ZHAO, Zhihe

zhihe.zhao14@student.xjtlu.edu.cn | (+86) 18896992152

ACADEMIC INTERESTS

- Mobile / Edge Computing, Wireless Sensor Networks, Deep learning and computer vision, Efficient inference of DNN models, Real-time embedded system,

EDUCATION BACKGROUND

Xi'an Jiaotong-Liverpool University (XJTLU), Suzhou, P.R.China 9/2014 – 7/2019
B.E. in Computer Science and Technology, Dept. of Computer Science and Software engineering
Overall GPA: 3.47/4.0 Major GPA: 3.8/4.0
Academic Excellent Award (16 - 17) | Ranked 1st/(5%) in Department
Academic Achievement Award (17 - 18) | Ranked 2st/(10%) in Department
National Scholarship (17 - 18) | 4 out of the whole school

CS Coursework: Java and C++, Networking, Advanced OO Programming, Software Engineering, Computer Systems, Database, Big Data Analysis, Computer System Security, Bio-computation.

EE Coursework: Engineering Mathematics, Continuous and Discrete Signals and Systems, Microprocessor systems, Instrumentation and Control System, Analogue and Digital Communications, Integrated Electronics and Design, Digital Electronics.

SELECTED PUBLICATIONS (AS FIRST AUTHOR)

- **Z. Zhao,** J. Wang, C. Fu, D. Liu, B. Li, *Demo Abstract: Smart City: a Real-time Environmental Monitoring System on Green Roof,* The 3rd ACM/IEEE International Conference on Internet-of-Things Design and Implementation (IoTDI, 2018), Orlando, Florida. DOI: 10.1109/IoTDI.2018.00049, April, 2018.
- **Z. Zhao,** J. Wang, C. Fu, D. Liu, B. Li, *Design of a Smart Sensor Network System for Real-Time Air Quality Monitoring on Green Roof,* Journal of Sensors 2018 (Sensing and Data-Driven Control for Smart Building and Smart City Systems (SBSCS)), Hindawi, DOI: 10.1155/2018/1987931
- **Z. Zhao,** Z. Jiang, N. Ling, X. Shuai, X. Guo, *Demo Abstract: ECRT: An Edge Computing System for Real-Time Image-based Object Tracking,* The 16th ACM Conference on Embedded Networked Sensor Systems (SenSys, 2018), ShenZhen, China. DOI: 10.1145/3274783.3275199, November, 2018

RESEARCH EXPERIENCES

Junior Research Assistant, The Chinese University of Hong Kong, *Advisor: Prof. Guoliang. Xing* 6/2018 – Now

- Did literature review on deep learning efficiency inference and edge computing.
- Designed and built an experimental setup of the edge computing based system for visual objects detection/tracking, using Nvidia TX2 and Raspberry Pi3 separately as the edge server and the IoT device; A first-author demo abstract presented at **SenSys, 2018**.
- Participated in weekly team meeting and paper review seminars; bolstered ability for conducting independent research.
- Continuous research is being conducted after I went back school. A Reinforcement Learning based policy network is designed to do fine-grained selection in action space including position of partition/early-exit point.
- Preparing for the **MobiCom, 2019** paper submission based on the current research project.

Project Leader, Wind Tunnel Real-Time Data Monitoring System, XJTLU, *Advisor: Prof. Dawei Liu* 5/2017 – 5/2018

- Led a team of five to develop an embedded system, a real-time data monitoring system for modeling outdoor environment in a wind tunnel.
- Designed the system architecture integrating mechanical actuators, electronic devices, wireless sensor networks, and cloud computing platform. Spearheaded a team effort to develop a raw(sensor) data collection/transmission structure based on STM32 and ESP8266, a web GUI with sophisticated visualization functionality and a back-end cloud-computing framework using Node.js, MQTT and MongoDB.
- Research work led to a first-author demo abstract which was presented at **IoTDI, 2018** in Florida and a first-author Journal paper published by **Journal of Sensors, Hindawi.**
- Significantly bolstered technical leadership, Multi-tasking and interpersonal skills.

TEACHING EXPERIENCES

Teaching Assistant, Innovation Lab, XJTLU
9/2015-7/2016
- Worked as an undergraduate student teaching assistant to offer weekly one-hour tutorial on MCU development and C/C++/Python programming.
- Designed problem sheet and held a two-hour Q&A session to answer students' questions on a weekly basis.

INTERNSHIP EXPERIENCES

Embedded Software Engineer Intern, Rt-Thread Electronic Technology Co. Ltd., Shanghai, China
2/2017-6/2017
- Gained experience on design and implement of embedded system based on RTOS (Real Time Operating System).
- Helped with writing technical manual, focused on transplanting RT-Thread(RTOS) to STM32F4.

Co-Founder, YouDu Smart Technology Co., Ltd., Suzhou, China (Took a gap year in 15-16)
10/2015-3/2017
- Established a start-up company which aimed to develop smart home devices with a venture capital financing of $1M.
- Analyzed the market and pricing strategy by attending 10+ smart home expos and visiting relevant enterprises; compiled a suite of detailed technical reports for future reference.
- Developed embedded hardware based on STM32, S3C2440, RT5350, Zigbee chips and ESP series.

EXTRACURRICULAR EXPERIENCES

Team Leader and Technical Supporter, "Freescale Cup" Intelligent Vehicle Competition, XJTLU
2016 & 2017
- Established the first team at XJTLU to attend the competition; Garnered the national 2nd prize.
- Leveraged resources on/off-campus to provide technical support to the team.
- Provided technical guidance to the team on micro-controller development as well as image processing algorithms such as Kalman Filter.

Co-Founder, XJTLU Innovation Laboratory, Suzhou, China
7/2015 - Present
- Proposed mission statement and strategic plan overarching the development of the lab; secured external resources concerning technical training; established a hierarchy of technical staff with 20+ core members and 50+ team members in total.
- Promoted in-depth self-study among students on various technical subjects, e.g., mechanical system, embedded system, and electronics.
- Reinforced the reputation of XJTLU's education in electrical engineering and computer science.

Software Architect and Python Programmer, HACKxFDU Hackathon Competition
11/2017
- Developed with the team an intelligent music recommending system; ranked top 8 among 70 participating teams.
- In responsible of a. Development of facial expression recognition based on CNN; 2) Development of detection of emotional and language tones in music (lyrics) based on IBM Watson™ Tone Analyer; 3) Development of music (lyrics) retrieval from NetEase w/ a Python web crawler

Student Representative, Students' Union at XJTLU
9/2016 - 3/2017
- Attended department's weekly meetings, representing students on giving feedback concerning to academic life and coursework.

SKILLS AND CERTIFICATIONS

- **Software:** C/C++/Java/Python/Tensorflow/Pytorch/Matlab/Latex/Javascript
- Web Programming, OS Programming such as multi-thread computing.
- Database such as MySQL and MongoDB
- **Hardware:** MCU Development: CORTEX-M3 based chips/ARM9(S3C2440) /ESP8266/NVIDIA TX2
- Familiar with hardware protocol such as SPI, IIC and CAN bus; PCB design (Altium Designer)

STANDARDIZED TEST

GRE General: V: 152 / Q: 168 / AW: 3 / Total: 320 | **TOEFL:** L:25 / S:22 / R:28 / W:25 / Total:100