

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.

[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, Yuhan 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**

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

2024

[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

Mentoring Experience

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

Teaching Experience

IERG6200 **Advanced Topics in Computer Networks (CUHK), Course Administrator**
2025 R1 - 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 **Advanced Topics in Computer Networks (CUHK), Course Administrator**
2024 R1 - 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 **Introduction to Computer Programming (CityU), Teaching Assistant**
2023/24 Sem. B - Held office hours; graded and wrote solutions for assignments and exams

CS1302 **Introduction to Computer Programming (CityU), Tutor**
2023/24 Sem. A - Held office hours; taught lab tutorials; graded course projects and exams

CS1302 **Introduction to Computer Programming (CityU), Teaching Assistant**
2022/23 Sem. A&B - Held office hours; graded and wrote solutions for assignments and exams

CS1302 **Introduction to Computer Programming (CityU), Tutor**
2021/22 Sem. B - Held office hours; taught lab tutorials; graded course projects and exams

CS1302 **Introduction to Computer Programming (CityU), Teaching Assistant**
2021/22 Sem. A - Held office hours; graded and wrote solutions for assignments and exams

CS1302 **Introduction to Computer Programming (CityU), Teaching Assistant**
2020/21 Sem. A&B - 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:
2026: MobiSys, ASSETS, MobiQuitous, CHASE,
MobiDx (MobiCom Workshop)
2025: ICPADS, SenSys (Demo)
2024: ICPADS, CHCHI (Chinese CHI)

Artifact Evaluation Committee:
2025: MobiCom
2024: MobiSys

Conference Review:
2026: MobiSys, ASSETS, MobiQuitous, CHASE
2025: MobiCom, CHI, UbiComp, SIGCOMM, ICPADS
2024: IPSN, IOTDI, ICDCS, ICPADS, DCOSS-IoT, SenSys
2023: 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)
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)

ACM Fellow, IEEE Fellow

Professor

The Chinese University of Hong Kong

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📞 **Phone:** (852) 3943-8474 📠 **Fax:** (852) 2603-5032

Xiaohua Jia (Ph.D. Advisor)

ACM Fellow, IEEE Fellow

Chair Professor, Former Head of CS Department

City University of Hong Kong

✉ **Email:** csjia@cityu.edu.hk

📞 **Phone:** (852) 3442-9670 📠 **Fax:** (852) 3442-0503

Weitao Xu (Ph.D. Advisor)

IEEE Senior Member

Associate Professor

City University of Hong Kong

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