MEI WANG

The Univ. of Texas at Austin

3rd-Year CS Ph.D. Student

meiwang@utexas.edu

(+1) 512-439-9474

www.cs.utexas.edu/~meiwang

About Me

Mei Wang is currently a third-year Ph.D. candidate in Computer Science Department at University of Texas at Austin. She received B.S.E. degrees in Electronic Engineering and Computer Science from Shanghai Jiao Tong University in 2016. Her current research interests include mobile sensing and deep learning, especially for temporal and spatial sequential data analysis with application to localization and tracking. She has published papers in top conferences and journals like Infocom, MobiSys and TMC and recently gets Best Paper Award in ACM MobiSys 2018.

Skills

- Python
- MATLAB
- C++
- Swift(iOS)
- JAVA(Android)
- LaTeX
- MS Offices

Interests

My research focuses on learning from wireless signals to build mobile systems for tracking, imaging and positioning applications. My works lay in the intersection of mobile sensing, signal processing, and deep learning.

Education

Since 2016 — The University of Texas at Austin — Austin, TX, US
Ph.D. candidate in Computer Science
Advisor: Prof. Lili Qiu.

2012-2016 — Shanghai Jiao Tong Univerisity — Shanghai, CHN
B.S.E. in Computer Science and Electronic Engineering
Advisor: Prof. Xinbing Wang & Prof. Xiaohua Tian

Professional Experiences

Summer 18 — JD.com, Inc. — Mountain View, CA
R&D Intern, Advertisement Recommendation Team

2016-2018 — The University of Texas at Austin — Austin, TX
Teaching Assistant, CS378/CS329E iOS Mobile Computing

2015-2016 — Ericsson Corp. — Shanghai, CHN
Lab Assistant, 'Dallas' 3GPP Project Group

2015 — Foxconn Company — Shanghai, CHN
Student Assistant, Indoor Positioning Corporation Team

Publications

2018 W. Mao, **Mei Wang**, W. Sun, S. Pradhan, L. Qiu, "RNN-based Room Scale Motion Tracking", submitted to Proceedings of ACM MOBICOM 2019.

2018 **Mei Wang**, W. Li, Y. Yan, "From Past to Present: Personalized Attention Session-Aware RNN Recommender System" , in preparation of 36th International Conference on Machine Learning (ICML) 2019.

2018 W. Mao, **Mei Wang**, L. Qiu, "AIM: Acoustic Imaging on a Mobile," *Best Paper Award*, in Proceedings of ACM MOBISYS 2018.

2017 X. Tian, **Mei Wang**, W. Li, D. Xu and X. Wang. "Improve Accuracy of Fingerprinting Localization with Temporal Correlation of the RSS", in IEEE Transactions on Mobile Computing (TMC) 2017.

2016 **Mei Wang**, Z. Zhang, X. Tian, X. Wang, "Temporal Correlation of the RSS Improves Accuracy of Fingerprinting Localization", in Proc. IEEE INFOCOM, 2016.

2016 K. Zhang, **Mei Wang**, B. Wei, and D. J. Sun. "Identification and Prediction of Large Pedestrian Flow in Urban Areas Based on a Hybrid Detection Approach." Sustainability 9, no. 1 (2016): 36.

Patents

2016 **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.

Awards

2018 Best Paper Award on MobiSys 2018.
2016 Excellent Bachelor Thesis of Shanghai Jiao Tong University (Top 1%).
2016 Outstanding Graduate in Shanghai (Top5%).
2015-2016 Chuntsung Scholarship (Top 1%)
2013-2015 Fan Xuji Scholarship (Top 3%).
2013-2015 Academic Excellence Scholarship of SJTU (Top 10%).
2013 National Encouragement Scholarship (Top 10%).
2013 Pan Wenyuan Scholarship (Top 5%).
2012 Jin Qingyang Scholarship (Top10%).
2012 Merit Student and League Member of Shanghai Jiao Tong University.

Research Experiences & Projects

2018 Summer — Personalized Attention Session-Aware RNN Recommender System. — Preparing for Submission

- We propose PASAR, a novel session-aware recommender system model, to seamlessly integrate intra-session and inter-session profiles.
- We offer an extendable attention scheme to leverage temporal dynamics scheme to enhance session-based RS in time dimension.
- We include long-term user profiles for session-based RS to learn the cross-session pattern and user favorite evolution in a seamless way.
- We conduct extensive experiments on four real datasets and demonstrate the effectiveness of PASAR for personalized recommendation.

2017-2018 — RNN-Based Room Scale Acoustic Motion Tracking. — MOBICOM'19 Submission

- We jointly estimate distance and angle-of-arrival (AoA) of hand reflection by 2D MUSIC.
- We design signal processing techniques to enhance the quality of profiles under low SNR.
- We feed the history profiles into RNN to remove the impact of interference and mobility.
- Our system first achieves 1-3 cm error within 4.5 m range supports tracking multiple users.

2016-2017 — AIM: Acoustic Imaging on a Mobile. — MOBISYS'18 BEST PAPER

- We use Synthetic Aperture Radar (SAR) to image an object by moving a phone along a predefined trajectory to mimic a virtual sensor array.
- We develop a 2-stage interference cancellation scheme to compensate trajectory errors from hand jitters and minimize the impact of signal distortion.
- We implement a proof-of-concept system on Samsung S7 and demonstrate the feasibility and effectiveness of acoustic imaging under darkness and obstruction.

2015-2016 — Temporal Correlation of RSS Improves Fingerprint-based Localization. — INFOCOM'16, TMC'17

- Modeled and analyzed the fundamental limits of fingerprint localization by temporal info of RSS.
- Explained how temporal correlation of RSS can correct the localization criteria for MLE model.
- Conducted experiments to demonstrate the improvement from temporal correlation for localization.

06/2015-06/2016 — Data Prediction for Large Pedestrian Flow — China Telecom, Shanghai, CHN.

- 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.

05/2015-01/2016 — Indoor Positioning System iOS App — Foxconn Company, Shanghai, CHN.

- 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.

07/2014-04/2015 — 'Dallas' Cellular Network Simulation Toolbox — Ericsson Corp., Shanghai, CHN.

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