YILI REN

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📍 University of South Florida, 4202 E. Fowler Avenue Tampa, FL 33620, USA

RESEARCH INTERESTS

Mobile Computing:	Wireless Sensing, AI-driven Mobile Computing and Sensing, Mobile Healthcare, Smart Home and IoT Applications, Human-Computer Interaction Applications.
Cybersecurity:	Mobile Authentication, Biometrics, Smart Home and IoT Security.

EDUCATION

Florida State University, Ph.D. *August 2017 – August 2023*
Computer Science
Advisor: Dr. Jie Yang

Beihang University, M.S. *September 2014 – March 2017*
Electronic and Information Engineering

Zhengzhou University, B.S. *September 2010 – June 2014*
Electronic and Information Engineering

EMPLOYMENT HISTORY

Assistant Professor *August 2023 – Present*
Bellini College of Artificial Intelligence, Cybersecurity and Computing
University of South Florida

Research / Teaching Assistant *August 2017 – May 2023*
Department of Computer Science
Florida State University

GRANT AND PROJECT FUNDING

In Progress
University of South Florida, "Center for Innovation, Technology, and Aging (CITA)," Senior Personnel, Total amount: $1,000,000.

AWARDS

Graduate Student Research Award, Department of Computer Science, Florida State University, 2022.
— 1 out of 85 Ph.D. students in the department.
Merit Scholarship, Beihang University, 2015-2016.
— Top 10% of 330 graduate students in the department.
Outstanding Graduate Award, Henan Province, 2014.
— Top 3% of undergraduate students in Henan Province.
Merit Scholarship, Zhengzhou University, 2011-2014.
— Top 4% of 120 undergraduate students in the department.

FULL PAPERS

1. Yichao Wang, **Yili Ren**, Jie Yang. "Wi-Hand: 3D Hand Mesh Construction Using WiFi," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2025**) . **top-tier csrankings.org conference.**

2. **Yili Ren**, Haopeng Zhang, Haohan Yuan, Jingzhe Zhang, Yitong Shen. "Wi-Chat: Large Language Model-powered Wi-Fi-based Human Activity Recognition," *The 3rd ACM International Workshop on Environmental Sensing Systems for Smart Cities at MobiSys 2025.* (2025).

3. Haotang Li, Zhenyu Qi, Sen He, Kebin Peng, Sheng Tan, **Yili Ren**, Tomas Cerny, Jiyue Zhao, Zi Wang. "UWB-PostureGuard: A Privacy-Preserving RF Sensing System for Continuous Ergonomic Sitting Posture Monitoring," *59th Hawaii International Conference on System Sciences.* (2025).

4. Bofan Li, **Yili Ren**, Yichao Wang, Jie Yang. "SpaceBeat: Identity-aware Multi-person Vital Signs Monitoring Using Commodity WiFi," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2024**) . **top-tier csrankings.org conference.**

5. Yichao Wang, **Yili Ren**, Jie Yang. "Multi-Subject 3D Human Mesh Construction Using Commodity WiFi," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT /UbiComp 2024**) . **top-tier csrankings.org conference.**

6. **Yili Ren**, Yichao Wang, Sheng Tan, Yingying Chen, Jie Yang. "Person Re-identification in 3D Space: A WiFi Vision-based Approach," *The 32nd USENIX Security Symposium* (**USENIX Security 2023**) . **top-tier csrankings.org conference.**

7. Yichao Wang*, **Yili Ren***, Yingying Chen, Jie Yang. "Wi-Mesh: A WiFi Vision-based Approach for 3D Human Mesh Construction," *The 20th ACM Conference on Embedded Networked Sensor Systems* (**SenSys 2022**). **top-tier csrankings.org conference.**
   (*co-first authors)

8. **Yili Ren**, Zi Wang, Yichao Wang, Sheng Tan, Yingying Chen, Jie Yang. "GoPose: 3D Human Pose Estimation Using WiFi," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2022**). **top-tier csrankings.org conference.**

