

# Shiwei Fang

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## EDUCATION

- 2015 - 2021 **University of North Carolina at Chapel Hill**, Chapel Hill, NC  
Doctor of Philosophy (Ph.D.) in Computer Science  
Advisor: *Shahriar Nirjon*  
Dissertation Title: *Using Radio Frequency and Motion Sensing to Improve Camera Sensor Systems*
- 2011 - 2015 **SUNY, Stony Brook University**, Stony Brook, NY  
Bachelor of Engineering in Computer Engineering  
Minor in Computer Science

## PROFESSIONAL EXPERIENCE

- 2023 - Present **Augusta University**, Augusta, GA  
School of Computer and Cyber Sciences  
*Assistant Professor*
- 2021 - 2023 **University of Massachusetts Amherst**, Amherst, MA  
Manning College of Information and Computer Sciences  
*Postdoctoral Research Associate*
- Summer 2020 **Bosch Research and Technology Center**, Pittsburgh, PA  
*AI for Multimodal Sensor Fusion Research Intern*
- Summer 2019 **Bosch Research and Technology Center**, Pittsburgh, PA  
*AI for Multimodal Sensor Fusion Research Intern*

## PUBLICATIONS

### Journal & Conference

1. Mohammad Mehdi Rastikerdar, Jin Huang, **Shiwei Fang**, Hui Guan, Deepak Ganesan. "CACTUS: Dynamically Switchable Context-aware micro-Classifiers for Efficient IoT Inference". In *Proceedings of the 22nd Annual International Conference on Mobile Systems, Applications and Services (MobiSys)*, IEEE, June 2024
2. Marlin, Benjamin M., Niranjani Suri, **Shiwei Fang**, Mani B. Srivastava, Colin Samplawski, Ziqi Wang, and Maggie Wigness. "IoBT-MAX: a Multimodal Analytics eXperimentation Testbed for IoBT Research". In *MILCOM 2023-2023 IEEE Military Communications Conference (MILCOM)*, IEEE, Oct. 2023
3. Sirajum Munir\*, Hongkai Chen\*, **Shiwei Fang\***, Mahathir Monjur, Shan Lin, Shahriar Nirjon. "CarFi: Rider Side Localization using Wi-Fi CSI". *2023 IEEE 20th International Conference on Mobile Ad Hoc and Smart Systems (MASS)*, IEEE, Sept. 2023. (\* equal contribution)
4. Colin Samplawski, **Shiwei Fang**, Ziqi Wang, Deepak Ganesan, Mani Srivastava, and Benjamin M. Marlin. "Heteroskedastic geospatial tracking with distributed camera networks". In *Proceedings of the Thirty-Ninth Conference on Uncertainty in Artificial Intelligence (UAI '23)*, July 2023.
5. **Shiwei Fang**, Jin Huang, Colin Samplawski, Deepak Ganesan, Benjamin Marlin, Tarek Abdelzaher, and Maggie B. Wigness. "Optimizing Intelligent Edge-clouds with Partitioning, Compression and Speculative Inference." *Military Communication Conference (MILCOM)*. IEEE, Dec. 2021.
6. **Shiwei Fang**, Ketan Mayer-Patel, and Shahriar Nirjon. "Exploiting Scene and Body Contexts in Controlling Continuous Vision Body Cameras." *Ad Hoc Networks Journal, Elsevier*, Volumn 113, Mar. 2021.
7. **Shiwei Fang**, Md Tamzeed Islam, Sirajum Munir, Shahriar Nirjon. "EyeFi: Fast Human Identification Through Vision and WiFi-based Trajectory Matching." In *Proceedings of the 16th International Conference on Distributed Computing in Sensor Systems (DCOSS)*, IEEE, June 2020.
8. **Shiwei Fang**, Shahriar Nirjon. "SuperRF: AI-Enhanced Fast 3D RF Representation Using Low-Cost mmWave Radar." In *Proceedings of the International Conference on Embedded Wireless Systems and Networks (EWSN)*, ACM, Feb. 2020.
9. **Shiwei Fang**, Ketan Mayer-Patel, and Shahriar Nirjon. "ZenCam: Context-Driven Control of Autonomous Body Cameras." In *Proceedings of the 15th International Conference on Distributed Computing in Sensor Systems (DCOSS)*, IEEE, May 2019. **Best Paper Award.**

10. **Shiwei Fang**, Emre Salman, "Low Swing TSV Signaling using Novel Level Shifters with Single Supply Voltage," *In Proceedings of the IEEE International Symposium on Circuits and Systems (ISCAS)*. IEEE, May 2015.

