

# Hao Li

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## RESEARCH INTERESTS

Advancing robotics to achieve human-level learning and adaptability.  
Designing bio-inspired tactile sensors for enhanced robotic perception.  
Leveraging multisensory integration for robust robot learning and control.  
Developing human-centered AI to augment and collaborate with humans.  
Creating sim-to-real frameworks for efficient robotic learning transfer.

## EDUCATION

**Stanford University**, Stanford, CA, USA

*Ph.D.* Candidate in Mechanical Engineering, Robotics 2023 – Present

*Adviser: Prof. Mark Cutkosky*

*M.S.* in Mechanical Engineering, Robotics & Control Track 2021 – 2023

*Adviser: Prof. Fei-Fei Li, Prof. Jiajun Wu*

**Purdue University**, West Lafayette, IN, USA

*B.S.* in Mechanical Engineering 2019 – 2021

*Adviser: Prof. Karthik Ramani*

**Shanghai Jiao Tong University**, Shanghai, China

*B.S.* in Mechanical Engineering 2017 – 2019

*Tsien Hsue-Shen Honor Program*

## AFFILIATIONS

*Member, Stanford Center for Design Research (CDR)*

*Member, Biomimetics & Dexterous Manipulation Lab (BDML)*

*Professional Member, Association for Computing Machinery (ACM)*

## PUBLICATIONS

(\*Indicate Equal Contribution)

- [1] **Li, H.\***, Xing, C.\*, Khan, S., Zhong, M., & Cutkosky, M. R. (2024). Whisker-Inspired Tactile Sensing: A Sim2Real Approach for Precise Underwater Contact Tracking. *IEEE Robotics and Automation Letters* (2024): Under Review.
- [2] Lin, M.A., **Li, H.**, Xing, C., & Cutkosky, M. (2024). Navigation and 3D Surface Reconstruction from Passive Whisker Sensing. *The International Journal of Robotics Research* (2024): Under Review.
- [3] Wei, Y.L., Jiang, J.J., Xing, C., Tan, X., Wu, X.M., **Li, H.**, Cutkosky, M., & Zheng, W.S. (2024). Grasp as You Say: Language-guided Dexterous Grasp Generation. In *38th Annual Conference on Neural Information Processing Systems*.

- [4] Ipsita, A.\*, Duan, R.\*, **Li, H.\***, Chidambaram, S., Cao, Y., Liu, M., Quinn, A., & Ramani, K. (2023). The Design of a Virtual Prototyping System for Authoring Interactive Virtual Reality Environments From Real-World Scans. *ASME Journal of Computing and Information Science in Engineering*, March 2024; 24(3): 031005.
- [5] Gao, R.\*, Dou, Y.\*, **Li, H.\***, Agarwal, T., Bohg, J., Li, Y., Fei-Fei, L., & Wu, J. (2023). The OBJECTFOLDER BENCHMARK: Multisensory Object-Centric Learning with Neural and Real Objects. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition*.
- [6] Gao, R.\*, **Li, H.\***, Dharan, G., Wang, Z., Li, C., Xia, F., Savarese, S., Fei-Fei, L., & Wu, J. (2023). SONICVERSE: A Multisensory Simulation Platform for Embodied Household Agents that See and Hear. In *2023 IEEE International Conference on Robotics and Automation*.
- [7] **Li, H.\***, Zhang, Y.\*, Zhu, J., Wang, S., Lee, M.A., Xu, H., ... & Wu, J. (2022). See, Hear, and Feel: Smart Sensory Fusion for Robotic Manipulation. In *6th Annual Conference on Robot Learning*.
- [8] Ipsita, A., **Li, H.**, Duan, R., Cao, Y., Chidambaram, S., Liu, M., & Ramani, K. (2021). VRFromX: From Scanned Reality to Interactive Virtual Experience with Human-in-the-Loop. In *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems* (pp. 1-7).

## **AWARDS & SCHOLARSHIPS**

### Awards

- Human-Centered AI (HAI) Seed Grant, Stanford University 2024  
Awarded \$75,000 for advancing interdisciplinary research in human-centered AI

### Scholarships

- Zhulong Innovation Fellowship 2023
- Academic Advancing Scholarship, Shanghai Jiao Tong University 2020
- Howard L. Timms Scholarship, Purdue University 2020
- Dean's List & Semester Honors, Purdue University 2020
- School of ME Scholarship, Shanghai Jiao Tong University 2018 – 2019

## **SERVICES**

### Conference Reviewer

- International Conference on Robotics & Automation (ICRA), 2025
- International Conference on Learning Representations (ICLR), 2025
- Conference on Robot Learning (CoRL), 2023, 2024
- Conference on Human Factors in Computing Systems (CHI), 2024

### Journal Reviewer

- IEEE Robotics and Automation Letters (RA-L)

### Seminar Organizer

- Stanford Robotics Seminar

<b>TEACHING</b>	<b>Course Assistant, Stanford University</b>	Spring 2023
	CS231N: Deep Learning for Computer Vision	
	<b>Course Assistant, Stanford University</b>	Fall 2022
	AA274A: Principle of Robot Autonomy	
<b>MENTORSHIP</b>	<b>Stanford University</b>	2021 – Present
	<u>Undergraduate Student Mentor</u>	
	<ul style="list-style-type: none"> <li>▪ Saad Khan</li> </ul>	
	<u>Graduate Student Mentor</u>	
	<ul style="list-style-type: none"> <li>▪ Chengyi Xing, Miaoya Zhong, Yizhao Hou, Tianyu Tu</li> </ul>	
<b>PRESS COVERAGE</b>	<b>Columbia Broadcasting System (CBS)</b>	2024
	<ul style="list-style-type: none"> <li>▪ Stanford Robotics Center to develop new technology across wide range of fields.</li> </ul>	
	<b>San Francisco Chronicle</b>	2024
	<ul style="list-style-type: none"> <li>▪ Stanford lab is pioneering robots to help with everything from chores to home medical care</li> </ul>	
	<b>Stanford University</b>	2024
<ul style="list-style-type: none"> <li>▪ Tour state-of-the-art Stanford Robotics Center</li> </ul>		
	<b>Columbia Broadcasting System (CBS)</b>	2024
	<ul style="list-style-type: none"> <li>▪ Stanford students brainstorm new tools to explore Mars</li> </ul>	
<b>SKILLS</b>	<b>Real Robot Experience:</b>	
	<ul style="list-style-type: none"> <li>▪ Flexiv Rizon 4 Arm, Franka Emika Panda Arm, Turtlebot</li> </ul>	
	<b>Design and Prototyping:</b>	
	<ul style="list-style-type: none"> <li>▪ OnShape, SOLIDWORKS, Unity, ANSYS, Pybullet, ROS</li> </ul>	
	<b>Programming:</b>	
<ul style="list-style-type: none"> <li>▪ Python, C#, C++, Arduino, LaTeX</li> </ul>		

[CV compiled on 2024-11-19]