

Mr. Shiyuan Zhang

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RESEARCH INTEREST

Wireless networks (MU-MIMO in 802.11ac), Cyber-Physical Systems, Mobile computing & Deep learning

EDUCATION

Xi'an Jiaotong University, China **09/2016-06/2019**

Major: Master of Computer Science and Technology

GPA: 86.5/100

Xi'an Jiaotong University, China **09/2012-06/2016**

Major: Bachelor of Computer Science and Technology

GPA: 86.96/100

RESEARCH EXPERIENCE

Lab of Smart Sensing and Mobile Computing, Xi'an Jiaotong University

Position: Graduate student researcher

Supervisor: Prof. Wei Xi

➤ **Crwdsourcing data based indoor localization** **10/2017-Present**

- Construct the WiFi fingerprint database without site survey utilizing massive indoor GPS sampling and manifold learning.
- Unsupervised floor determination for user in a multi-floor building via fingerprints clustering.

Funded by Tencent

➤ **Unnecessary CSI feedback reduction for MU-MIMO network** **06/2018-11/2018**

- Assess and improve the quality of CSI before data transmission.
- Estimate the device moving speed solely using physical layer information.
- Set channel coherence time according to device moving speed, and reuse historical CSI within channel coherence time.

➤ **WiFi imaging based human continuous activity recognition** **01/2018-05/2018**

- Use commodity 5300 NIC to build the human activity sensing system.
- Use WiFi imaging to show the shape of the object, and segment continuous human activities based on images.
- Attempt to use Deep Neural Network to learn deep representative features for CSI-based human sensing problems.

➤ **Driver drowsiness detection using smartwatch** **05/2017-12/2017**

- Combine steering (extracted from IMU sensors) and physiological (extracted from heart rate sensor) behaviours to jointly assess the drowsiness level of the driver. Features of time domain, frequency domain are extracted for driver drowsiness level classification.

Shaanxi Key Lab of Satellite-Terrestrial Network Tech. R&D, group of Medical big data, Xi'an Jiaotong University

Position: Undergraduate researcher intern

Supervisor: Prof. Buyue Qian

➤ **Collection and monitoring of Adverse Drug Reactions** **03/2015-09/2015**

- Use Scrapy to crawl drug instructions published on professional medical websites.
- Extract named entity of ingredients and adverse reactions from the unstructured text using Conditional Random Field.

Funded by Baidu

WORK EXPERIENCE

HKUST Fok Ying Tung Research Institute, Guangzhou, China **10/2017-09/2018**

Position: Part-time Research intern

Department of International Cooperation & Exchanges, Xi'an Jiaotong University **09/2015-06/2016**

Position: Student Assistant

Young Volunteers Association of Nanyang College, Xi'an Jiaotong University

09/2013-06/2014

Position: secretary

PUBLICATION & PATENT

Publication:

[1] **Shiyuan Zhang**, Wei Xi, Qigui Xu, Kun Zhao, Yuanhang Cai. **Accurate CSI Estimation to Eliminate Unnecessary Transmission for MU-MIMO Networks**. Accepted by **EWSN 2019**

[2] **Zhang S.**, He H., Wang Z., Gao M., Mao J. (2018) **Low-Power Listen Based Driver Drowsiness Detection System Using Smartwatch**. In: Sun X., Pan Z., Bertino E. (eds) Cloud Computing and Security. ICCCS 2018. Lecture Notes in Computer Science, vol 11067. Springer, Cham

Patent:

W. Xi, **S. Zhang**, J. Han, Y. Cai, K. Zhao, J. Zhao. **A CSI feedback reduction mechanism by checking its validity period**, 2017, China, 201710036013.8

In submission:

Wang, Fei, Jinsong Han, **Shiyuan Zhang**, Xu He, and Dong Huang. **CSI-Net: Unified Human Body Characterization and Action Recognition**. arXiv preprint arXiv:1810.03064 (2018)

SKILLS

Programming: Python > C > Java > C++>TensorFlow

Software: Matlab, Android Studio, Linux 802.11n CSI Tool, Labview, latex

Hardware: Intel 5300 NIC, USRP

HONORS & CERTIFICATES

Nominee , Committee of 100 Leadership Scholarship Program	2017
Completion , Sino-American Innovation and Entrepreneurship Program at Harvard University	2016
Outstanding Graduate (2 out of 25) , Xi'an Jiaotong University	2016
Siyuan Scholarship , Xi'an Jiaotong University	2014-2015
Excellent Student (2 out of 25) , Xi'an Jiaotong University	2013-2015
Guanghua Scholarship , Ruentex Group	2013
Silver Prize , ACM-ICPC Asia China Shaanxi Provincial Programming Contest	2013