Irene Hou

irenehou00@gmail.com — LinkedIn: irenehou1 — San Diego, CA

My research focuses on democratizing learning and creativity with AI. *I study how large language models (LLMs) and AI-driven systems in disciplines such as computing and design can improve learning and critical thinking, while ensuring participatory and equitable access for all. These systems serve both as solutions and tools to understand learner behavior, pedagogical efficacy, and human-AI collaboration nuances.*

Research interests: *HCI, human-centered AI, LLMs, participatory AI, non-experts, support tools*

EDUCATION

University of California, San Diego — 2024 – Present
Ph.D. in Cognitive Science, Human-Computer Interaction

University of California, San Diego — 2018 – 2022
B.S. in Cognitive Science w/ Design and Interaction Spec.,
Minor in Computer Science — *cum laude*

RESEARCH

Temple HCI Lab, Temple University — 2023 – Present
Research Lead (Advisor: Stephen MacNeil) — *Philadelphia, PA*

- Designed and conducted study on effects of generative AI on computing student help-seeking preferences
- Designed and conducted studies on image capabilities of multi-modal LLMs with programming problems
- Presented 2 talks on published research at ACE '24 at the University of New South Wales

ProtoLab, UC San Diego — 2021 – 2022
Undergraduate Researcher — *La Jolla, CA*

- Designed for CoBoards, a digital whiteboard system that extracts design data/offers computational support
- Designed study and prototype to examine implicit/explicit pacing of team progress during virtual design workshops

Comparative Cognition Lab, UC San Diego — 2021
Research Assistant — *La Jolla, CA*

- Designed interface w/ Figma/PyQT5 for ML Behavioral Encoding Expanded Viewer
- Tested behavioral encoding web-app/created bug reports that improved user flow and accessibility

PUBLICATIONS

[1] **Hou, I.**, Mettille, S., Li, Z., Man, O., Zastudil, C., & MacNeil, S. *The Effects of Generative AI on Introductory Students' Help-Seeking Preferences.* ACE '24.

[2] **Hou, I.**, Man, O., Angelikas, K., Gutierrez, S., Mettille, S., & MacNeil, S. *More Robots are Coming: Evaluating GPT-4V Image Capabilities in Solving Visually Diverse Parsons Problems.* ACE '24.

[3] Gutierrez, S., **Hou, I.**, Angelikas, K., Man, O., & MacNeil, S. *Large Multimodal Model Performance on Diverse Graph and Tree Structure Tasks.* ACM Transactions on Computing Education 2024. (Manuscript in preparation)

AWARDS

CES 2023 Innovation Honoree, Smart Home category — Jan 2023
UX Lead · FluentPet Connect

CitrusHack '21 Best UI/UX Hack (500 hackers) — Apr 2021
Product Lead · Nudge (app)

Bronze Medalist in National eLit Illuminary Awards — Jan 2015
Author · *Snowspirit: The Virgo Key*

WORK EXPERIENCE

FluentPet — 2022 – 2023
UX Lead — *San Jose, CA*

- Managed team of designers and oversaw end-to-end design, from rapid prototyping to final build and launch of connected hardware device FluentPet Connect
- Developed and launched automated user feedback system, cutting annual costs by $18,000
- Launched Connect with 72% active daily app users and 78.7% active weekly users, with 58,000 weekly interactions

FluentPet — 2021 – 2022
UX Design Intern — *La Jolla, CA*

- Led design of AWS IoT device onboarding with Bluetooth/Wi-Fi integration
- Designed and published leading curriculum on teaching animal communication via buttons

SONY — 2020
Curriculum Designer — *San Diego, CA*

- Designed for connected hardware coding robotics program, implemented in 25+ classes and used to train incoming teachers

Snowspirit: The Virgo Key — 2013 – 2018
Author — *San Diego, CA*

- End-to-end release: storyboarded, wrote manuscripts, fundraised, designed web interface, coordinated press release, headed guest speaker events with 2,000 attendees, and organized signing events and distribution

Booknection Creative Writing Summer Camp — 2017
Founder — *San Diego, CA*

- Founded creative writing camp for students by pitching to local academies, designing original curriculum, allocating initial funding, marketing, and directing classes

TEACHING

UC San Diego, Cognitive Science — 2021 – 2022
Instructional Assistant — *La Jolla, CA*

- Data-Driven UX/Product Design (Winter 2022)
  - IA-led course, designed lectures and discussions
  - 100% student recommendation rate
- Field Methods: Studying Cognition in the Wild (Spring 2021)
  - 100% student recommendation rate

Grace Academy + All-Star Academy — 2017 – 2021
Courses designed (curriculum, assessments, etc.) and taught — *San Diego, CA*

- Computational Thinking (2021, 2020)
- Robotics with SONY KOOV (2020)
- Programming with Python (2020, 2019)
- Robotics with Makeblock Codey Rocky (2020, 2019)
- Introduction to Robotics with mBlock (2018, 2019)
- Introduction to Scratch (2018)
- Creative Writing (2017)

LANGUAGES AND SKILLS

English (native), Mandarin (fluent)
Figma, Python, R, Java, C/C++, Javascript, CSS/HTML, MATLAB, LaTeX, Github/Git, Adobe Suite