

Mei Wang

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EDUCATION

University of Texas at Austin 08/2016 – Present

Ph.D. candidate in Computer Science

- Supervised by **Prof. Lili Qiu** in Wireless Networking and Communications Group (WNCG).

Shanghai Jiao Tong University 09/2012 - 06/2016

B.S.E. in Electronics and Electric Engineering

Minor in Computer Science

- Supervised by **Prof. Xinbing Wang** in Research Center of Intelligent Internet of Things (IIoT).

PUBLICATIONS

[1] **Mei. Wang**, Z. Zhang, X. Tian, X. Wang, “**Temporal Correlation of the RSS Improves Accuracy of Fingerprinting Localization**”, in *Proc. IEEE INFOCOM*, 2016.

[2] X. Tian, **Mei Wang**, W. Li, D. Xu and X. Wang. “**Improve Accuracy of Fingerprinting Localization with Temporal Correlation of the RSS**”, submitted to *IEEE Transactions on Mobile Computing*, 2016.

[3] **Mei Wang**, Kaisheng Zhang, Bangyang Wei, Jian Sun. “**Identification and Prediction of Large Pedestrian Flow in Urban Areas based on Hybrid Detection Approach**”, submitted to *Sustainability*, 2016.

[4] **Mei Wang**, X. Dong, W. Li, X. Tian, X. Wang. “A method to improve the accuracy of fingerprinting localization utilizing the temporal correlation of RSS”, China, Invention Patent, 201610038359.7

RESEARCH EXPERIENCES

Research on Acoustic Imaging on Mobile Device 08/2016 - Present

Signal Processing & Mobile Computing

Group Member

- Use Synthetic-Aperture-Radar (SAR) techniques to address Acoustic Imaging problem on mobile devices.
- Apply Phase Format Algorithms (PFA) on received reflected audio signal to generate basic images of an object and improve the resolution by Phase Gradient Auto-focus (PGA) and Range Mitigation Algorithms.
- Localize mobile device trajectory by sending FMCW audio signal so as to improve the aperture accuracy.

Research on Temporal Correlation of RSS in Fingerprint-based Localization 03/2015 - 06/2016

Indoor localization

Group Leader

- Modeled a theoretical framework on fundamental limits of fingerprint-based localization with accuracy and reliability when considering the temporal correlation of signal strength.
- Explained the mechanism that how temporal correlation of the Received Signal Strength (RSS) can correct the localization determination criteria for MLE by theoretical derivation.
- Derived experiments to analyze the temporal correlation performances on localization for time slot, distance, device and environment with corroborated results for theoretical analysis.

Resource Allocation for Virtualized Mobile Core Networks 01/2015 - 03/2016

Cellular Network

Group leader

- Built up Traffic Model for the activities of substantial mobile users in communication cellular network.
- Developed a synthetic approach to dynamically allocate resources in virtualized mobile core networks.
- Designed adaptive and dynamic optimization algorithms for capacity improvement in this NFV framework.

Location Based Services (LBS) System for Foxconn Company 07/2015 - 10/2015

iOS Indoor Localization System

iOS team leader

- Developed iOS LBS application for indoor localization including RSS scanning, Map displaying, Pedometer, Information management as well as Sever communication components.
- Designed and implemented the localization determination algorithms with both online Wi-Fi RSS fingerprint based clustering method and Bluetooth offline gradient descent method.

Dallas Cooperation Project of Ericsson and IWCT SJTU

07/2014 - 03/2015

*Communication System**Core member*

- Renovated the traffic model as state machine and probability matrix for user activities in WCDMA network.
- Wrote a simulation software by C++ to model the stability distribution of user behavior in 3GPP network.
- Simulated the traffic packages and user activity translation by MATLAB to prove the stability of model.

Crowdsourcing based Lane-level Vehicular Localization utilizing Smartphones

09/2014 - 01/2015

*Intelligent Transportation**Member*

- Leveraged smartphone sensors, integrated through Kalman Filter and IMM filter to find vehicles' trajectories.
- Determined the number of lanes of the road on-time and classified the vehicle location by k-means algorithm.

