XIN LIU

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EDUCATION

Ph.D. in Computer Engineering   Aug 2016 - May 2022
University of Maryland, Baltimore County   *Baltimore, MD*

M.S. in Pattern Recognition and Intelligent System   Sep 2009 - Jul 2012
Beijing Institute of Technology   *Beijing, China*

B.S. in Control Science and Engineering   Sep 2005 - Jul 2009
Beijing Institute of Technology   *Beijing, China*

EXPERIENCE

Assistant Professor   Aug 2024 - Present
Department of Computer Science, Florida State University   *Tallahassee, FL*

Postdoctoral Scholar   Aug 2022 - Aug 2024
NSF AI-EDGE Institute, The Ohio State University   *Columbus, OH*

Graduate Research Assistant   Aug 2016 - May 2022
University of Maryland, Baltimore County   *Baltimore, MD*

Electro-Optical Engineer   Jul 2012 - Jun 2016
Academy of Opto-Electronics, Chinese Academy of Sciences   *Beijing, China*

PUBLICATIONS

Conference:

[1] **2FiA: Towards Wi-Fi Sensing-Based Authentication with Unique Biometrics**
Bofan Li, Zhankai Ye, Yongning Tang, Weikuan Yu, **Xin Liu**
IEEE Symposium on Security and Privacy (S&P), 2026.
Acceptance rate: 12.8% (118/925)

[2] **0CAL: Zero-Cost Calibration for mmWave Networks**
Xin Liu, Wei-Han Chen, Kannan Srinivasan
ACM Conference on Embedded Networked Sensor Systems (SenSys), 2026.
Acceptance rate: 19.8% (52/263)

[3] **MURAL-Fi: Multi-User Respiration Authentication Leveraging Wi-Fi**
Bofan Li, **Xin Liu**, Yichao Wang, Yili Ren, Weikuan Yu
ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT/UbiComp), 2026.

[4] **Energy-Efficient Paging for Duty-Cycled LTE Backscatter**
Yunyun Feng, **Xin Liu**, Jia Zhao, Yuan Ding, Gongpu Wang, Wei Gong
IEEE Conference on Computer Communications (INFOCOM), 2025.
Acceptance rate: 18.7% (272/1458)

[5] **Key Establishment for Secure Asymmetric Cross-Technology Communication**
Wei Wang, **Xin Liu**, Zicheng Chi, Stuart Ray, Ting Zhu
ACM ASIA Conference on Computer and Communications Security (ASIACCS), 2024.
Acceptance rate: 21.6% (65/301)

[6] **FTP: Enabling Fast Beam-Training for Optimal mmWave Beamforming**
Wei-Han Chen, **Xin Liu**, Kannan Srinivasan, Srinivasan Parthasarathy
IEEE Conference on Computer Communications (INFOCOM), 2024.
Acceptance rate: 19.6% (256/1307)

[7] **Efficient Two-Way Edge Backscatter with Commodity Bluetooth**
Maoran Jiang, **Xin Liu**, Li Dong, Wei Gong
IEEE Conference on Computer Communications (INFOCOM), 2024.
Acceptance rate: 19.6% (256/1307)

[8] **Fast and Optimal Beam Alignment for Off-the-Shelf mmWave Devices**
Wei-Han Chen, **Xin Liu**, Kannan Srinivasan, Srinivasan Parthasarathy
ACM International Symposium on Mobility Management and Wireless Access (MobiWac), 2023.
Acceptance rate: 30.5% (83/272)

[9] **LightThief: Your Optical Communication Information is Stolen behind the Wall**
Xin Liu, Wei Wang, Guanqun Song, Ting Zhu
USENIX Security Symposium (USENIX Security), 2023.
Acceptance rate: 29.2% (422/1444)

[10] **A Secured Protocol for IoT Devices in Tactical Networks**
Wei Wang, Zicheng Chi, **Xin Liu**, Ananth Vishnu Bhaskar, Ankit Baingane, Ryan Jahnige, Qingquan Zhang, Ting Zhu
IEEE Military Communications Conference (MILCOM), 2022.
Acceptance rate: 49.2% (129/262)

[11] **I Can See the Light: Attacks on Autonomous Vehicles Using Invisible Lights**
Wei Wang, Yao Yao, **Xin Liu**, Xiang Li, Pei Hao, Ting Zhu
ACM Conference on Computer and Communications Security (CCS), 2021.
Acceptance rate: 23.2% (131/565)

