Di Duan

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Research Interests: Mobile Computing | Human-Computer Interaction | Deep Learning | Wearable Computing

Education

City University of Hong Kong (CityU) — Aug. 2020 – Aug. 2024 (expected)
Ph.D. (expected) in Computer Science — *Hong Kong SAR, China*
Supervised by Dr. Weitao Xu, co-supervised by Prof. Xiaohua Jia. I also work closely with Dr. Tianxing Li at MSU.

Hong Kong University of Science and Technology (HKUST) — Aug. 2018 – Nov. 2019
M.Sc. in Electronic Engineering — *Hong Kong SAR, China*

Harbin Engineering University (HEU) — Aug. 2014 – Aug. 2018
B.Eng. in Optoelectronic Information Science and Engineering — *Harbin, Heilongjiang, China*

Publications

[MobiSys'24] F^{2}Key: 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
(conditional acceptance) 16.3%, 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)**, 16.9%, 2023*

[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

[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

Current Research

Reflexive Saccade-Based User Authentication in VR (under review in MobileHCI'24) — Aug. 2023 - Present
New user authentication approach based on reflexive saccade enables reliable interaction. — *Gaze, HCI, VR*

- This research was completed by a student under my supervision (as co-first author).

Awards

Elsevier Monetary Award — *Elsevier, 2023*

Mark Weiser Best Paper Award — *PerCom'23, 2023*

Postgraduate Studentship — *CityU, 2020*

Skills

Languages:	Python, Matlab, Java
Technologies:	Signal Processing (audio, EMG, IMU, gaze, mmWave), Deep Learning, Transfer Learning
Platform & Framework:	Pytorch, Tensorflow, Arduino, Android
Tools:	LaTeX, Draw.io, Powerpoint

Services

Conference Review:

2024:	IPSN, IOTDI, ICDCS, DCOSS-IoT
2023:	IPSN

Journal Review:

2024:	Ad Hoc Networks

Professional Experience

Bright Dream Robotics Co., Ltd. (Country Garden Group) Oct. 2019 - Jul. 2020

Deep Learning Algorithm Engineer *Foshan, Guangdong, China*

- Vision-empowered tower crane safety system.
- Elevator overload detection in building site scenarios.

Unity Drive co., Ltd. Apr. 2019 - Sep. 2019

Research Intern *Shenzhen, Guangdong, China*

- Autonomous vehicle vision algorithm development.