Xiaoying Yang

xiaoyingy@ucla.edu www.xiaoyingyang.me linkedin.com/in/xyyang09

Overview

Summary: With a multidisciplinary background in research and engineering, I specialize in designing and prototyping interactive systems and frameworks by bringing together mechanics, electronics and software. I demonstrate and evaluate these systems through theoretical analysis, real-time end-to-end pipelines and user studies. I am passionate about enabling physical intelligence through practical solutions that connect technology to real-world applications. As a quick learner and creative maker, I thrive in collaborative environments and enjoy sharing knowledge to spark team growth and innovation.

Domains: Human Computer Interaction (HCI), Applied AI/ML, Sensing, Internet-of-Things (IoT), Robotics

Expertise: Signal & Image Processing, Machine Learning, Interactive System Design, Rapid Prototyping, Dataset Engineering, Research Problem Formulation, Technical Writing & Presentation

Education

University of California, Los Angeles (UCLA) *September 2021 – Present*
Ph.D. in Electrical and Computer Engineering
Advisor: Yang Zhang

Tongji University, Shanghai *September 2015 – July 2020*
Bachelor of Engineering in Electrical Engineering and Automation (Honors)

Professional Experience

UCLA, Human-Centered Computing & Intelligent Sensing Lab *June 2021 - Present*
Research Assistant, Advisor: Yang Zhang *Los Angeles, CA, USA*
Topic: Designing Human-Object Interaction As Computational Fuel

- Led research on digitizing everyday interactions for interactive wearable, IoT, and AR systems
- Led research on mmWave backscatter for human activity sensing with spatiotemporal ML models
- Results: seven first-authored publications in top venues, distinguished master thesis research award

Keysight Technologies, Communication Solution Group *June 2024 - December 2024*
AI/ML R&D Intern, Manager: Balaji Raghothaman *Santa Rosa, CA, USA*
Topic: mmWave Joint Communication and Sensing

- Designed signal processing pipelines and machine learning models for sensing applications
- Investigated signal denoising and synthesis through target and channel feature disentanglement
- Results: major contributor for three demos at conferences

Publications

Xiaoying Yang, Qian Lu, Jeeeun Kim and Yang Zhang. 2025. LuxAct: Enhance Everyday Objects for Visual Sensing with Interaction-Powered Illumination. In Proceedings of the 38th Annual ACM Symposium on User Interface Software and Technology (Accepted, UIST'25) [To Appear]

Vivian Shen[†], Xiaoying Yang[†], Chris Harrison and Yang Zhang. 2025. Hapt-Aids: Self-Powered, On-Body Haptics for Activity Monitoring. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies ([†]Equal Contribution, Conditionally Accepted, IMWUT'25) [To Appear]

Qian Lu, Xiaoying Yang, Xue Wang, Jacob Sayono, Yang Zhang, and Jeeeun Kim. 2025. LumosX: 3D Printed Anisotropic Light-Transfer. In Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI'25) [DOI]

Xiaoying Yang, Jacob Sanoyo, Jess Xu, Yang Zhang. 2024. Interaction-Power Stations: Turning Environments into Ubiquitous Power Stations for Charging Wearables. 2024 CHI Conference on Human Factors in Computing Systems (CHI '24, Late-Breaking Work) [DOI][VIDEO]

Xiaoying Yang, Xue Wang, Gaofeng Dong, Zihan Yan, Mani Srivastava, Eiji Hayashi, and Yang Zhang. 2023. Headar: Sensing Head Gestures for Confirmation Dialogs on Smartwatches with Wearable Millimeter-Wave Radar. In Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT'23) [DOI][VIDEO]

Xiaoying Yang, Jacob Sanoyo, Yang Zhang. 2023. CubeSense++: Smart Environment Sensing with Interaction-Powered Corner Reflector Mechanisms. In Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (UIST '23) [DOI] [VIDEO]

Xiaoying Yang, Jacob Sayono, Jess Xu, Jiahao "Nick" Li, Josiah Hester, and Yang Zhang. 2022. MiniKers: Interaction-Powered Smart Environment Automation. In the Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT '22) [DOI]

Siyou Pei, Pradyumna Chari, Xue Wang, Xiaoying Yang, Achuta Kadambi, and Yang Zhang. 2022. ForceSight: Non-Contact Force Sensing with Laser Speckle Imaging. In Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22) [DOI] [VIDEO]

Xiaoying Yang, and Yang Zhang, CubeSense: Wireless, Battery-Free Interactivity through Low-Cost Corner Reflector Mechanisms. 2021 CHI Conference on Human Factors in Computing Systems (CHI '21, Late-Breaking Work) [DOI]

Skills

Programming Languages	Python, C/C++, C#, MATLAB, JavaScript
Frameworks & Libraries	PyTorch, Unity, OpenCV, OpenSim
Hardware Design & Prototyping	Eagle PCB, Fusion 360, Arduino, ESP32, nRF52, Raspberry Pi
Platforms & Systems	Linux, Android, iOS, Oculus Quest

Honors & Awards

Distinguished Master's Thesis Research Award	UCLA ECE	*2024*
Special Recognitions for Outstanding Reviews	IMWUT	*2023-2024*
Travel Award	Ubicomp	*2023*
Travel Scholarship	UIST	*2022*
Honorable Mention Award for ForceSight Demo	UIST	*2022*
Graduate Dean's Scholar Award	UCLA	*2021*
Outstanding Undergraduate	Shanghai	*2020*

Service

Subcommittee Chair Assistant	CHI	*2025*
Reviewer	UIST	*2022-2025*
Reviewer	CHI	*2023-2025*
Reviewer	IMWUT	*2023-2024*

Teaching Experience

ECE ENG100 Electrical and Electronic Circuits	Circuit Theory	*UCLA, 2025*
ECE 209AS Engineering Interactive Systems	Machine Learning, Unity	*UCLA, 2022*
Open-Source Hardware and Programming	Arduino, Raspberry Pi	*Tongji, 2020*