[12] **Exploiting Wi-Fi AP for Simultaneous Data Dissemination among Wi-Fi and ZigBee Devices**
Wei Wang, **Xin Liu**, Yao Yao, Ting Zhu
IEEE International Conference on Network Protocols (ICNP), 2021.
Acceptance rate: 24.7% (38/154)

[13] **Verification and Redesign of OFDM Backscatter**
Xin Liu, Zicheng Chi, Wei Wang, Yao Yao, Pei Hao, Ting Zhu
USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2021.
Acceptance rate: 14.9% (59/396)

[14] **Leveraging Ambient LTE Traffic for Ubiquitous Passive Communication**
Zicheng Chi, **Xin Liu**, Wei Wang, Yao Yao, Ting Zhu
ACM Special Interest Group on Data Communication (SIGCOMM), 2020.
Acceptance rate: 21.2% (53/250)

[15] **Countering Cross-Technology Jamming Attack**
Zicheng Chi, Yan Li, **Xin Liu**, Wei Wang, Yao Yao, Ting Zhu, Yanchao Zhang
ACM Conference on Security and Privacy in Wireless and Mobile Networks (WiSec), 2020.
Acceptance rate: 28.8% (30/104)

[16] **VMscatter: A Versatile MIMO Backscatter**
Xin Liu, Zicheng Chi, Wei Wang, Yao Yao, Ting Zhu
USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2020.
Acceptance rate: 18.4% (65/354)

[17] **Parallel Inclusive Communication for Connecting Heterogeneous IoT Devices at the Edge**
Zicheng Chi, Yan Li, **Xin Liu**, Yao Yao, Yanchao Zhang, Ting Zhu
ACM Conference on Embedded Networked Sensor Systems (SenSys), 2019.
Best Paper Award Candidate, Acceptance rate: 19.4% (28/144)

[18] **CRF: Coexistent Routing and Flooding using Wi-Fi Packets in Heterogeneous IoT Networks**
Wei Wang, **Xin Liu**, Yao Yao, Yan Pan, Zicheng Chi, Ting Zhu

IEEE Conference on Computer Communications (INFOCOM), 2019.
Acceptance rate: 19.7% (288/1464)

[19] **Passive-ZigBee: Enabling ZigBee Communication in IoT Networks with 1000X+ Less Power Consumption**
Yan Li, Zicheng Chi, **Xin Liu**, Ting Zhu
ACM Conference on Embedded Networked Sensor Systems (SenSys), 2018.
Best Paper Runner-up Award, Acceptance rate: 15.6% (23/147)

[20] **EAR: Exploit Uncontrollable Ambient RF Signals in Heterogeneous Networks for Gesture Recognition**
Zicheng Chi, Yao Yao, Tiantian Xie, **Xin Liu**, Zhichuan Huang, Wei Wang, Ting Zhu
ACM Conference on Embedded Networked Sensor Systems (SenSys), 2018.
Acceptance rate: 15.6% (23/147)

[21] **Detection for Pulmonary Nodules using RGB Channel Superposition Method in Deep Learning Framework**
Yishuang Meng, Ping Yi, Xuejun Guo, Wen Gu, **Xin Liu**, Wei Wang, Ting Zhu
International Conference on Security of Smart Cities, Industrial Control System and Communications (SSIC), 2018.

[22] **Chiron: Concurrent High Throughput Communication for IoT Devices**
Yan Li, Zicheng Chi, **Xin Liu**, Ting Zhu
ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2018.
Acceptance rate: 26.8% (37/138)

[23] **Aegis: An Interference-Negligible RF Sensing Shield**
Yao Yao, Yan Li, **Xin Liu**, Zicheng Chi, Wei Wang, Tiantian Xie, Ting Zhu
IEEE Conference on Computer Communications (INFOCOM), 2018.
Acceptance rate: 19.2% (309/1606)

[24] **ECT: Exploiting Cross-Technology Concurrent Transmission for Reducing Packet Delivery Delay in IoT Networks**
Wei Wang, Tiantian Xie, **Xin Liu**, Ting Zhu
IEEE Conference on Computer Communications (INFOCOM), 2018.
Acceptance rate: 19.2% (309/1606)

[25] **Charge Station Placement in Electric Vehicle Energy Distribution Network**
Jianwen Xu, Ping Yi, Tiantian Xie, Wei Wang, **Xin Liu**, Ting Zhu
IEEE International Conference on Communications (ICC), 2017.
Acceptance rate: 38.1% (1172/3074)

[26] **Real-time Algorithm for SIFT based on Distributed Shared Memory Architecture with Homogeneous Multi-core DSP**
Xin Liu, Wenjie Chen, Tao Ma, Lishuang Xu
International Conference on Intelligent Control and Information Processing (ICICIP), 2011.

