

Tianxing Li

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RESEARCH INTERESTS

Core: Sensing, Mobile Security, Low-power Devices, Wireless Communication, Embedded Systems
Application: Human-Computer Interaction, Mobile Health, Internet of Things, VR/AR/xR

POSITIONS

Jan. 2021- Present	MICHIGAN STATE UNIVERSITY <i>Assistant Professor, Department of Computer Science and Engineering</i>	East Lansing, MI
Jan. 2020- Dec. 2020	UNIVERSITY OF MASSACHUSETTS AMHERST <i>Postdoctoral Researcher Associate, College of Information & Computer Science</i> Advisor: Prof. Deepak Ganesan	Amherst, MA

EDUCATION

Aug. 2014- Dec. 2019	DARTMOUTH COLLEGE <i>Ph.D., Computer Science</i> Advisor: Prof. Xia Zhou	Hanover, NH
Sept. 2012- Jun. 2014	DARTMOUTH COLLEGE <i>Master of Science, Computer Science</i>	Hanover, NH
Oct. 2009-Dec. 2011	AUSTRALIAN NATIONAL UNIVERSITY <i>Bachelor of Engineering, Electronic and Communication Systems (Major) & Photonic Systems (Minor)</i>	ACT, Australia
Sept. 2007-Sept. 2009	BEIJING INSTITUTE OF TECHNOLOGY <i>Bachelor of Engineering, Optical Information Science & Technology</i>	Beijing, China

HONORS & PAPER AWARDS

- Best Paper Award at PerCom 2023
 - CACM Research Highlights Award 2018
 - SIGMOBILE Research Highlights Award 2016, 2018, and 2021
 - Best Paper Nominee Award at SenSys 2017
 - Best Video Award at MobiCom 2015
 - 3rd place of Neukom Prize for Outstanding Graduate Research at Dartmouth College
 - Best Demo Award at MobiSys 2015
 - Bronze Medal of Student Research Competition at MobiCom 2014
 - Best Paper Award at VLCS 2014
 - Best Paper Nominee Award at UbiComp 2014
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PEER-REVIEWED CONFERENCE PAPERS

MobiSys 2024	SoilCares: Towards Low-cost Soil Macronutrients and Moisture Monitoring Using RF-VNIR Sensing Juexing Wang, Yuda Feng, Gouree Kumbhar, Guangjing Wang, Qiben Yan, Qingxu Jin, Robert C. Ferrier, Xiong Jie, and Tianxing Li 2024 ACM Conference on Mobile Systems, Applications, and Services
MobiSys 2024	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, and Tianxing Li 2024 ACM Conference on Mobile Systems, Applications, and Services
MobiCom 2024	Demeter: Reliable Cross-soil LPWAN with Low-cost Signal Polarization Alignment Yidong Ren, Wei Sun, Jialuo Du, Huaili Zeng, Younsuk Dong, Mi Zhang, Shigang Chen, Yunhao Liu, Tianxing Li, and Zhichao Cao 2024 ACM Conference on Mobile Computing and Networking
IMWUT 2024	EarSE: Bringing Robust Speech Enhancement to COTS Headphones Di Duan, Yongliang Chen, Weitao Xu, and Tianxing Li 2024 ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies

