Zhong, Xiaoyang

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EDUCATION

PhD in Computer Science 2011.08 – 2018.05

Purdue University (West Lafayette, IN, USA) GPA: 3.91

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

BS in Electronic Engineering 2007.09 – 2011.07

University of Science and Technology of China (Hefei, China) GPA: 3.45

EXPERIENCE

2011.08 – 2018.05 ***Graduate Researcher*** **(CS@Purdue University, Indianapolis, IN, USA)**

Wireless Sensor Networks

- Developed application for a WSNs deployment with around 100 nodes in a forest for hydrology research.
- Downward routing for individual node actuation. Reliable (>98%), energy efficient (negligible overhead), and extremely scalable in large-scale WSNs.
- Mobile command system and over-the-air programming for outdoor WSN testbed maintenance.
- Developed sensor board and sensor drivers for Decagon analog and digital sensors for TelosB platform.
- Analyzed network dynamics and devised a benchmark based on the heterogeneous WSN deployment.
- Routing topology reconstruction based on compressed sensing.
- Quality of service control based on Gur Game theory. Adapt the number of reports automatically.

Internet of Things

- Smart home using Raspberry Pi/Arduino to control home devices with CoAP protocol.
- Green house using TelosB platform to monitor temperature, humidity, and the soil moisture. Using RPL.
- Developed Python server to send notifications using email (SMTP) and SMS (Twilio).

Other

- Teach Assistant for Computer Networks, Wireless Sensor Networks, and Internet of Things.
- Peer Reviewer for IEEE Wireless Communications and Networking Conference (**WCNC**, 2016 – 2018), IEEE Local Computer Networks Conference (**LCN**, 2015 – 2016), and International Journal of Distributed Sensor Networks (**IDJSN**, 2017)

2010.11 – 2011.05 ***Capstone*** **(EE@USTC, Hefei, China)**

Compressed Sensing for Data Collection in WSN

- Implemented compressed sensing based data collection algorithm for WSN.

SKILLS

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

HONORS & AWARDS

- 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”, LCN 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.