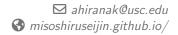
# Ayano Hiranaka

## Curriculum Vitae



#### Research Interests

My research interest lies in developing robots that communicate and collaborate effectively with humans to increase the quality of human lives, while also evolving alongside humans. I am passionate to develop robots with human-like, generalizable understanding of the world, ability to learn through human interactions, versatile manipulation and mobility capabilities, and safe and friendly behaviors.

#### Education

2024-current PhD in Computer Science, University of Southern California

2021–2023 MS in Mechanical Engineering, Stanford University

GPA: 4.02/4.30

2016–2019 **BS in Mechanical Engineering**, University of Illinois at Urbana-Champaign

GPA: 3.98/4.00, Graduation with Highest Honors

#### Conference Publications

\*: denotes equal contribution, †: denotes equal contribution, alphabetically ordered

aper Human-Feedback Efficient Reinforcement Learning for Online Diffusion Model Finetuning

Ayano Hiranaka\*, Shang-Fu Chen\*, Chieh-Hsin Lai\*, Dongjun Kim, Naoki Murata, Takashi

Shibuya, Wei-Hsiang Liao, Shao-Hua Sun\*\*, Yuki Mitsufuji\*\*

International Conference on Learning Representations (ICLR), 2025

paper NOIR: Neural Signal Operated Intelligent Robots for Everyday Activities

website Ruohan Zhang\*, Sharon Lee\*, Minjune Hwang\*, **Ayano Hiranaka\***, Chen Wang, Wensi Ai, Jin Jie Ryan Tan, Shreya Gupta, Yilun Hao, Gabrael Levine, Ruohan Gao, Anthony Norcia, Li Fei-Fei,

Jiajun Wu

Conference on Robot Learning (CoRL), 2023

paper Primitive Skill-based Robot Learning from Human Evaluative Feedback

website Ayano Hiranaka<sup>†</sup>, Minjune Hwang<sup>†</sup>, Sharon Lee, Chen Wang, Li Fei-Fei, Jiajun Wu, Ruohan

Zhang

International Conference on Intelligent Robots and Systems (IROS), 2023

paper A Dual Representation Framework for Robot Learning with Human Guidance

website Ruohan Zhang\*, Dhruva Bansal\*, Yilun Hao\*, **Ayano Hiranaka**, Jialu Gao, Chen Wang, Roberto

Martin-Martin, Li Fei-Fei, Jiajun Wu

Conference on Robot Learning (CoRL), 2022

Best paper award at Aligning Robot Representations with Humans workshop

## Research Experiences

#### Dec 2023 - Sony Al Deep Generative Model Team Research Intern

Nov 2024 Sony AI (Tokyo, Japan)

- Investigating human-feedback-efficient RLHF algorithm for text-to-image diffusion model finetuning
- Algorithm can train a model for various tasks while simultaneously capturing human preference

#### Mar 2021 - Stanford Vision and Learning Lab Graduate Research Assistant

Dec 2023 Stanford University (Stanford CA, USA)

- O Led real robot experiments in multiple human-robot collaboration projects
- Experience with a wide array of physical robots, including mobile manipulators (Sawyer, Franka, TIAGo)
- Experiences in human-in-the-loop robot learning, reinforcement learning, imitation learning, motion planning, brain-robot-interface

#### Sep 2019 - Machine Tool Systems Research Lab Undergraduate Researcher

Dec 2019 University of Illinois at Urbana-Champaign (Champaign IL, USA)

- Investigated the effect of atomization-based cutting fluid (ACF) spray angle and distance on tool life during micro-drilling operations
- O Developed a program to automatically record drill measurements from images

### Sep 2018 - Mehta Research Group Undergraduate Researcher

Jun 2019 University of Illinois at Urbana-Champaign (Champaign IL, USA)

 Developed an adaptive particle filter algorithm for real-time identification of piano note pitch (change in pitch identified within 0.25 sec)

# Teaching Experiences

Winter 2022 ENGR 110/210: Perspectives in Assistive Technology, Stanford University

Graduate Teaching Assistant

Fall 2021 **ME 161: Dynamic Systems, Vibrations and Control**, Stanford University Graduate Teaching Assistant

#### Honors and Awards

May 2020 Bronze Tablet Recipient, University of Illinois at Urbana-Champaign

Awarded to students who rank in the top three percent of their graduating class

Dec 2019 Graduation with Highest Honors, University of Illinois at Urbana-Champaign

#### Skills

**Programming Languages:** Python, C++, C#, C, Java, MATLAB, HTML/CSS

**Al:** Human-in-the-loop learning, HRC, shared autonomy, hierarchical learning, RL, IL, diffusion models

Hardwares: Franka, Sawyer, TIAGo

Robotics: ROS, controls, mobile manipulation, task and motion planning, camera calibration

Libraries: PyTorch, OpenCV, OMPL, NumPy

Softwares: 3D modeling (Creo, SolidWorks, Blender), Gazebo, OmniGibson, robosuite