

Ayano Hiranaka

Curriculum Vitae

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Research Interests

I study how humans and AI agents, embodied and non-embodied, can “co-evolve” through effective communication and collaboration. My work focuses on designing learning processes in which agents learn from humans while also helping humans learn, enabling mutual adaptation, shared understanding, and long-term growth in human–AI teams.

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

Publications

*: denotes equal contribution, †: denotes equal advising

[paper](#) **Active Reward Learning and Iterative Trajectory Improvement from Comparative Language Feedback**

[website](#) Eisuke Hirota*, Zhaojing Yang*, Ayano Hiranaka, Miru Jun, Jeremy Tien, Stuart J. Russell, Anca Dragan, Erdem Biyik
The International Journal of Robotics Research (IJRR), 2025

[paper](#) **HERO: Human-Feedback-Efficient Reinforcement Learning for Online Diffusion Model Finetuning**

[website](#) 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, Gabriel 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](#) Minjune Hwang*, Ayano Hiranaka*, 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 AI Deep Generative Model Team Research Intern**

Nov 2024 *Sony AI (Tokyo, Japan)*

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

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

Dec 2023 *Stanford University (Stanford CA, USA)*

- Led real robot experiments in multiple human-robot collaboration projects
- Experience with 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 effect of atomization-based cutting fluid (ACF) spray angle and distance on tool life during micro-drilling operations

Sep 2018 - **Mehta Research Group Undergraduate Researcher**

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

- Developed adaptive particle filter algorithm for real-time piano note pitch identification

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*

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

Services

Reviewing: I serve as a reviewer for CoRL, ICLR, and workshops at RSS

Mentoring: Organizing and serving as mentor for USC CS Undergraduate Mentorship Program that prepare undergraduate students for CS research and career

Skills

AI: Human-in-the-loop learning, human-AI-interaction, HRI, HRC, shared autonomy, hierarchical learning, RL, IL, diffusion models, representation learning, AI teaching

Hardwares: Franka, Sawyer, TIAGo, WidowX

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

Languages: Japanese (speak, read, write fluently)