Beitong Tian

502 W. Griggs St., Urbana, IL 61801
(607) 319-9124 | beitong2@illinois.edu | beitongt.github.io

EDUCATION

University of Illinois Urbana-Champaign, Ph.D. student, Computer Science, 3.95/4.0. Aug. 2019–Ongoing
Cornell University, Master of Engineering, Electrical and Computer Engineering, 3.93/4.0 Aug. 2017–Dec. 2018
Southeast University, Bachelor of Engineering, Electronic Science and Engineering, 3.4/4.0 Aug. 2013–July. 2017

RESEARCH INTEREST

Cyber-Physical System, Wireless Sensor Network, Data Analysis, Security

RESEARCH EXPERIENCE

Graduate Research Assistant June 2020-Ongoing
Multimedia Operating Systems and Networking (MONET) Research Group, Champaign, IL

- Designed and deployed a scalable and extensible wireless sensor network for environmental data acquisition and visualization in the lithography clean room for Sensory Network infrastructure for Scientific Lab Environments (SENSELET) project.
- Developing an online, context-aware and intelligent anomaly detection system for the above system.

Independent Research: A Partition-Tolerant Blockchain for the Internet-of-Things Oct. 2018-Dec. 2018
Computer Science, Cornell University, Ithaca, NY

- Building a trusted partition-tolerant blockchain on Android device leveraging ARM TrustZone Technology.

R&D Software Engineer Intern June 2018-Aug. 2018
Wireless R&D Team, FORTINET, Sunnyvale, CA

- Developed, maintained and tested a forward traffic log feature for Access Controller OS, using socket for process communication, RBtree and caching to speed up the system.
- Debugged and fixed local configure system for an OpenWrt based Access Point.
- Designed and implemented scripts to interact with Access Controller and Access Point to auto test channel features.

Undergraduate Research Assistant Feb. 2016-July 2017
Micro-Nano Biology System Lab, MEMS Lab, Southeast University, Nanjing, China

- Designed, developed and tested a microfluidic & embedded control system to identify and sort nematodes automatically.
- Analyzed experimental data with oscilloscope, signal generator, and spectrum analyzer.
- Programmed data process program with MATLAB.

PREVIOUS PROJECT

ECE598 HH Course Final Project: A location measurement system for indoor static sensors Sept. 2020-Dec. 2020
Team Leader, University of Illinois Urbana-Champaign, Champaign, IL

- Designed and developed a prototype to accurately measure the coordinate of sensors deployed in a complex indoor environment with the ultra-wideband module, infrared sensor and Inertial measurement unit (IMU).

CS598 GW Course Final Project: Semi-Targeted Password Cracking via Keywords. Sept. 2019-Dec. 2019
Team Leader, University of Illinois Urbana-Champaign, Champaign, IL

- Train a recurrent neural network on password dataset to generate the password list.
- Use targeted keywords to sort the candidate password list to increase the success rate.

ECE5725 Course Final Project: Propeller Displayer Based on Arduino and Raspberry Pi Nov. 2017-Dec. 2017
Team Leader, Cornell University, Ithaca, NY

- Designed, assembled and refined the circuits and whole system structure.
- Programmed and debugged C and Python based program on Arduino and Raspberry Pi.
- Transmitted data from Raspberry Pi to Arduino via Bluetooth module for music spectrum display and controlled hall sensor, LED strip and motor in the system.

Intelligent Interface for Fitness Center Summer 2016

Team leader, Southeast University, Nanjing, China

- Conceptualized, developed, and produced an intelligent interface for fitness center machines based on Linux with Heart Rate sensor, EMG sensor, Camera and RFID recognition function.
- Designed and made a smart IoT device consists of infrared distance sensor, CC2541 Bluetooth module with 8051 MCU, 3D printing shell, and power supply system to automatically record exercise data.
- Presented the project in *ISIPS 2016 (10th International collaboration Symposium on Information Production and Systems)*.

National Undergraduate Electronic Design Contest: Lithium Battery Charge/Discharge System July 2015-Dec. 2015

Team leader, Zhejiang University, Hangzhou, China & Southeast University, Nanjing, China

- Created STM32-based embedded system to implement the functions of measure, control, and display.
- Won the national 1st prize for bidirectional DC-DC converter for lithium battery system which is finished in 3 days.

PUBLICATION

- Zhu, Z., Chen, W., **Tian, B.**, Luo, Y., Lan, J., Wu, D., ... & Pan, D. (2018). Using microfluidic impedance cytometry to measure C. elegans worms and identify their developmental stages. Sensors and Actuators B: Chemical.
- Chen, W., **Tian, B.**, Lan, J., Chen, D., & Zhu, Z. (2017, June). Using microfluidic impedance cytometry to identify the life stages of C. elegans nematodes. In Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS), 2017 19th International Conference on (pp. 1628-1631). IEEE

PATENT

- **B. Tian**, "A New Bluetooth Audio Speaker" (Utility Model Patent, Grant), patented by State Intellectual Property Office of the PRC (Patent No.: CN 205545858 U).
- **B. Tian**, G. Hou, Z. Zhao, "A Smart Gym Lock Pin & Intelligent Gymnasium System" (Invention Patent, Application), patented by State Intellectual Property Office of the PRC (Patent No.: CN 106310639 A).

TEACHING

- **CS241: System Programming,** University of Illinois Urbana-Champaign, Teaching Assistant. Fall 2019 & Spring 2020

SKILLS

Hardware Raspberry Pi, Arduino, Printed Circuit Board(PCB) design, 3D-printing.

Software MATLAB, Eagle, AutoDesk Fusion 360.

Programming C, Python, GO, Java, CSS, HTML, JavaScript.