

Xiaolong Zheng

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RESEARCH INTERESTS

Internet of Things, Ubiquitous Networking, Smart Sensing Systems.

EDUCATION

The Hong Kong University of Science and Technology, Clearwater Bay, Hong Kong

- *Doctor of Philosophy (Ph.D.)* Sep 2011 – Jan 2015
 - Department: Computer Science and Engineering
 - Thesis: Low-power, High-throughput Protocol Design for Wireless Sensor Networks under Heterogeneous Interference
 - Adviser: Professor Yunhao Liu and Professor Lionel M. Ni

Dalian University of Technology, Dalian, Liaoning, China

- *Bachelor of Engineering (B.E.)* Sep 2007 – Jul 2011
 - Department: School of Software
 - Thesis: Design of CO₂ Wireless Sensor Networks Node Based on TinyOS

WORK EXPERIENCE

Tsinghua University, Beijing, China

- *Postdoctoral Research Associate* Sep 2015 – present
 - Department: School of Software
 - Supervisor: Professor Yunhao Liu

FUNDS

- Principal Investigator, National Natural Science Foundation of China (NSFC), No. 61672320, “Research on Exploiting Wireless Signatures for Coexistence of Wireless Sensor Networks”, 2017.01-2020.12.
- Co-PI, National Natural Science Foundation of China (NSFC), No. 61672240, “Research on Key Technologies of Situation Computing based on Semantics Location for Mobile Crowd Sensing Environments”, 2017.01-2020.12.
- Principal Investigator, China Postdoctoral Science Foundation, No. 2016M601034, “Interference-Resilient Duty Cycling for Low Power Wireless Sensor Networks”, 2016-2017.

PUBLICATIONS

CONFERENCE ARTICLES (* students mentored by me)

- [16] **Xiaolong Zheng**, Yuan He, Xiuzhen Guo, “StripComm: Interference-Resilient Cross-Technology Communication in Coexisting Environments”, in *IEEE International Conference on Computer Communications (INFOCOM)*, Honolulu, HI, USA, Apr 2018.
- [15] Xiuzhen Guo*, Yuan He, **Xiaolong Zheng**, Liangcheng Yu, Omprakash Gnawali, “ZigFi: Harnessing Channel State Information for Cross-Technology Communication”, in *IEEE International Conference on Computer Communications (INFOCOM)*, Honolulu, HI, USA, Apr 2018.
- [14] Yilun Zheng, Yuan He, Meng Jin, **Xiaolong Zheng**, Yunhao Liu, “RED: RFID-based Eccentricity Detection for High-speed Rotating Machinery”, in *IEEE International Conference on Computer Communications (INFOCOM)*, Honolulu, HI, USA, Apr 2018.
- [13] Chengkun Jiang*, Yuan He, **Xiaolong Zheng**, Yunhao Liu, “Orientation-aware RFID Tracking with Centimeter-level Accuracy”, in *ACM/IEEE Conference on Information Processing in Sensor Networks (IPSN)*, Porto, Portugal, Apr 2018.
- [12] Zihao Yu, Chengkun Jiang, Yuan He, **Xiaolong Zheng**, Xiuzhen Guo, “Crocs: Cross-Technology Clock Synchronization for WiFi and ZigBee”, in *International Conference on Embedded Wireless Systems and Networks (EWSN)*, Madrid, Spain, Feb 2018.
- [11] Junchen Guo*, Yuan He, **Xiaolong Zheng**, “PanGu: Towards A Software-Defined Architecture for Multi-function Wireless Sensor Networks”, in *IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, Shenzhen, China, Dec 2017. **(Best Student Paper Award)**

- [10] Xiuzhen Guo*, **Xiaolong Zheng**, Yuan He, “WiZig: Cross-Technology Energy Communication over a Noisy Channel”, in *IEEE International Conference on Computer Communications (INFOCOM)*, Atlanta, USA, May 2017.
- [9] **Xiaolong Zheng**, Jiliang Wang, Longfei Shangguan, Zimu Zhou, Yunhao Liu, “Smokey: Ubiquitous Smoking Detection with Commercial WiFi Infrastructures”, in *IEEE International Conference on Computer Communications (INFOCOM)*, San Francisco, USA, Apr 2016.
- [8] Meng Jin, Yuan He, **Xiaolong Zheng**, Dingyi Fang, Dan Xu, Tianzhang Xing, Xiaojiang Chen, “Smoggy-Link: Fingerprinting Interference for Predictable Wireless Concurrency”, in *International Conference on Network Protocols (ICNP)*, Singapore, Nov 2016.
- [7] Zhichao Cao, Jiliang Wang, Daibo Liu, **Xiaolong Zheng**, “Chase: Taming Concurrent Broadcast for Flooding in Asynchronous Duty Cycle Networks”, in *International Conference on Network Protocols (ICNP)*, Singapore, Nov 2016.
- [6] Longfei Shangguan, Zimu Zhou, **Xiaolong Zheng**, Lei Yang, Yunhao Liu, Jinsong Han, “ShopMiner: Mining Customer Shopping Behavior in Physical Clothing Stores with Passive RFIDs”, in *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, Seoul, South Korea, Nov 2015.
- [5] Daibo Liu, Mengshu Hou, Zhichao Cao, Yuan He, Xiaoyu Ji, **Xiaolong Zheng**, “COF: Exploiting Concurrency for Low Power Opportunistic Forwarding”, in *IEEE International Conference on Network Protocols (ICNP)*, San Francisco, USA, Nov 2015.
- [4] Jiliang Wang, **Xiaolong Zheng**, Xufei Mao, Zhichao Cao, Daibo Liu, Yunhao Liu, “Connecting the Dots: Reconstructing Network Behavior with Individual and Lossy Logs”, in *International Conference on Parallel Processing (ICPP)*, Beijing, China, Sep 2015.
- [3] **Xiaolong Zheng**, Zhichao Cao, Jiliang Wang, Yuan He, Yunhao Liu, “ZiSense: Towards Interference Resilient Duty Cycling in Wireless Sensor Networks”, in *ACM Conference on Embedded Networked Sensor Systems (SenSys)*, Memphis, USA, Nov 2014.
- [2] Longfei Shangguan, Zheng Yang, Zimu Zhou, **Xiaolong Zheng**, Chenshu Wu, Yunhao Liu, “CrossNavi: Enabling Crossroad Navigation for the Blind with Commodity Phones”, in *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, Seattle, USA, Sep 2014.
- [1] **Xiaolong Zheng**, Jiliang Wang, Wei Dong, Yuan He, Yunhao Liu, “Survival of the Fittest: Data Dissemination with Selective Negotiation in Wireless Sensor Networks”, in *IEEE International Conference on Mobile Ad-Hoc and Sensor Systems (MASS)*, Hangzhou, China, Oct 2013.

