XIAOFENG GAO

◇ *Website:* https://xfgao.github.io/ ◇ *E-mail:* xfgao@g.ucla.edu

EDUCATION

University of California, Los Angeles, CA, USA — *Sep. 2017 - Jun. 2022*
Ph.D. in Statistics — Advisor: **Song-Chun Zhu**

Fudan University, Shanghai, China — *Sep. 2013 - Jun. 2017*
B.Eng. in Electronic Engineering — Overall GPA: 3.88/4.00; Ranking: **1/221**

EXPERIENCE

Amazon AGI — *Aug. 2022 - Present*
Applied Scientist — Supervisors: Sriram Venkatapathy, Yadunandana Rao

Work on the Alexa Prize SimBot Challenge and multi-modal large language model

Honda Research Institute USA — *Jan. 2021 - Jun. 2021*
Research Intern — Supervisors: Xingwei Wu, Teruhisa Misu

Study the effects of AR interface on drivers' object-wise situational awareness in autonomous vehicles
Implement an AR-based user interface in a driving simulator based on Unreal Engine 4
Design a novel SAGAT protocol with temporal variations to measure the driver's situational awareness
Analyze the effect of AR interface in different conditions, e.g. object types, locations and traffic density

Center for Vision, Cognition, Learning, and Autonomy, UCLA — *Sep. 2017 - Jun. 2022*
Graduate Student Researcher — Advisor: Song-Chun Zhu

Dissertation: Bidirectional Mental State Alignment for Human-Machine Collaboration

PUBLICATIONS

(* indicates equal contribution)

CF Yang, H Xu, TL Wu, **X Gao**, KW Chang, F Gao. Planning as In-Painting: A Diffusion-Based Embodied Task Planning Framework for Environments under Uncertainty. *arXiv preprint arXiv:2312.01097.*

J. Li, Q. Gao, M. Johnston, **X. Gao**, X. He, S. Shakiah, H. Shi, R. Ghanadan, W. Wang. Mastering Robot Manipulation with Multimodal Prompts through Pretraining and Multi-task Fine-tuning. *The Forty-first International Conference on Machine Learning (ICML), 2024.*

Y. Zhang, Z. Ma, **X. Gao**, S. Shakiah, Q. Gao, J. Chai. GROUNDHOG: Grounding Large Language Models to Holistic Segmentation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024.*

Q. Gao*, G. Thattai*, S. Shakiah*, **X. Gao***, S. Pansare, V. Sharma, G. Sukhatme, et al. Alexa arena: A User-centric Interactive Platform for Embodied AI. *The Thirty-seventh Conference on Neural Information Processing Systems (NeurIPS), 2023.*

R. Gong, **X. Gao**, Q. Gao, S. Shakiah, G. Thattai, G. Sukhatme. LEMMA: Learning Language-Conditioned Multi-Robot Manipulation. *IEEE Robotics and Automation Letters (RA-L), 2023.*

H. Shi, L. Ball, G. Thattai, D. Zhang, L. Hu, Q. Gao, S. Shakiah, **X. Gao**, et al. Alexa, play with robot: Introducing the first Alexa Prize SimBot Challenge on embodied AI. *arXiv preprint arXiv:2308.05221.*

R. Gong, J. Huang, Y. Zhao, H. Geng, **X. Gao**, Q. Wu, W. Ai, Z. Zhou, et al. ARNOLD: A Benchmark for Language-Grounded Task Learning With Continuous States in Realistic 3D Scenes. *IEEE International Conference on Computer Vision (ICCV), 2023.*

L. Yuan*, **X. Gao***, Z. Zheng*, M. Edmonds, Y. Wu, F. Rossano, H. Lu, Y. Zhu, S.-C. Zhu. In-situ Bidirectional Human-Robot Value Alignment. *Science Robotics, 2022.*

X. Gao, Q. Gao, R. Gong, K. Lin, G. Thattai, G. Sukhatme. DialFRED: Dialogue-Enabled Agents for Embodied Instruction Following. *IEEE Robotics and Automation Letters (RA-L), 2022.*

X. Gao, X. Wu, S. Ho, T. Misu, K. Akash. Effects of Augmented-Reality-Based Assisting Interfaces on Drivers' Object-wise Situational Awareness in Highly Autonomous Vehicles. *IEEE Intelligent Vehicles Symposium (IV), 2022.*

X. Gao, L. Yuan, T. Shu, H. Lu and S.-C. Zhu. Show Me What You Can Do: Capability Calibration on Reachable Workspace for Human-Robot Collaboration. *IEEE Robotics and Automation Letters (RA-L), 2022.*

Z. Nan, J. Jiang, **X. Gao**, S. Zhou, W. Zuo, W. Ping, N. Zheng. Predicting Task-driven Attention via Integrating Bottom-up Stimulus and Top-down Guidance. *IEEE Transactions on Image Processing (T-IP), 2021.*

X. Gao*, R. Gong*, Y. Zhao, S. Wang, T. Shu, and S.-C. Zhu. Joint Mind Modeling for Explanation Generation in Complex Human-Robot Collaborative Tasks. *IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), 2020.*

X. Gao, R. Gong, T. Shu, X. Xie, S. Wang, and S.-C. Zhu. VRKitchen: an Interactive 3D Virtual Environment for Task-oriented Learning. *arXiv preprint arXiv:1903.05757.*

T. Shu, **X. Gao**, M. S. Ryoo, and S.-C. Zhu. Learning Social Affordance Grammar from Videos: Transferring Human Interactions to Human-Robot Interactions. *IEEE International Conference on Robotics and Automation (ICRA), 2017.*

SELECTED AWARDS & HONORS

Shanghai Outstanding Graduate, Shanghai Municipal Education Commission *Jun. 2017*
Shanghai Government Scholarship, Shanghai Municipal Education Commission *Nov. 2016*
First Prize, China Undergraduate Mathematical Modeling Contest *Nov. 2015*

PROFESSIONAL SERVICE

Journal Reviewer: UMUAI (2021-2022), RA-L (2022-2024), The Proceedings of the IEEE (2023)
Conference Reviewer: IROS (2019), IEEE VR (2020), ICRA (2020-2024), HRI (2020), ISMAR (2022), AAAI (2021), RSS (2022), CHI (2022-2023), CogSci (2022-2024), CSCW (2022), NeurIPS (2022-2024)
Student Reviewer: UCLA Computer Science Graduate Admission (2018, 2020)

TEACHING EXPERIENCE

UCLA STATS 10: Introduction to Statistical Reasoning *Fall 2018*
Teaching Assistant

TECHNICAL SKILLS

Programming Tensorflow, Pytorch, C/C++, MATLAB, Python, R
Software & Tools Blender, Unreal Engine 4, Latex, ROS, SPSS, Qualtrics