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
Department of Computer Science
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

Note: Primarily advised students are underlined.

Journal & Conference

1. Jack Adiletta, Khan Mohammad Nur Hossain, Matthew Reynolds, **Shiwei Fang**, Bashima Islam. "EfficientMic: Adaptive Acoustic Sensing with a Single Microphone for Smart Infrastructure", *In Proceedings of the 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys), ACM*, Nov. 2025.

2. Hui Wei, Dong Yoon Lee, Shubham Rohal, Zhizhang Hu, Ryan Rossi, **Shiwei Fang**, and Shijia Pan. "A survey of foundation models for IoT: taxonomy and criteria-based analysis". *CCF Transactions on Pervasive Computing and Interaction (2025)*, Nov. 2025.

3. Colin Samplawski, **Shiwei Fang**, and Benjamin M. Marlin. "End-to-end differentiable multi-view tracking: Architecture and fine-tuning experiments." *In 2025 28th International Conference on Information Fusion (FUSION), IEEE*, July 2025.

4. Hanlin Chen, Guanhao Xu, Anye Zhou, Zejiang Wang, Jieqiong Zhao, and **Shiwei Fang**. "Adaptive Dynamic Digital Twin for Test Scenario Generation." *In 2025 IEEE 3rd International Conference on Mobility, Operations, Services and Technologies (MOST), IEEE*, May 2025.

5. 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.

6. Marlin, Benjamin M., Niranjan Suri, **Shiwei Fang**, Mani B. Srivastiva, 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.

7. 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)

8. 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.

9. **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.

10. **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.
11. **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.
12. **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.
13. **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***.
14. **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. Jack Adiletta, Khan Mohammad Nur Hossain, Matthew Reynolds, **Shiwei Fang**, and Bashima Islam. "Dataset: A Novel Aliasing vs Non Aliasing Audio Dataset for Always-On IoT Microphone Experimentation." *In Proceedings of the 12th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation (BuildSys), ACM,* Nov. 2025.
2. Dipu Ram Roy, Jieqiong Zhao, Shijia Pan, and **Shiwei Fang**. "Poster Abstract: PrivacyVis: Interactive Visualization Tool for Privacy Risks of Internet of Things Sensors". *In Proceedings of the 23nd ACM Conference on Embedded Networked Sensor Systems (SenSys). ACM,* May 2025.
3. Dipu Ram Roy, Jieqiong Zhao, Shijia Pan, and **Shiwei Fang**. "Towards Understanding User Privacy Concerns of Internet of Things Sensor Data". *In Second International Workshop on Security and Privacy of Sensing Systems (Sensors S&P '25). ACM,* May 2025.
4. 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.
5. 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
6. Rastikerdar, Mohammad Mehdi, Jin Huang, **Shiwei Fang**, Hui Guan, and Deepak Ganesan. "Efficient IoT Inference via Context-Awareness". *arXiv:2310.19112.* Oct. 2023
7. 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
8. **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.
9. **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.
10. **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.
11. **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.
12. **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.
13. **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

1. **Salil Verma**, PhD Student, Augusta University, (2025-)
2. **Nicholas Miravalle**, PhD Student, Augusta University, (2025-)
3. **Priscilla Landi**, Undergraduate, Augusta University, (2026-)
4. **Matthew Boone**, Undergradaute, Augusta University, (2026-)
5. **Ahmad Sanadiki**, Undergraduate, Augusta University, (2025-)
6. **Charles Vince Butler**, Undergraduate, Augusta University
7. **Sofia Marquez**, Undergraduate, Augusta University
8. **Dipu Ram Roy**, BUET (2024-)
9. **Mohammad Rastikerdar**, PhD Student, UMass Amherst
10. **Yue Zhang**, PhD Student, UC Merced
11. **Mahathir Monjur**, PhD Student, UNC Chapel Hill
12. **Aritro Deb Sarker**, Undergraduate, WPI
13. **Krish Patel**, Undergraduate, WPI

TEACHING

Augusta University (Teaching):
- CSCI 3170 – Computer Organization: Fall 2024, Spring 2025, Fall 2025
- CSCI 5170 – Computer Organization: Fall 2024, Spring 2025, Fall 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

SERVICES

Professional

Co-Chair
- BuildSys Workshop on DataFM - Data Acquisition & Analysis with Foundational Models, 2025
- 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, 2025
- 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
- Interspeech, 2025
- Transactions on Mobile Computing, 2025
- Hawaii International Conference on System Sciences (HICSS), 2025
- ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2022, 2025
- ACM Transactions on Sensor Networks (TOSN), 2022, 2025
- NeurIPS, 2025
- NeurIPS Datasets and Benchmarks Track, 2024
- IEEE Internet of Things Journal, 2024
- Digital Signal Processing, 2021, 2022, 2024
- International Journal of Wireless Information Networks, 2022
- 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

Augusta University

- AUFS Budget Advisory & University Resources (BAUR) Committee, 2025-
- AUFS IT Resources (ITR) Committee, 2025-
- Computer & Cyber Graduate Student Organization, adviser, 2024-
- Academic Web Oversight Committee, SCCS, 2024-2025