JOURNALS ARTICLES (* corresponding author)

- [7] **Xiaolong Zheng**, Jiliang Wang, Longfei Shangguan, Zimu Zhou, Yunhao Liu, “Design and Implementation of a CSI-based Ubiquitous Smoking Detection System”, submitted to *IEEE/ACM Transactions on Networking (ToN)*, vol. 25 no. 6, pp. 3781–3781. Oct 2017.
- [6] Zhichao Cao, Daibo Liu, Jiliang Wang, **Xiaolong Zheng**, “Chase: Taming Concurrent Broadcast for Flooding in Asynchronous Duty Cycle Networks”, submitted to *IEEE/ACM Transactions on Networking (ToN)*, vol. 25 no. 5, pp. 2872–2885. Oct 2017.
- [5] **Xiaolong Zheng**, Zhichao Cao, Jiliang Wang, Yuan He, Yunhao Liu, “Interference Resilient Duty Cycling for Sensor Networks under Co-existing Environments”, *IEEE Transactions on Communications (TCOM)*, vol. 65, no. 7, pp. 2971–2984, Jul 2017.
- [4] Zimu Zhou, Longfei Shangguan, **Xiaolong Zheng***, Lei Yang, Yunhao Liu, “Design and Implementation of an RFID-based Customer Shopping Behavior Mining System in Physical Clothing Stores”, *IEEE/ACM Transactions on Networking (ToN)*, vol. 25, no. 4, pp. 2405–2418, Apr 2017.
- [3] **Xiaolong Zheng**, Jiliang Wang, Wei Dong, Yuan He, Yunhao Liu, “Bulk Data Dissemination in Wireless Sensor Networks: Analysis, Implications and Improvement”, *IEEE Transactions on Computers (TC)*, vol. 65, no. 5, pp. 1428–1439, May 2016.
- [2] Jie Zhang, **Xiaolong Zheng**, Zhanyong Tang, Tianzhang Xing, Xiaojiang Chen, Dingyi Fang, Rong Li, Xiaoqing Gong, Feng Chen “Privacy Leakage in Mobile Sensing: Your Unlock Passwords Can Be Leaked through Wireless Hotspot Functionality”, *Mobile Information Systems*, Mar 2016.

- [1] **Xiaolong Zheng**, Meng Wan, “A Survey on Data Dissemination in Wireless Sensor Networks”, *Journal of Computer Science and Technology (JCST)*, vol. 29, no. 3, pp. 470–486, May 2014.

**PROFESSIONAL
SERVICES
& ACTIVITIES**

Submission Chair:

- IEEE TrustCom 2014

TPC Member:

- DCOSS 2018
- IEEE ICC 2017, 2018
- IEEE ISCC 2017, 2018
- IEEE ICPADS 2016, 2017
- IEEE ISPA 2016, 2017
- EWSN 2017 Poster & Demo
- WCSP 2017
- ACCSE 2017
- ITC 28 in Würzburg
- CCSNA 2016
- IWSSS 2016, 2017

Journal Reviewer:

- Transactions on Networking (ToN), Transactions on Mobile Computing (TMC), PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), IEEE Communications Magazine, Ad Hoc & Sensor Wireless Networks, Journal of Computer Science and Technology (JCST), Tsinghua Science and Technology (TST)

**HONORS
& AWARDS**

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|---|------|
| ▪ Best Student Paper Award, IEEE ICPADS 2017 | 2017 |
| ▪ The International Postdoctoral Exchange Fellowship Program (Recruitment Project)
Fund overseas PhD from top 100 universities with outstanding research outputs to work in China. | 2016 |
| ▪ Excellent Undergraduates of Liaoning Province | 2011 |
| ▪ National Scholarship for Undergraduates | 2011 |