

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 Honors and Awards

🏆 **ACM SIGBED China Doctoral Dissertation Award (3 awardees nationwide)**

ACM China, 2025

Contribution and Criteria: The award recognizes the author(s) of a **doctoral dissertation that has made significant breakthroughs in fundamental theory or applied foundational research in the fields of embedded systems, Internet of Things (IoT), Electronic Design Automation (EDA), Cyber-Physical Systems (CPS), and related areas, or that has demonstrated important innovations in key technologies or application technologies.** [\[Official Website\]](#)

🌟 **Outstanding Research Thesis Award 2024**

CityU, 2025

Contribution and Criteria: The award is offered by the Chow Yei Ching School of Graduate Studies in recognition of research students **who have produced a thesis of outstanding quality and achievement** in their relevant research area.

🏆 **Best Paper Honorable Mention Award**

ACM SenSys'25, 2025

🏆 **Honorable Mention Award**

ACM MobileHCI'24, 2024

🏆 **Mark Weiser Best Paper Award**

IEEE PerCom'23, 2023

🏆 **Best Demo Runner-up Award**

ACM SenSys'24, 2024

🌟 **Elsevier Monetary Award**

Elsevier, 2023

🌟 **Studentship**

CityU, 2020

Travel Grants

♀ **N2Women Workshop Travel Grant**

ACM MobiSys'24, 2024

Description: The grant supports attendance at the 14th N2Women Workshop, fostering networking, mentorship, and research for women, underrepresented minorities, and **explicitly encouraged males who support women's career development in the field.** [\[Official Website\]](#)

Publications

Latest publication list is available at [Google Scholar](#) and my [Homepage](#).

* indicates co-primary authors, _____ indicates students under my supervision.

[GetMobile'26] **Embodied mmWave Spotlight: How Stripped-Down mmWave Radars Finally Made Egocentric 3D Human Mesh Reconstruction Practical**

Di Duan, Shengzhe Lyu, Weitao Xu, Guoliang Xing

★ **Highlights, 2026**

[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

2024

[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**

[SenSys'26] **(Just Accepted) COACH: Adaptive Robust Human-Robot Collaboration for Efficient Smart Manufacturing**

Hui Wang, Liekang Zeng, Zhiwen Yu, Yao Zhang, Di Duan, Mu Yuan, Bin Guo, Guoliang Xing

2026

[RTSS'25] **(Just Accepted) Grape: Efficient Spatiotemporal Prediction Services with Stale Sensing Streams**

Liekang Zeng, Yunchao Liu, Shengyuan Ye, Mu Yuan, Di Duan, Xu Chen, Guoliang Xing

2025

[TMC] **(Just Accepted) SwiftChannel: Algorithm-Hardware Co-Design for Deep Learning-Based 5G Channel Estimation**

Shengzhe Lyu, Yuhua She, Di Duan, Tao Ni, Yu Hin Chan, Chengwen Luo, Ray C. C. Cheung, Weitao Xu

2025

[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

2025

[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

2025

[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

2025

[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

2024

[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

2024

[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

2023

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

Mentoring Experience

Aochen Jiao 2023–2024	CityU CS Research Assistant, now Ph.D. candidate at The University of Sydney Research Output: a MobileHCI'24 paper (with Honorable Mention Award)
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Teaching Experience

IERG6200 2025 R1	Advanced Topics in Computer Networks (CUHK), Course Administrator - Curated a dynamic list of cutting-edge research papers for the advanced topics in computer networks; mentored students through presentations with targeted feedback; evaluated course projects and final exams
IERG6200 2024 R1	Advanced Topics in Computer Networks (CUHK), Course Administrator - Curated a dynamic list of cutting-edge research papers for the advanced topics in computer networks; mentored students through presentations with targeted feedback; evaluated course projects and final exams
CS1302 2023/24 Sem. B	Introduction to Computer Programming (CityU), Teaching Assistant - Held office hours; graded and wrote solutions for assignments and exams
CS1302 2023/24 Sem. A	Introduction to Computer Programming (CityU), Tutor - Held office hours; taught lab tutorials; graded course projects and exams
CS1302 2022/23 Sem. A&B	Introduction to Computer Programming (CityU), Teaching Assistant - Held office hours; graded and wrote solutions for assignments and exams
CS1302 2021/22 Sem. B	Introduction to Computer Programming (CityU), Tutor - Held office hours; taught lab tutorials; graded course projects and exams
CS1302 2021/22 Sem. A	Introduction to Computer Programming (CityU), Teaching Assistant - Held office hours; graded and wrote solutions for assignments and exams
CS1302 2020/21 Sem. A&B	Introduction to Computer Programming (CityU), Teaching Assistant - Held office hours; graded and wrote solutions for assignments and exams

Professional Services

Organizing Committee: 2024:	Publicity Chair of BodySys Workshop (MobiSys)
Technical Program Committee: 2027: 2026:	MobiCom MobiSys, ASSETS, MobiQuitous, CHASE, TURC (SIGMOBILE)
2025: 2024:	MobiDx (MobiCom Workshop) ICPADS, SenSys (Demo) ICPADS, CHCHI (Chinese CHI)
Artifact Evaluation Committee: 2025: 2024:	MobiCom MobiSys
Conference Review: 2027: 2026:	MobiCom MobiSys, ASSETS, TURC, MobiQuitous, CHASE

2025:

2024:

2023:

MobiCom, CHI, UbiComp, SIGCOMM, ICPADS
IPSN, IOTDI, ICDCS, ICPADS, DCOSS-IoT, SenSys
IPSN

Journal Review:

Distinguished Reviewer Board

TOSN (ACM Trans), 2026–Present
HEALTH (ACM Trans), 2026–Present

2026:

TMC (IEEE Trans); HEALTH (ACM Trans); TOSN (ACM Trans);
TIOT (ACM Trans); TPCI (CCF Trans); IMWUT

2025:

IMWUT; TMC, TSC (IEEE Trans); HEALTH, TIOT (ACM Trans)

2024:

TMC (IEEE Trans), HEALTH (ACM Trans), Ad Hoc Networks

Invited Talks

Wireless-Enhanced Ubiquitous Wearable Sensing System

2025 Embedded Intelligence Summit (ACM SIGBED China)

 Zhengzhou, Henan, 2025

Reference

Guoliang Xing (Postdoc Advisor)

Professor, Head of the IE Department

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ACM Fellow, IEEE Fellow

The Chinese University of Hong Kong

Xiaohua Jia (Ph.D. Advisor)

Chair Professor, Former Head of the CS Department

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 Phone: (852) 3442-9670

 Fax: (852) 3442-0503

ACM Fellow, IEEE Fellow

City University of Hong Kong

Weitao Xu (Ph.D. Advisor)

Associate Professor

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IEEE Senior Member

City University of Hong Kong