[27] **The Research of Sensor Fault Diagnosis based on Genetic Algorithm and One-Against-One Support Vector Machine**
Lishuang Xu, Tao Cai, Fang Deng, **Xin Liu**
International Conference on Intelligent Control and Information Processing (ICICIP), 2011.

Journal:

[28] **O-JRC: An Open Source Software Platform for mmWave Joint Radar-Communication Development and Experimentation**
Xin Liu, Haocheng Zhu, Eylem Ekici
Computer Networks, Vol. 268, 2025, Art. 111337.

[29] **High-Granularity Modulation for OFDM Backscatter**
Xin Liu, Zicheng Chi, Wei Wang, Yao Yao, Pei Hao, Ting Zhu
IEEE/ACM Transactions on Networking (TON), Vol. 32, No. 1, 2024, pp. 338–351.

[30] **Simultaneous Data Dissemination Among Wi-Fi and ZigBee Devices**
Wei Wang, **Xin Liu**, Yao Yao, Zicheng Chi, Stuart Ray, Ting Zhu, Yanchao Zhang
IEEE/ACM Transactions on Networking (TON), Vol. 31, No. 6, 2023, pp. 2545–2558.

[31] **Coexistent Routing and Flooding using Wi-Fi Packets in Heterogeneous IoT Network**
Wei Wang, **Xin Liu**, Yao Yao, Zicheng Chi, Yan Pan, Ting Zhu
IEEE/ACM Transactions on Networking (TON), Vol. 29, No. 6, 2021, pp. 2807–2819.

[32] **ECT: Exploiting Cross-Technology Transmission for Reducing Packet Delivery Delay in IoT Networks**
Wei Wang, Tiantian Xie, **Xin Liu**, Yao Yao, Ting Zhu
ACM Transactions on Sensor Networks (TOSN), Vol. 15, No. 2, 2019, Art. 20, pp. 1–28.

[33] **Energy Transport Station Deployment in Electric Vehicles Energy Internet**
Yu Sui, Ping Yi, **Xin Liu**, Ting Zhu
IEEE Access, Vol. 7, 2019, pp. 97986–97995.

[34] **Precise Detecting Method of Target Miss-distance for Laser Tracker**
Dengfeng Dong, Zhi Cheng, Weihu Zhou, Rongyi Ji, **Xin Liu**
Infrared and Laser Engineering, Vol. 45, No. 6, 2016, Art. 0617002.

[35] **High Precision Laser Position Detecting System Based on Position Sensitive Device**
Zhi Cheng, Dengfeng Dong, Weihu Zhou, **Xin Liu**
Laser & Optoelectronics Progress, Vol. 53, No. 8, 2016, Art. 081202.

Workshop & Poster:

[36] **Poster: Smart Object-Oriented Dynamic Energy Management for Base Stations in Smart Cities**
Xin Liu, Wei Wang, Ting Zhu, Qingquan Zhang, Ping Yi
Workshop on Experiences with the Design and Implementation of Smart Objects (SMARTOBJECTS), 2017.

[37] **Optimization for Charge Station Placement in Electric Vehicles Energy Network**
Yu Sui, Ping Yi, **Xin Liu**, Wei Wang, Ting Zhu
Workshop on Smart Internet of Things (SmartIoT), 2017.

Preprint:

[38] **GeoMotionGPT: Geometry-Aligned Motion Understanding with Large Language Models**
Zhankai Ye, Bofan Li, Yukai Jin, Shuoqiu Li, Wei Wang, Yanfu Zhang, Shangqian Gao, **Xin Liu**
arXiv preprint arXiv:2601.07632, 2026.

