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## EDUCATION

**PhD in Computer Science, Purdue University (West Lafayette, IN, USA**) **2011.08 – 2018.05 (Expected)**

- Research Interests*: Internet of Things (**IoT**) and Wireless Sensor Networks (**WSNs**)* GPA: 3.91/4.0

**B.S. in Electronic Engineering, University of Science and Technology of China (Hefei, China) 2007.09 – 2011.07**

## EXPERIENCE

### 2011.08 – Present Computer Science, Graduate Researcher (Indianapolis, IN, USA)

**IoT/WSN Protocols and Applications**

- Developed applications and tools to run and maintain an outdoor environmental monitoring sensor network testbed.
- **Downward Routing in IoT/WSNs.** Designed a reliable (>98%), energy efficient (negligible overhead), and extremely scalable downward routing protocol for IoT/WSN. Implemented in TinyOS/nesC for sensor platforms.
- **MobileDeluge**. Designed a mobile remote node reprogramming tool to reduce the labor for outdoor WSN testbed maintenance. Implemented in TinyOS/nesC for sensor platforms; developed PC side gateway in Java.
- **Routing Topology Recovery in IoT/WSNs.** Implemented and evaluated *compressed sensing* based routing topology recovery algorithms. Implemented in TinyOS/nesC for sensor platforms; developed PC side decompression in Python.
- **TelosB Sensor Board.** Designed a sensor board and driver code for TelosB mote to drive analog and digital sensors. Solved the clock drift problem of TelosB using a fridge, oscilloscope, and sensor driver in TinyOS/nesC.
- **GureenGame QoS Control**. Implemented and evaluated an extended Gur Game algorithm to autonomously control the number of reports from the WSNs.

**IoT/WSN Benchmark and Network Analysis**

- **IoT/WSN Benchmark.** Analyzed and extracting a benchmark data suite from an outdoor WSN testbed using Python.
- **Network Dynamics**. Characterized the network dynamics using concepts such as Laplacian Matix, node entropy, etc.

**Others**

- **Advisor**. Advised 4 master students for their thesis/independent study, 1 undergraduate student for the capstone.
- **Teach Assistant**. Data Communication & Computer Networks (53600, 43600), Wireless Sensor Networks (59000), Discrete Computational Structures (340000), and Internet of Things (49000).
- **Peer Reviewer**. IEEE Wireless Communications and Networking Conference (**WCNC**, 2016 – 2018), IEEE Local Computer Networks Conference (**LCN**, 2015 – 2016), International Journal of Distributed Sensor Networks (**IDJSN**, 2017)

### 2010.11 – 2011.05 Electronic Engineering, Capstone (USTC, Hefei, China)

- **Compressed Sensing for Data Collection in WSN**. Investigated and implemented compressed sensing algorithm for efficient data collection in WSNs and Cyber Physical Systems.

## SKILLS

- **Programming Languages**: nesC/C, Java, Python, Matlab, HTML
- **IoT/WSNs Platforms**: TinyOS, Contiki, Raspberry Pi, Arduino, TelosB, IRIS, MicaZ, Waspmote
- **Operating Systems**: Linux, Virtual Machines

## HONORS & AWARDS

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| 2018 | Gersting Award for Outstanding Graduate Student (CS@IUPUI) |
| 2014 | IEEE Travel Grant to attend IEEE MASS 2014 |

## PUBLICATIONS

- X. Zhong and Y. Liang, “Scalable Downward Routing for Wireless Sensor Networks and Internet of Things Actuation”, MobiHoc 2018 (submitted for review).
- G. Villalba, F. Plaza, X. Zhong, T. W. Davis, M. Navarro, Y. Li, T. A. Slater, Y. Liang, and X. Liang, “*A Networked Sensor System for the Analysis of Plot-Scale Hydrology*”, Sensors, 2017, *17(3)*, 636.
- X. Zhong and Y. Liang. “*Raspberry Pi: An Effective Vehicle in Teaching the Internet of Things in Computer Science and Engineering*”, Electronics (Basel), 2016.
- R. Liu, X. Zhong, Y. Liang, and J. He. “*Understanding Compressed Sensing Inspired Approaches for Path Reconstruction in Wireless Sensor Networks*”, SustainCom 2015.
- R. Liu, Y. Liang, and X. Zhong. “*Monitoring Routing Topology in Dynamic Wireless Sensor Network Systems*,” in ICNP, 2015.
- R. Liu, Y. Liang, and X. Zhong, “*Poster: Compressed Sensing Inspired Approaches for Path Reconstruction in Wireless Sensor Networks*”, in MobiHoc, 2015.
- X. Zhong, M. Navarro, G. Villalba, X. Liang, and Y. Liang. "*MobileDeluge: Mobile Code Dissemination for Wireless Sensor Networks*." In MASS, 2014.
- X. Zhong, M. Navarro, G. Villalba, X. Liang, and Y. Liang. "*Demo: MobileDeluge: A Novel Mobile Code Dissemination Tool for WSNs*." In MASS, 2014.
- M. Navarro, T. W. Davis, G. Villalba, Y, Li, X. Zhong, N. Erratt, X. Liang, and Y. Liang, "*Towards Long-Term Multi-Hop WSN Deployments for Environmental Monitoring: An Experimental Network Evaluation*." Journal of Sensor and Actuator Networks 3.4 (2014): 297-330.