XIAOFENG GAO

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EDUCATION

University of California, Los Angeles, CA, USA   *Sep. 2017 - Jun. 2022*
Ph.D. Candidate 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   *Aug. 2022 - Present*
Applied Scientist   Supervisors: Govind Thattai, Yadunandana Rao

Work on the Alexa Prize SimBot Challenge, which focuses on virtual assistants that can assist humans in completing real-world tasks by continuous learning and commonsense reasoning

Amazon   *Jun. 2021 - Sep. 2021*
Applied Scientist Intern   Supervisors: Qiaozi Gao, Gaurav Sukhatme, Govind Thattai

Present an embodied instruction following benchmark allowing an agent to actively ask questions
Design and implement a pipeline to collect 50K task-relevant questions and answers on mTurk
Propose a questioner-performer framework based on seq2seq and multi-modal Transformer
Develop a reinforcement learning based algorithm to learn what questions to ask

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 - Present*
Graduate Student Researcher   Advisor: Song-Chun Zhu
Research interest: Explainable AI, Embodied AI, Human-Robot Interaction, Human-Machine Interaction, Computational Cognitive Science, Autonomous Driving

PUBLICATIONS

(* indicates equal contribution)

R. Gong, Y. Zhao, **X. Gao**, J. Huang, Q. Wu, W. Ai, B. Jia, Z. Zhou, S.-C. Zhu, S. Huang. ARNOLD: A Benchmark for Language-Grounded Task Learning with Continuous States in Realistic Scenes. *CORL Workshop on Language and Robot Learning, 2022.*

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. *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 Environment for Learning Real Life Cooking Tasks. *ICML Reinforcement Learning for Real Life Workshop, 2019.*

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*

MEDIA COVERAGE

"A reachability-expressive motion planning algorithm to enhance human-robot collaboration" *Feb. 2022*

Covered by Ingrid Fadelli, Tech Xplore.

"VRKitchen: An interactive virtual environment to train and test AI agents" *Mar. 2019*
Covered by Ingrid Fadelli, Tech Xplore.

"Robots taught to work alongside humans by giving high fives" *Apr. 2017*
Covered by Matt Reynolds, New Scientist.

PROFESSIONAL SERVICE

Journal Reviewer: UMUAI (2021-2022)
Conference Reviewer: IROS (2019), IEEE VR (2020), ICRA (2020), HRI (2020), CHI (2022), CogSci (2022), CSCW (2022)
Student Reviewer: UCLA Computer Science Graduate Admission (2018, 2020)

TEACHING EXPERIENCE

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

MENTORING

Ran (Steven) Gong (2018 - 2019; Currently Ph.D. student in Computer Science at UCLA)
Phipson Lee (2018 - 2019; Master's in Human-Computer Interaction, Carnegie Mellon University)
Ian Conceicao (2019 - 2020)
Jingwu (Frost) Zhang (2019 - 2020)

TECHNICAL SKILLS

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