[39] **HyperEdit: Unlocking Instruction-based Text Editing in LLMs via Hypernetworks**
Yiming Zeng, Jinghan Cao, Zexin Li, Wanhao Yu, Zhankai Ye, Dawei Xiang, Ting Hua, **Xin Liu**, Shangqian Gao, Tingting Yu
arXiv preprint arXiv:2512.12544, 2025.

HONORS, AWARDS & GRANTS

Research Grants

- FSU-AWS Research Acceleration Fund Award (AWS Credits up to $20,000), 2026–2028
- FSU First Year Assistant Professor (FYAP) Grant, 2024–2025

Academic Honors

- Best Paper Award Candidate, ACM SenSys 2019
- Best Paper Runner-up Award, ACM SenSys 2018

Travel Awards

- Dean's Faculty Travel Award, FSU College of Arts and Sciences 2026
- Student Travel Grant, USENIX NSDI 2020, 2021
- Student Travel Grant, ACM MobiCom 2017

TEACHING & MENTORING

Ph.D. Advisor

- Zhankai Ye (Ph.D., 2024–present)
- Bofan Li (Ph.D., 2025–present)
- Zhuoyuan Liu (Ph.D., 2025–present)

Course Instructor

- Future Edge Networks and Distributed Intelligence (CIS 4930/5930), FSU   Spring 2026
- Computer Security (CIS 5370), FSU   Spring 2025
- Operating Systems (COP 4610), FSU   Fall 2024 – Fall 2025

Undergraduate Research Mentorship

- Experience Recognition Program (ERP), FSU   Spring 2025
- Undergraduate Research Opportunity Program (UROP), FSU   Fall 2024
- NSF Research Experiences for Undergraduates (REU), OSU   Summer 2023

ACADEMIC SERVICES

Technical Program Committee & Artifact Evaluation

- AEC Member, IEEE Symposium on Security and Privacy (S&P)   2026
- TPC Member, International Conference on Parallel and Distributed Systems (ICPADS)   2025
- AEC Member, ACM SIGCOMM Conference   2022 – 2023

Conference & Journal Reviewer

- *IEEE/ACM Transactions on Networking (ToN)*   2021 – 2022, 2026
- *IEEE Transactions on Mobile Computing (TMC)*   2025
- *IEEE Transactions on Information Forensics and Security (T-IFS)*   2024
- *IEEE Transactions on Wireless Communications (TWC)*   2024
- *Ad Hoc Networks*   2023
- *IEEE World Forum on Public Safety Technology*   2025
- *IEEE Wireless Communications Letters*   2021
- *Applied Energy*, *Frontiers in Energy Research*, *IEEE Access*   2021 – 2024

PATENTS

[1] **Systems and Methods for Measuring a Physiological Characteristic of an Individual**
Xin Liu, Bofan Li
U.S. Provisional Patent Application No. 63/974,729, filed February 3, 2026.

[2] **Passive Optical-to-RF Conversion for Secure Eavesdropping on Optical Wireless Communication Systems**
Xin Liu, Ting Zhu, Guanqun Song
PCT International Patent Application No. PCT/US2025/028590, filed May 9, 2025 (claims benefit of U.S. Provisional Patent Application No. 63/644,897, filed May 9, 2024).

[3] **Systems and Methods of Calibrating a Phased Array Antenna**
Kannan Srinivasan Athreya, **Xin Liu**, Wei-Han Chen
PCT International Patent Application No. PCT/US2025/028321, filed May 8, 2025 (claims benefit of U.S. Provisional Patent Application No. 63/644,832, filed May 9, 2024).

[4] **Systems and Methods of Beam-Training a Phased Array Antenna**
Kannan Srinivasan Athreya, Wei-Han Chen, **Xin Liu**, Srinivasan Parthasarathy
PCT International Patent Application No. PCT/US2025/028335, filed May 8, 2025 (claims benefit of U.S. Provisional Patent Application No. 63/644,887, filed May 9, 2024).

SELECTED TALKS

- **Verification and Redesign of OFDM Backscatter**
  USENIX Symposium on Networked Systems Design and Implementation (NSDI), Virtual, Apr 2021.

- **VMscatter: A Versatile MIMO Backscatter**
  USENIX Symposium on Networked Systems Design and Implementation (NSDI), Santa Clara, CA, Feb 2020.