonia Chernova.
  International Conference on Robotics and Automation (ICRA), 2018.

- SiRoK: Situated Robot Knowledge - Understanding the Balance Between Situated Knowledge and Variability
  Sonia Chernova, Vivian Chu, Angel Daruna, Haley Garrison, Meera Hahn, Priyanka Khante, **Weiyu Liu**, and Andrea Thomaz.
  AAAI Spring Symposium Series (AAAI-SSS), 2018.

- Situated Bayesian Reasoning Framework for Robots Operating in Diverse Everyday Environments
  Sonia Chernova, Vivian Chu, Angel Daruna, Haley Garrison, Meera Hahn, Priyanka Khante, **Weiyu Liu**, and Andrea Thomaz.
  International Symposium on Robotics Research (ISRR), 2017.

Teaching Experience

Georgia Institute of Technology, Atlanta, GA   Spring 2018
Graduate Teaching Assistant
CS 3630 Introduction to Robotics and Perception, Instructor: Prof. Sonia Chernova

Georgia Institute of Technology, Atlanta, GA   Fall 2014
Peer Tutor
Learning Assistance Program, Best Tutor Award

LEADERSHIP and PROFESSIONAL SERVICE

Georgia Institute of Technology, *Vice President Academic, RoboGrads*   2019 – 2020
Reviewer: ICRA   2019

AWARDS and HONORS

Fetch it! The Mobile Manipulation Challenge, *First Place*   2019
Georgia Institute of Technology, *Dean's List*   2012 – 2017