- IMWUT 2024** PyroSense: 3D Posture Reconstruction Using Pyroelectric Infrared Sensing
Huaili Zeng, Gen Li, and Tianxing Li
2024 ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies
- IMWUT 2023** EarSE: Bringing Robust Speech Enhancement to COTS Headphones
Di Duan, Yongliang Chen, Weitao Xu, and Tianxing Li
2023 ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies
(Acceptance rate: 28%)
- IMWUT 2023** PATCH: A Plug-in Framework of Non-blocking Inference for Distributed Multimodal System
Juexing Wang, Guangjing Wang, Xiao Zhang, Li Liu, Huacheng Zeng, Li Xiao, Zhichao Cao, Lin G, and Tianxing Li
2023 ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies
(Acceptance rate: 28%)
- MobiSys 2023** EchoAttack: Practical Inaudible Attacks To Smart Earbuds
Gen Li, Zhichao Cao, and Tianxing Li
2023 ACM Conference on Mobile Systems, Applications, and Services **(Acceptance rate: 20.7%)**
- MobiSys 2023** RoFin: 3D Hand Pose Reconstructing via 2D Rolling Fingertips
Xiao Zhang, Griffin Klevering, Juexing Wang, Tianxing Li, and Li Xiao
2023 ACM Conference on Mobile Systems, Applications, and Services **(Acceptance rate: 20.7%)**
- IoTDI 2023** FaceTouch: Practical Face Touch Detection with a Multimodal Wearable System for Epidemiological Surveillance
Li Liu, Zhichao Cao, and Tianxing Li
The 8th ACM/IEEE Conference on Internet of Things Design and Implementation
(Acceptance rate: 30%)
- PerCom 2023** EMGSense: A Low-Effort Self-Supervised Domain Adaptation Framework for EMG Sensing
Di Duan, Mr. Huanqi Yang, Guohao Lan, Tianxing Li, Xiaohua Jia and Weitao Xu
2023 IEEE International Conference on Pervasive Computing and Communications
(Acceptance rate: 17%)
Best Paper Award
- MobiSys 2021** Low-latency Speculative Inference On Distributed Multi-modal Data Streams
Tianxing Li , Jin Huang, Erik Risinger, and Deepak Ganesan
2021 ACM Conference on Mobile Systems, Applications, and Services **(Acceptance rate: 21.7%)**
SIGMOBILE Research Highlights
- SenSys 2020** Noninvasive Glucose Monitoring Using Polarized Light
Tianxing Li , Nam Bui, Temiloluwa O. Prioleau, Tam Vu, and Xia Zhou
2020 ACM Conference on Embedded Networked Sensor Systems **(Acceptance rate: 20.6%)**
- MobiCom 2018** Battery-Free Eye Tracker on Glasses
Tianxing Li and Xia Zhou
2018 ACM Conference on Mobile Computing and Networking **(Acceptance rate: 22.4%)**
- UIST 2018** Self-Powered Gesture Recognition with Ambient Light
Yichen Li*, Tianxing Li*, Ruchir A. Patel, Xing-Dong Yang, and Xia Zhou (* co-primary)
2018 ACM User Interface Software and Technology Symposium **(Acceptance rate: 21.3%)**
- SenSys 2017** Ultra-Low Power Gaze Tracking for Virtual Reality
Tianxing Li, Qiang Liu, and Xia Zhou
2017 ACM Conference on Embedded Networked Sensor Systems **(Acceptance rate: 17.2%)**
SIGMOBILE Research Highlights, CACM Research Highlights, Best Paper Nominee
- IMWUT 2017** Reconstructing Hand Poses Using Visible Light
Tianxing Li*, Xi Xiong*, Yifei Xie, George Hito, Xing-Dong Yang, and Xia Zhou (* co-primary)
2017 ACM Conference on Interactive, Mobile, Wearable and Ubiquitous Technologies
(Acceptance rate: 21.1%)
- MobiSys 2016** Practical Human Sensing in the Light
Tianxing Li, Qiang Liu, and Xia Zhou
2016 ACM Conference on Mobile Systems, Applications, and Services **(Acceptance rate: 15.7%)**
SIGMOBILE Research Highlights
- MobiCom 2015** Human Sensing Using Visible Light Communication
Tianxing Li, Chuankai An, Zhao Tian, Andrew T. Campbell, and Xia Zhou

