

Di Duan

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Research Interests: Wearable Sensing | Wireless Sensing | Hardware-Software Co-Design System | Healthcare+AI
Mobile Sensing × Human-Computer Interaction

Special Focus: Pioneering Sensing Technologies | Affordable, Secure, and User-friendly Applications | Health

👁 **Research Vision:** Advancing the next generation of human-machine-environment interaction through ubiquitous mobile systems—making it more accessible, affordable, and reliable.

Positions

The Chinese University of Hong Kong (CUHK)

Postdoctoral Fellow (Full-Time) in the Department of Information Engineering

Advisor: [Prof. Guoliang Xing](#).

Aug. 2024 – Present

Hong Kong

Centre for Perceptual and Interactive Intelligence (CPII)

Postdoctoral Fellow

Mentor: [Prof. Guoliang Xing](#).

Nov. 2024 – Apr. 2025

Hong Kong

Education

City University of Hong Kong (CityU)

Ph.D. in Computer Science

Supervised by [Prof. Weitao Xu](#), co-supervised by [Prof. Xiaohua Jia](#). I also work closely with [Prof. Tianxing Li](#) at MSU.

Aug. 2020 – Jul. 2024

Hong Kong

Hong Kong University of Science and Technology (HKUST)

M.Sc. in Electronic Engineering

Aug. 2018 – Nov. 2019

Hong Kong

Harbin Engineering University (HEU)

B.Eng. in Optoelectronic Information Science and Engineering

Aug. 2014 – Aug. 2018

Harbin, Heilongjiang, China

Selected Awards

🌟 Outstanding Research Thesis Award 2024

CityU, 2025

🏆 Best Paper Honorable Mention Award

SenSys'25, 2025

🏆 Honorable Mention Award

MobileHCI'24, 2024

🏆 Mark Weiser Best Paper Award

PerCom'23, 2023

🏆 Best Demo Runner-up Award

SenSys'24, 2024

🌟 Elsevier Monetary Award

Elsevier, 2023

🌟 Studentship

CityU, 2020

Publications

[UIST'25] PricoEye: The Eye of Primary Colors for Fast and Convenient 3D Reconstruction of Fine-grained Palmprint on Smartphones

Di Duan*, Kaicheng Xiao*, Lixing He, Wei Gao, Guoliang Xing

2025

[SenSys'25] Argus: Multi-View Egocentric Human Mesh Reconstruction Based on Stripped-Down Wearable mmWave Add-on

Di Duan*, Shengzhe Lyu*, Mu Yuan, Hongfei Xue, Tianxing Li, Weitao Xu, Kaishun Wu, Guoliang Xing

🏆 Best Paper Honorable Mention Award (5/235), 2025

[MobiSys'24] F²Key: Dynamically Converting Your Face into a Private Key Based on COTS Headphones for Reliable Voice Interaction

Di Duan, Zehua Sun, Tao Ni, Shuaicheng Li, Xiaohua Jia, Weitao Xu, Tianxing Li

2024

[IMWUT/UbiComp'24] EarSE: Bringing Robust Speech Enhancement to COTS Headphones

Di Duan, Yongliang Chen, Weitao Xu, Tianxing Li

[PerCom'23] EMGSense: A Low-Effort Self-Supervised Domain Adaptation Framework for EMG Sensing

Di Duan, Huanqi Yang, Guohao Lan, Tianxing Li, Xiaohua Jia, Weitao Xu

🏆 Best Paper Award (1/159), 2023

[MobileHCI'24] Medusa3D: The Watchful Eye Freezing Illegitimate Users in Virtual Reality Interactions

Aochen Jiao*, Di Duan* (*co-first authors), Weitao Xu

🏆 Honorable Mention Award (3/141), 2024

[INFOCOM'25] iRadar: Synthesizing Millimeter-Waves from Wearable Inertial Inputs for Human Gesture Sensing

Huanqi Yang, Mingda Han, Xinyue Li, Di Duan, Tianxing Li, Weitao Xu

[TMC] Mitigating Tail Latency for On-Device Inference with Load-Balanced Heterogeneous Models

Mu Yuan, Lan Zhang, Di Duan, Liekang Zeng, Miao-Hui Song, Zichong Li, Guoliang Xing, Xiang-Yang Li

[SIGCOMM'25] SCX: Stateless KV-Cache Encoding for Cloud-Scale Confidential Transformer Serving

Mu Yuan, Lan Zhang, Liekang Zeng, Siyang Jiang, Bufang Yang, Di Duan, Guoliang Xing

[MobiCom'24] RF-Egg: An RF Solution for Fine-Grained Multi-Target and Multi-Task Egg Incubation Sensing

Zehua Sun, Tao Ni, Yongliang Chen, Di Duan, Kai Liu, Weitao Xu

[TMC] Scenario-Adaptive Key Establishment Scheme for LoRa-enabled IoV Communications

Huanqi Yang, Di Duan, Hongbo Liu, Chengwen Luo, Yuezhong Wu, Wei Li, Albert Y. Zomaya, Linqi Song, Weitao Xu

[TOSN] mmSign: mmWave-based Few-Shot Online Handwritten Signature Verification

Mingda Han, Huanqi Yang, Tao Ni, Di Duan, Mengzhe Ruan, Yongliang Chen, Jia Zhang, Weitao Xu

[CSCAIoTSys] EarDA: Towards Accurate and Data-Efficient Earable Activity Sensing

Shengzhe Lyu, Yongliang Chen, Di Duan, Renqi Jia, Weitao Xu

[SenSys'24 Demo] Myotrainer: Muscle-Aware Motion Analysis and Feedback System for In-Home Resistance Training

Yuting He, Xinyan Wang, Mu Yuan, Di Duan, Doris S. F. Yu, Guoliang Xing, Hongkai Chen

🏆 Best Demo Runner-up Award, 2024

2024

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Professional Services

Organizing Committee:	
2024:	Publicity Chair of BodySys Workshop (MobiSys)
Technical Program Committee:	
2025:	ICPADS, SenSys (Demo)
2024:	ICPADS, CHCHI (Chinese CHI)
Artifact Evaluation Committee:	
2025:	MobiCom
2024:	MobiSys
Conference Review:	
2025:	MobiCom, CHI, UbiComp, SIGCOMM
2024:	IPSN, IOTDI, ICDCS, DCOSS-IoT, SenSys
2023:	IPSN
Journal Review:	
2025:	IMWUT, TMC (IEEE Trans), HEALTH (ACM Trans), TIOT (ACM Trans)
2024:	TMC (IEEE Trans), HEALTH (ACM Trans), Ad Hoc Networks

Reference

Guoliang Xing (Postdoc Advisor)

Professor

Email: glxing@ie.cuhk.edu.hk

Xiaohua Jia (Ph.D. Advisor)

Chair Professor, Former Head of Department of Computer Science

Email: csjia@cityu.edu.hk

Weitao Xu (Ph.D. Advisor)

Associate Professor

Email: weitaoxu@cityu.edu.hk

Tianxing Li (Close Collaborator)

Assistant Professor

Email: litianx2@msu.edu

ACM Fellow, IEEE Fellow, HKIE Fellow

The Chinese University of Hong Kong

IEEE Fellow, ACM Distinguished Member

City University of Hong Kong

IEEE Senior Member

City University of Hong Kong

Michigan State University