ACADEMIC PROJECTS & COMPETITIONS**Identification, Analysis and Warning for Large Pedestrian Flow in Urban Areas** 06/2015 -06/2016*2015 3rd Chun-Tsung Program of SJTU**Leader*

- Created a dynamic model for large pedestrian flow with consideration of variety of factors and integrated methodologies with localization, video analysis and RFID for urban areas.
- Warned the peak flow by reasonable thresholds of velocity, density and counting. Provided evacuation measures combining pedestrian prediction and network topology of the road.
- Verified the model and algorithms by using Legion pedestrian simulation system in some typical regions.

A Map-Generating and Speed Optimizing Driving System

11/2014 - 11/2015

*The 7th University Innovative Participate Program in Shanghai**Member*

- Generated a road map and inferred traffic signal schedules, using only smartphones and a server, automatically crowdsourcing from sensors like accelerator, gyroscope and GPS modules.
- Excavated the traffic signal schedule in complex intersections by learning the traffic light deduction algorithms and traffic signal phases, with simulation result of less than 1 second error.
- Provided a recommended speed for drivers to maximize the probability that vehicles cruise through intersections in green phase without brakes so as to reduce energy consumption.

"LoveDrop" Android Application Development

12/2014

*2014 Google Girls Hackathon Party**Member*

- Developed an Android application named as "Love Drop", a game application for lovers in this hackathon party, only opened for women student engineers held by Google Shanghai.
- Exploited three main functions of this LoveDrop game app – the love tree cultivation for beautiful memory, the beat vent tool game for catharsis, and a log history for dairy growth.

SELECTED AWARDS

- Excellent Bachelor Thesis of Shanghai Jiao Tong University in 2016 (Top 1%) 2016
- Outstanding Graduate of Shanghai in 2016 2016
- Fan Xuji Scholarship (Top 5%) 2013-2015
- Academic Excellence Scholarship of SJTU (Top 10%) 2013-2015
- National Encouragement Scholarship (Top 10%) 2013
- Pan Wenyuan Scholarship (Top 5%) 2013
- "Merit Student" and Excellent League Member of Shanghai Jiao Tong University 2013
- Winning prize of 3rd Tsien Hsueshen Cup College Students technological innovation contest 2015
- First prize in Google Girls Hackathon Party 2014
- Third prize of the fifth PRO-FACE Man-machine interface programming contest 2012

ACADEMIC ACTIVITIES

Teaching Assistant

Fall 2016

University of Texas at Austin

- Grading iOS homework and debugging programming problems for a 50-student *iOS Mobile Computing* course.

Invited Reviewer

Since 2015

University of Texas at Austin & Shanghai Jiaotong University

- I am an invited or external reviewer for IEEE INFOCOM 2016, IEEE Transactions on Mobile Computing 2016, IEEE Transactions on Vehicular Technology 2016, and Wireless Networks 2016, IEEE Network Magazine 2015.

Exchange Experience

August 2014

National Chiao Tung University

- I am a guest student in National Chiao Tung University Summer Academic Exchange Camp.

EXTRACURRICULAR ACTIVITIES

Student Organizations and Volunteer Activities

09/2012 - 09/2015

Shanghai Jiao Tong University

- Director of Organization Department of Community Committee in SEIEE
- College Women Basketball Team / Xizhou Guqin Society / Student Choir of SJTU
- Volunteered in Shanghai International Marathon, Shanghai Science and Technology Museum, etc.

Volunteering Activities

09/2012 - 09/2015

Shanghai Jiao Tong University

- Volunteered in Shanghai Railway Station, Freshman welcome meeting, Wujing Social Environment-friendly publicity, Shanghai International Marathon, Shanghai Science and Technology Museum. Blood donation.

TECHNICAL STRENGTHS

Programming Skills: Python, C++, MATLAB, Swift, Java, Mathematica, LabVIEW, \LaTeX