## Workshop & Poster & Demo & Preprint

1. Yue Zhang, Shangjie Du, Jiqing Wen, Robert Likamwa, **Shiwei Fang**, Shijia Pan. "PrivaSee: Augmented Reality-Enabled Privacy Perception Visualization for Internet of Things". *In Proceedings of the 22nd Annual International Conference on Mobile Systems, Applications and Services (MobiSys)*. IEEE, June 2024.
2. Ho Lyun Jeong, Ziqi Wang, Colin Samplawski, Jason Wu, **Shiwei Fang**, Lance M. Kaplan, Deepak Ganesan, Benjamin Marlin, Mani Srivastava. "GDTM: An Indoor Geospatial Tracking Dataset with Distributed Multimodal Sensors". *arXiv:2402.14136*. Feb. 2024
3. Rastikerdar, Mohammad Mehdi, Jin Huang, **Shiwei Fang**, Hui Guan, and Deepak Ganesan. "Efficient IoT Inference via Context-Awareness". *arXiv:2310.19112*. Oct. 2023
4. Yue Zhang, **Shiwei Fang**, Carlos Ruiz, Zhizhang Hu, Shubham Rohal, and Shijia Pan. "Augmenting Vibration-Based Customer-Product Interaction Recognition with Sparse Load Sensing". *In Proceedings of Cyber-Physical Systems and Internet of Things Week 2023 (CPS-IoT Week '23)*, ACM. May 2023
5. **Shiwei Fang**, Ankur Sarker, Ziqi Wang, Mani Srivastava, Benjamin Marlin, and Deepak Ganesan. "Design and Deployment of a Multi-Modal Multi-Node Sensor Data Collection Platform." *In The Fifth International Workshop on Data: Acquisition To Analysis (DATA)*. ACM, Nov. 2022.
6. **Shiwei Fang**, Sirajum Munir, Shahriar Nirjon. "Demo Abstract: Fusing WiFi and Camera for Fast Motion Tracking and Person Identification." *In Proceedings of the 18th ACM Conference on Embedded Networked Sensor Systems (SenSys)*. ACM, Nov. 2020.
7. **Shiwei Fang**, Sirajum Munir, Shahriar Nirjon. "Dataset: Person Tracking and Identification using Cameras and Wi-Fi Channel State Information (CSI) from Smartphones." *In Proceedings of the 3rd Workshop on Data Acquisition To Analysis (DATA)*. ACM, Nov. 2020.
8. **Shiwei Fang**, Ron Alterovitz, Shahriar Nirjon. "Non-Line-of-Sight Around the Corner Human Presence Detection Using Commodity WiFi Devices." *In Proceedings of the 2019 Workshop on Device-Free Human Sensing (DFHS)*. ACM, Nov. 2019.
9. **Shiwei Fang**, Shahriar Nirjon. "Demo Abstract: AI-Enhanced 3D RF Representation Using Low-Cost mmWave Radar." *In Proceedings of the 16th ACM Conference on Embedded Networked Sensor Systems (SenSys)*. ACM, 2018.
10. **Shiwei Fang**, Ketan Mayer-Patel, and Shahriar Nirjon. "Distributed Adaptive Model Predictive Control of a Cluster of Autonomous and Context-Sensitive Body Cameras." *In Proceedings of the 2017 Workshop on Wearable Systems and Applications (WearSys)*. ACM, June 2017.

## Patent

1. Munir, Sirajum, **Shiwei Fang**, Yunze Zeng, and Vivek Jain. "MOBILE DEVICE RANGE FINDER VIA RF POWER." U.S. Patent Application 17/876,277, February 8, 2024.
2. Munir, Sirajum, **Shiwei Fang**, Yunze Zeng, and Vivek Jain. "VEHICLE TO TARGET RANGE FINDER VIA RF POWER." U.S. Patent Application 17/876,256, February 1, 2024.

## MENTORSHIP EXPERIENCE

1. **Mohammad Rastikerdar**, PhD Student, UMass Amherst
2. **Yue Zhang**, PhD Student, UC Merced
3. **Mahathir Monjur**, PhD Student, UNC Chapel Hill
4. **Aritro Deb Sarker**, Undergraduate, WPI
5. **Krish Patel**, Undergraduate, WPI

## TEACHING EXPERIENCE

### Augusta University (Teaching):

- CSCI 3170 & 5170 – Computer Organization: Fall 2024, Spring 2025
- CSCI 4950 & 6950 – Mobile Health Analytics: Spring 2024

### UMass Amherst (Co-Teaching):

- CS328 – Mobile Health Sensing and Analytics: Spring 2023

### UNC Chapel Hill (Graduate Teaching Assistant):

- COMP 581 – Introduction to Robotics: Fall 2017

- COMP 430 – Mobile Computing Systems: Fall 2017
- COMP 520 – Compiler: Spring 2017
- COMP 411 – Computer Organization: Fall 2016
- COMP 590 – Mobile Computing Systems: Spring 2016

**Stony Brook University (Undergraduate):**

- IEEE Stony Brook Student Branch (Instructor): 2013 - 2015
- AMS 151 – Applied Calculus I (Teaching Assistant): Fall 2012

## PROFESSIONAL SERVICES

**Co-Chair**

- SenSys/BuildSys Workshop on Data: Acquisition to Analysis (DATA), 2022, 2023, 2024
- SenSys/BuildSys Joint Ph.D. Forum, 2023

**Technical Program Committee (TPC)**

- ACM BuildSys, 2022, 2024
- IEEE/ACM CHASE, 2023, 2025
- IEEE ICC SAC E-Health, 2023
- SenSys/BuildSys Workshop on Data: Acquisition to Analysis (DATA), 2020, 2021
- BuildSys Posters and Demos Session, 2020
- SenSys Posters and Demos Session, 2019

**Session Chair**

- ACM BuildSys 2022
- ACM Workshop on Intelligent Acoustic Systems and Applications (IASA), MobiSys 2022

**Primary Reviewer**

- IEEE Radar Conference (RadarConf), 2023, 2024, 2025
- NeurIPS Datasets and Benchmarks Track, 2024
- IEEE Internet of Things Journal, 2024
- ACM Transactions on Sensor Networks (TOSN), 2022
- ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2022
- International Journal of Wireless Information Networks, 2022
- Digital Signal Processing, 2021, 2022, 2024
- INFOCOM, 2020, 2021
- Data in Brief, 2020
- MMSys, 2018
- NSysS, 2018

**Publicity Chair**

- IEEE MASS 2023

**Web Chair**

- SenSys/BuildSys Workshop on Data: Acquisition to Analysis (DATA), 2020, 2021