# 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 robot operation in diverse and changing environments, such as hospitals and homes.

## 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

## 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

- 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