- 2015 ACM Conference on Mobile Computing and Networking (**Acceptance rate: 18.3%**)
Best Video Award
- UbiComp 2015** Low-Power Pervasive Wi-Fi Connectivity Using WiScan
Tianxing Li, Chuankai An, Ranveer Chandra, Andrew T. Campbell, and Xia Zhou
2015 ACM Joint Conference on Pervasive and Ubiquitous Computing (**Acceptance rate: 23.6%**)
- MobiSys 2015** Real-time screen-camera communication behind any scene
Tianxing Li, Chuankai An, Xinran Xiao, Andrew T. Campbell, and Xia Zhou
2015 ACM Conference on Mobile Systems, Applications, and Services (**Acceptance rate: 13.2%**)
- UbiComp 2014** StudentLife: Assessing Behavioral Trends, Mental Well-being and Academic Performance of College Students using Smartphones
Rui Wang, Fanglin Chen, Zhenyu Chen, Tianxing Li, Gabriella Harari, Stefanie Tignor, Xia Zhou, Dror Ben-Zeev, and Andrew T. Campbell
2014 ACM Joint Conference on Pervasive and Ubiquitous Computing (**Acceptance rate: 13.6%**)
Best Paper Nominee
- PervasiveHealth 2013** Unobtrusive sleep monitoring using smartphones
Zhenyu Chen, Mu Lin, Fanglin Chen, Lane, N.D., Cardone, G., Rui Wang, Tianxing Li, Yiqiang Chen, Tanzeem Choudhury, and Andrew T. Campbell
2013 EAI Conference on Pervasive Computing Technologies for Healthcare
- ICIP 2013** Dual deblurring leveraged by image matching
Fang Wang, Tianxing Li, Yi Li
2013 IEEE Conference on Image Processing

JOURNAL ARTICLES

- Network 2023** Survey for Soil Sensing with IOT and Traditional Systems.
3 (4): 482-501 Juexing Wang, Xiao Zhang, Li Xiao, and Tianxing Li
- ACM Crossrads 2019** Lighting the way to wireless efficiency.
26 (1): 28-31 Charles J. Carver, Tianxing Li, and Xia Zhou
- GetMobile 2018** Ultra-Low Power Gaze Tracking for Virtual Reality
22 (3): 27-31 Tianxing Li, Qiang Liu, and Xia Zhou
- GetMobile 2016** Practical Human Sensing in the Light
20 (4): 28-33 Tianxing Li, Qiang Liu, and Xia Zhou

WORKSHOP PAPERS

- VLCS 2015** Visible Light Knows Who You Are
Chuankai An, Tianxing Li, Zhao Tian, Andrew T. Campbell, and Xia Zhou
2015 ACM Workshop on Visible Light Communication Systems
- VLCS 2014** HiLight: Hiding Bits in Pixel Translucency Changes
Tianxing Li, Chuankai An, Andrew Campbell, and Xia Zhou
2014 ACM Workshop on Visible Light Communication Systems
Best Paper Award

POSTERS AND DEMOS

- SenSys 2017** Demo: Ultra-Low Power Gaze Tracking for Virtual Reality
Tianxing Li, Emmanuel S. Akosah, Qiang Liu, and Xia Zhou
- MobiSys 2015** Demo: Real-Time Screen-Camera Communication Behind Any Scene
Tianxing Li, Chuankai An, Xinran Xiao, Andrew T. Campbell, and Xia Zhou
Best Demo Award
- MobiCom 2014** Poster: HiLight: Hiding Bits in Pixel Translucency Changes
Tianxing Li, Chuankai An, Andrew T. Campbell, and Xia Zhou

ACTIVITIES

Co-chair

- ACM S3 2017 workshop (in conjunction with ACM MobiCom 2017)
- ACM Ph.D. Forum 2017 workshop (in conjunction with ACM MobiSys 2017)

TPC member

- MobiCom 2024
- MobiSys 2021, 2024
- Mass 2022

Guest editor

- MDPI Special Issues

External Reviewer

- CHI 2019
- IMWUT 2018, 2019, 2020, 2021, 2022, 2023, 2024
- IEEE Wireless Communication Letters
- IEEE Transactions on Mobile Computing
- UbiComp 2015
- IEEE Communications Magazine
- Sensors

TEACHING

- Instructor** **Course:** Mobile Sensing and Applications (CSE891), Spring 2021, Michigan State University
- Instructor** **Course:** C Programming (CSE220), Fall 2021, Michigan State University
- Instructor** **Course:** Mobile Sensing and Applications (CSE891), Spring 2022, Michigan State University
- Instructor** **Course:** C Programming (CSE220), Fall 2022, Michigan State University
- Instructor** **Course:** Mobile Application and Development (CSE476), Spring 2023, Michigan State University
- Instructor** **Course:** Mobile Application and Development (CSE476), Spring 2024, Michigan State University