

# Irene Hou

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Cognitive Science Department

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<https://houirene.github.io>

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RESEARCH INTERESTS      Human-Computer Interaction, Human-Centered AI, participatory AI, computing pedagogy, computing for non-experts

EDUCATION      **University of California, San Diego**      2024 – Present  
Ph.D. in Cognitive Science, Human-Computer Interaction  
Design Lab — Advisor: Philip Guo

**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 – 2024  
**Research Lead** — Advisor: Stephen MacNeil  
*Philadelphia, PA*

- Supervised 3 teams and 10 undergraduates to publish on topics of generative AI and computing education
- Designed and conducted studies on effects of generative AI on computing student help-seeking [1, 4]
- Designed and conducted studies on image capabilities of multi-modal LLMs with programming problems [2, 3]

**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] **Irene Hou**, Sophia Mettelle, Owen Man, Zhuo Li, Cynthia Zastudil, and Stephen MacNeil. 2024. *The Effects of Generative AI on Computing Students' Help-Seeking Preferences*. 26th Australasian Computing Education Conference (ACE '24). Association for Computing Machinery, New York, NY, USA, 39–48. [Google Scholar citations: 24]

[2] **Irene Hou**, Owen Man, Sophia Mettelle, Sebastian Gutierrez, Kenneth Angelikas, and Stephen MacNeil. 2024. *More Robots are Coming: Large Multimodal Models (ChatGPT) can Solve Visually Diverse Images of Parsons Problems*. 26th Australasian Computing Education Conference (ACE '24). Association for Computing Machinery, New York, NY, USA, 29–38. [Google Scholar citations: 15]

[3] Sebastian Gutierrez, **Irene Hou**, Kenneth Angelikas, Owen Man, and Stephen MacNeil. *Large Multimodal Model Performance on Diverse Graph and Tree Structure Tasks*. ACM Transactions on Computing Education 2025 (TOCE '25). (*Manuscript in preparation*)

[4] **Irene Hou**, Hannah V. Nguyen, Owen Man, and Stephen MacNeil. 2025. *The Evolving Usage of GenAI by Computing Students*. ACM Technical Symposium on Computer Science Education (SIGCSE '25). (*Poster, in submission*)

TALKS	<p><b>Raspberry Pi Foundation</b> — United Kingdom (remote) Seminar: Generative AI is changing undergraduate education; and undergraduate research too!</p> <p><b>Australasian Computing Education '24</b> — Sydney, AU Conference talk: The Effects of Generative AI on Computing Students' Help-Seeking Preferences</p> <p><b>Australasian Computing Education '24</b> — Sydney, AU Conference talk: More Robots are Coming: Large Multimodal Models (ChatGPT) can Solve Visually Diverse Images of Parsons Problems</p>	<p>May 2024</p> <p>Feb 2024</p> <p>Feb 2024</p>
MENTORSHIP	<p><b>Students I have supervised in research or mentored</b></p> <p>UNDERGRADUATES</p> <ul style="list-style-type: none"> <li>- <b>Alexander Yu</b>, UC San Diego</li> <li>- <b>Sophia Mettille</b>, Temple University - [1, 2]</li> <li>- <b>Owen Man</b>, De Anza Community College, CS MS @CSU San Marcos - [1, 2, 3, 4]</li> <li>- <b>Kenneth Angelikas</b>, Temple University - [2, 3]</li> <li>- <b>Sebastian Gutierrez</b>, Temple University - [2, 3]</li> <li>- <b>Leili Massoum Zadeh</b>, Temple University</li> <li>- <b>Hannah Vy Nguyen</b>, Temple University [4]</li> <li>- <b>Brandson Trinh</b>, De Anza Community College, Data Science @UC San Diego</li> <li>- <b>Ben Nguyen</b>, Temple University</li> <li>- <b>Srishty Muthusekaran</b>, Temple University</li> </ul> <p>GRADUATES</p> <ul style="list-style-type: none"> <li>- <b>Zhuo Li</b>, Temple University - [1]</li> </ul>	
AWARDS	<p><b>CES 2023 Innovation Honoree</b>, Smart Home category UX Lead · FluentPet Connect</p> <p><b>CitrusHack '21 Best UI/UX Hack</b> (500 hackers) Product Lead · Nudge (app)</p> <p><b>Bronze Medalist in National eLit Illuminary Awards</b> Author · <i>Snowspirit: The Virgo Key</i></p>	<p>Jan 2023</p> <p>Apr 2021</p> <p>Jan 2015</p>
WORK EXPERIENCE	<p><b>FluentPet</b> <b>UX Lead</b></p> <ul style="list-style-type: none"> <li>• Managed team of designers and oversaw end-to-end design, build, and launch of connected hardware device FluentPet Connect</li> <li>• Developed and launched automated user feedback system, cutting annual costs by \$18,000</li> <li>• Launched Connect with 72% active daily app users and 78.7% active weekly users, with 58,000 weekly interactions</li> </ul>	<p>2022 – 2023 <i>San Jose, CA</i></p>

	<b>FluentPet</b> <b>UX Design Intern</b> <ul style="list-style-type: none"> <li>• Led UX design of AWS IoT device onboarding with Bluetooth and Wi-Fi integration</li> <li>• Designed and published leading curriculum on teaching animal communication via buttons</li> </ul>	2021 – 2022 <i>La Jolla, CA</i>
	<b>SONY</b> <b>Curriculum Designer</b> <ul style="list-style-type: none"> <li>• Designed for connected hardware coding robotics program and courses, used to train 25+ incoming teachers and delivered to 300+ students</li> </ul>	2020 <i>San Diego, CA</i>
	<b>Snowspirit: The Virgo Key</b> <b>Author</b> <ul style="list-style-type: none"> <li>• 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</li> </ul>	2013 – 2018 <i>San Diego, CA</i>
	<b>Booknection Creative Writing Summer Camp</b> <b>Founder</b> <ul style="list-style-type: none"> <li>• Founded creative/science-fiction writing camp by pitching to local academies, designing original curriculum, allocating initial funding, marketing, and directing classes</li> </ul>	2017 <i>San Diego, CA</i>
TEACHING	<b>UC San Diego, Cognitive Science</b> <b>Instructional Assistant</b> <ul style="list-style-type: none"> <li>• Data-Driven UX/Product Design (Winter 2022) <ul style="list-style-type: none"> <li>- IA-led course, designed lectures and discussions</li> <li>- 100% student recommendation rate</li> </ul> </li> <li>• Field Methods: Studying Cognition in the Wild (Spring 2021) <ul style="list-style-type: none"> <li>- 100% student recommendation rate</li> </ul> </li> </ul>	2021 – 2022 <i>La Jolla, CA</i>
	<b>Grace Academy, Starton EDU, All-Star Academy</b> <b>Courses designed/taught (curriculum, assessments, etc.)</b> <ul style="list-style-type: none"> <li>• Computational Thinking (2021, 2020)</li> <li>• Robotics with SONY KOOV (2020)</li> <li>• Programming with Python (2020, 2019)</li> <li>• Robotics with Makeblock Codey Rocky (2020, 2019)</li> <li>• Introduction to Physics (2020, 2019)</li> <li>• Programming with mBlock (2018, 2019)</li> <li>• Introduction to Robotics with mBlock (2018, 2019)</li> <li>• Introduction to Scratch (2018, 2019)</li> <li>• Creative Writing (2017, 2018)</li> </ul>	2017 – 2021 <i>San Diego, CA</i>