Yang-Hsi Su

Email: devilsu@umich.edu · Cell: 734-881-3035 · ANN ARBOR, MI

Research Statement:
My research focuses on applying signal processing and machine learning methods on radio/camera systems towards building real-time, low-cost sensing and localization solutions.

Technical Skills:
C/C++, Python, Matlab, GNURadio, Linux

EDUCATION

University of Michigan — Ann Arbor, MI
- Doctor of Philosophy in Electrical and Computer Engineering (Communication track) — Sep, 2020 - now
- Advisor: Alanson Sample

University of Michigan — Ann Arbor, MI
- Master of Science in Electrical and Computer Engineering (Communication track) — Sep, 2018 - Apr, 2020
GPA : **3.92**/4

National Tsing Hua University — Hsinchu, Taiwan
- Bachelor of Science in Electrical Engineering — Sep, 2013 - Jun, 2017
GPA : **3.63**/4

PUBLICATION

Single Packet, Single Channel, Switched Antenna Array for RF Localization
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (Ubicomp '23)
Yang-Hsi Su, Chouchang (Jack) Yang, Euiseok Hwang, Alanson Sample

TomoID: A Scalable Approach to Device Free Indoor Localization via RFID Tomography
IEEE International Conference on Computer Communications (InfoCom '23), 19.2% acceptance rate
Yang-Hsi Su, Jingliang Ren, Zi Qian, David Fouhey, Alanson Sample

EXPERIENCE

Sensing Algorithm Intern — May - Aug, 2023
MediaTek, San Jose, CA

Graduate Student Instructor — Sep - Dec, 2021
University of Michigan, Ann Arbor
Course: Engineering and Interactive System for HCI
- Hosted office hours and lab sessions
- Constructed labs including all-in-one data collection, machine learning, and real-time inferencing pipeline

Invited talks and keynotes on Device-Free Indoor Localization via RFID Tomography — Apr, 2021
2021 IEEE International Conference on RFID
Workshop on Wireless Motion and Fine Scale localization

Research Assistant — Apr - Jul, 2018
National Tsing Hua University, Taiwan
Project: Distributed Computation Deep Neural Network for Automobile
- Decompose deep neural networks (googleIV4, MobileNet, VGG16) for distributed computing nodes
- Algorithm includes cost-balanced edge finding in network, throughput and latency evaluation

Research Assistant — Jan - Sep, 2017
Academia Sinica, Taiwan
Project: Bluetooth Low Energy Sensor Network Real Time Location Tracking
- RSS-based 3 points localization and Kalman filter (RaspberryPi and LinkitOne as receivers, EcoBT super as transmitters)

Teaching Assistant — Feb - Jun, 2017
National Tsing Hua University, Taiwan
Course: Embedded System Laboratory
- Constructed lab contents, including wire, wireless connection, sensor modules, BB car and root file system

PROJECTS

Multi-Camera Multi-Target Tracking with RF-assisted IDing Sep, 2023 - now

mm-Wave SFCW Radar 3D Point Cloud Reconstruction May, 2021 - now

49-Element Ultrasound Microphone Array + Camera Sep, 2023 - now
- Real time sound source visualization and localization

Device-Free Human Pose Reconstruction with Wall of RFID tags Sep, 2019 - Dec, 2019
- Impinj RFID reader inferencing a wall of RFID tags ~5m away from the reader antenna
- Real time prediction of the user's body key points with a custom ResNet (RFID readings as input)

5 by 5 Microphone Array (UofM EECS473) Sep, 2019 - Dec, 2019
- PDM (Pulse-Density Modulation) microphones with CIC filter
- ICA decomposition for source separation and delay-and-sum beam steering

AWARD AND SCHOLARSHIP

Elected as 2015 Chun-Tsung Scholar of National Tsing Hua University (1 of the 2) Jul - Aug, 2015
- Exchange scholar to ShangHai Jiao Tong University
- Developed an Android application turning smartphones into optical mouse using 3-axis accelerometer