

Chi Zhang



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RESEARCH INTERESTS

Mobile & Ubiquitous Computing; Mobile & Ubiquitous Sensing;
Wireless Power Delivery; Wireless Networking;
Internet of Things (IoT); Ultra-low-power Computing & Communication Systems;
Cross-Layer Optimization; Software Hardware Co-design

EDUCATION

University of Wisconsin-Madison

Ph.D. Electrical and Computer Engineering

Sept. 2013 – Dec. 2017

Minor: Computer Science

Dissertation: Augmenting Mobile and Ubiquitous Interactions with Computational Light Sensing

Advisor: Xinyu Zhang

M.S. Electrical Engineering

Sept. 2013 – May. 2016

University of California San Diego

Visiting Graduate Student

Sept. 2017 – Dec. 2017

Huazhong University of Science and Technology

B.E. Optoelectronics Engineering

Sept. 2009 – Jul. 2013

PUBLICATIONS

“**” marks co-primary authors.

Visible Light Localization Using Conventional Light Fixtures and Smartphones

Chi Zhang, Xinyu Zhang

IEEE Transactions on Mobile Computing (TMC), 2018 (Early Access)

Impact factor: 4.098 (at the time of publication)

(Extended version of LiTell)

Automating Visual Privacy Protection Using a Smart LED

Shilin Zhu*, Chi Zhang*, Xinyu Zhang

ACM International Conference on Mobile Computing and Networking (MobiCom), 2017

Acceptance ratio: 18.8% (35 / 186)

• **Press coverage** by [IEEE Spectrum](#), [Digital Trends](#), [CO.DESIGN](#), [Hackaday](#), and others in 7+ languages

Also in *ACM Wireless of the Students, by the Students, for the Students (S³) Workshop*, 2017

Pulsar: Towards Ubiquitous Visible Light Localization

Chi Zhang, Xinyu Zhang

ACM International Conference on Mobile Computing and Networking (MobiCom), 2017

Acceptance ratio: 18.8% (35 / 186)

Also in *ACM Wireless of the Students, by the Students, for the Students (S³) Workshop*, 2017

LiTell: Robust Indoor Localization Using Unmodified Light Fixtures

Chi Zhang, Xinyu Zhang

ACM International Conference on Mobile Computing and Networking (MobiCom), 2016

Acceptance ratio: 14.2% (32 / 226)

• **Finalist** of WARF Innovation Awards, 6 out of 400+ invention disclosures in 2016 (**top 1.5%**)

Towards a Visible Light Network Architecture for Continuous Communication and Localization

Jialiang Zhang, **Chi Zhang**, Xinyu Zhang, Suman Banerjee
ACM Workshop on Visible Light Communication Systems (VLCS), 2016

Extending Mobile Interaction Through Near-Field Visible Light Sensing

Chi Zhang, Joshua Tabor, Jialiang Zhang, Xinyu Zhang
ACM International Conference on Mobile Computing and Networking (MobiCom), 2015
 Acceptance ratio: 18.4% (38 / 207)

Energy Efficient WiFi Display

Chi Zhang, Xinyu Zhang, Ranveer Chandra
ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2015
 Acceptance ratio: 13.2% (29 / 219)

Evaluation of Traffic Control in Virtual Environment

Xiaojing Wang, Wei Ye, Haowei Wu, Linjie Ding, **Chi Zhang**
Intl. Sym. on Distributed Computing and Applications to Business, Engineering and Science (DCABES), 2012
 (Undergraduate Research)

DEMOS

LiShield: Privacy Protection of Physical Environment Against Photographing

Shilin Zhu*, **Chi Zhang***, Xinyu Zhang
ACM International Conference on Mobile Computing and Networking (MobiCom), 2017
 • **Invited Demo** in *ACM Workshop on Visible Light Communication Systems (VLCS)*, 2017
 Also in *ACM Wireless of the Students, by the Students, for the Students (S³) Workshop*, 2017

Visible Light Localization Using Incumbent Light Fixtures

Chi Zhang, Shipei Zhou, Xinyu Zhang
ACM Conference on Embedded Network Sensor Systems (SenSys), 2016

LiTell: Indoor Localization Using Unmodified Light Fixtures

Chi Zhang, Xinyu Zhang
ACM International Conference on Mobile Computing and Networking (MobiCom), 2016

PATENTS

Visual Privacy Protection System

Xinyu Zhang, **Chi Zhang**, Shilin Zhu
 US 2018/0359403

Navigation System Tracking High-Efficiency Indoor Lighting Fixtures

Xinyu Zhang, **Chi Zhang**
 US 2018/0176739

Spatial Location Indoors Using Standard Fluorescent Fixtures

Xinyu Zhang, **Chi Zhang**
 US 2017/0346558; WO 2017/205020

Location Aware Communication System Using Visible Light Transmission

Xinyu Zhang, Suman Banerjee, Jialiang Zhang, **Chi Zhang**
 US 9,712,234

Touch Surface for Mobile Devices Using Near Field Light Sensing

Xinyu Zhang, **Chi Zhang**, Joshua Tabor, Jialiang Zhang
 US 10,156,901

EXPERIENCE

University of California San Diego

Postdoctoral Researcher

San Diego, CA
Mar. 2017 – present

Supervising Undergraduate, M.S., and Ph.D. Students
Ultra-low-power 802.11-compatible Active Radio
Long-range Capacitive Wireless Power Transfer (CPT, WPT) for IoT Devices
Ultra-wide-band (UWB) Array for High-precision Seamless Localization & Tracking

University of Wisconsin-Madison

Research Assistant

Madison, WI
Sept. 2015 – Dec. 2017

Low-power Analog Signal Conditioning; Real-time, Energy-Efficient Signal Processing
Indoor Localization; Orientation Sensing; Heart Rate Monitoring; Sensor Fusion
RF Modulator; 802.11 MAC & PHY Implementation; Software Defined Radio
Portable, Mixed-signal & RF PCB Prototyping; Low-power IoT Platform Development
Microcontrollers Development; Reverse Engineering; Firmware Hack
High-speed, High-dynamic-range Photodiode Sensors; PD-based AoA Sensing
Aliased Sampling; Artifacts Removal; Ambient Interference Suppression
RAW Image & Video Processing; USB Interfacing; JNI Library

Teaching Assistant

Sept. 2015 – Dec. 2015

E C E 454: Mobile Computing Lab

Project Assistant

Sept. 2014 – Aug. 2015

Android Development; Wireless Display; Wi-Fi Direct (P2P); Linux Kernel Driver; Energy Optimization
Light Sensing; Channel Modeling; Ubiquitous Touch Input; Arduino; Hardware Prototyping
Kernel-space Networking; Motion Sensing; Sensor Interfacing; Embedded Development

SERVICE

Reviewer:

IEEE Transaction on Mobile Computing (**TMC**)

IEEE Transaction on Knowledge and Data Engineering (**TKDE**)

IEEE/ACM International Symposium on Quality of Service (**IWQoS**)

IEEE International Conference on Computer Communications (**INFOCOM**)