

Chi Zhang

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RESEARCH INTERESTS

Mobile Computing:

Energy Efficiency; Wireless Network; Cross Layer Optimization; Mobile Interaction

Ubiquitous Computing:

Internet of Things (IoT); Low-power and Ubiquitous Sensing; Ubiquitous Localization; Sensing Systems; Hardware Software Co-design for Sensing and Networking

EDUCATION

University of Wisconsin-Madison

Ph.D. Electrical and Computer Engineering

Expected Dec. 2017

Minor: Computer Science

Dissertation (tentative): Augmenting Mobile and Ubiquitous Interactions with Computational Light Sensing

Advisor: Xinyu Zhang

M.S. Electrical Engineering

May. 2016

University of California San Diego

Visiting Graduate Student

Sept. 2017 - Dec. 2017

Huazhong University of Science and Technology

B.E. Optoelectronics Engineering

Jul. 2013

SELECTED PUBLICATIONS

*** marks co-primary authors.

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, Yahoo, and other media in 7+ languages

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)

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%**)

Extending Mobile Interaction Through Near-Field Visible Light Sensing

Chi Zhang, Joshua Tabor, Jialiing 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)***SELECTED 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*

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 Patent App 15/616386

Navigation System Tracking High-Efficiency Indoor Lighting Fixtures

Xinyu Zhang, Chi Zhang

US Patent App 15/379950

Spatial Location Indoors Using Standard Fluorescent Fixtures

Xinyu Zhang, Chi Zhang

US 2017/0346558

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 2017/0108994

EXPERIENCE**University of Wisconsin-Madison***Research Assistant*

Madison, WI

Sept. 2015 - present

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 and PHY Implementation; Software Defined Radio

Portable, Mixed-signal and 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 and 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; Linux Kernel Driver; Energy and 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/ACM International Symposium on Quality of Service 2017 (**IWQoS'17**)

Reviewer (via Prof. Xinyu Zhang):

INFOCOM, JSAC, TMC, TWC, SECON, IWQoS, ICNP, HotWireless, VLCS, CoNEXT, MobiCom, MobiSys

SKILLS

C, Java, Python, PHP, Shell Script, MATLAB

Linux, Debian, OpenWRT/LEDE, Android, OpenCV, GNU Radio

Raspberry Pi, BeagleBone, Arduino, WARP, RTL-SDR

Device Tree, Kernel Driver, libusb, i2c-dev, IIO, JNI

MCU, AVR, ARM, Xtensa, STM32, ESP8266

Circuits, Analog, Digital, RF, DC-DC, PCB, Eagle, SPICE, Verilog, Reverse Engineering

Makefile, Markdown, L^AT_EX, HTML5, CSS, JSON, SVG, Git, Gnuplot

REFERENCES

Xinyu Zhang

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Principle Researcher, Microsoft Research
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Suman Banerjee

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Mohit Gupta

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