9. **Yili Ren**, Zi Wang, Sheng Tan, Yingying Chen Jie Yang. "Winect: 3D Human Pose Tracking for Free-form Activity Using Commodity WiFi," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2021**). **top-tier csrankings.org conference.**

10. **Yili Ren**, Sheng Tan, Linghan Zhang, Zi Wang, Zhi Wang, Jie Yang. "Liquid Level Sensing Using Commodity WiFi in a Smart Home Environment," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2020**). **top-tier csrankings.org conference.**

11. **Yili Ren**, Xiling Luo, Qianhong Wu, Joseph K. Liu, Peng Zhang. "Towards Certificate-based Group Encryption," *The 10th International Conference on Provable Security* (ProvSec 2016).

12. Zi Wang, **Yili Ren**, Yingying Chen, Jie Yang. "ToothSonic: Earable Authentication via Acoustic Toothprint," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT /UbiComp 2022**). **top-tier csrankings.org conference.**

13. Zi Wang, Sheng Tan, Linghan Zhang, **Yili Ren**, Zhi Wang, Jie Yang. "EarDynamic: An Ear Canal Deformation Based Continuous User Authentication Using In-Ear Wearables," *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* (**IMWUT/UbiComp 2021**). **top-tier csrankings.org conference.**

14. Sheng Tan, **Yili Ren**, Yingying Chen, Jie Yang. "Commodity WiFi Sensing in 10 Years: Status, Challenges, and Opportunities," *IEEE Internet of Things Journal* (2022).

15. Linghan Zhang, Sheng Tan, Zi Wang, **Yili Ren**, Zhi Wang, Jie Yang. "VibLive: A Continuous Liveness Detection for Secure Voice User Interface in IoT Environment," *The 36th Annual Computer Security Applications Conference* (**ACSAC 2020**).

16. Xiling Luo, **Yili Ren**, Jiankun Hu, Qianhong Wu, Jungang Lou. "Privacy-preserving Identity-based File Sharing in Smart City," *Personal and Ubiquitous Computing* (2017).

17. Xiling Luo, **Yili Ren**, Jingwen Liu, Jiankun Hu, Weiran Liu, Zhen Wang, Wei Xu, Qianhong Wu. "Identity-based Group Encryption," *The 21st Australasian Conference on Information Security and Privacy* (ACISP 2016).

PAPER ABSTRACTS / POSTERS

1. **Yili Ren**, Haopeng Zhang, Haohan Yuan, Jingzhe Zhang, Yitong Shen. "Poster: Large Language Model-powered Wi-Fi-based Human Activity Recognition," *The 23rd ACM International Conference on Mobile Systems, Applications, and Services.* (**MobiSys 2025**).

2. **Yili Ren**, Yichao Wang, Yingying Chen, Jie Yang. "A Vision-based Approach for Commodity WiFi Sensing," *The 20th ACM Conference on Embedded Networked Sensor Systems* (**SenSys 2022**).

3. **Yili Ren**, Yichao Wang, Sheng Tan, Yingying Chen, Jie Yang. "A WiFi Vision-based Approach to Person Re-identification," *The ACM Conference on Computer and Communications Security* (**CCS 2022**).

4. **Yili Ren**, Zi Wang, Beiyu Wang, Sheng Tan, Jie Yang. "Liquid Level Detection Using Wireless Signals," *The 20th ACM International Conference on Mobile Systems, Applications, and Services* (**MobiSys 2022**).

5. **Yili Ren**, Yichao Wang, Sheng Tan, Yingying Chen, Jie Yang. "Person Re-Identification Using WiFi Signals," *The 28th Annual International Conference on Mobile Computing and Networking* (**MobiCom 2022**).

6. **Yili Ren**, Zi Wang, Sheng Tan, Yingying Chen, Jie Yang. "Tracking Free-form Activity Using WiFi Signals," *The 27th Annual International Conference on Mobile Computing and Networking* (**MobiCom 2021**).

7. **Yili Ren**, Zi Wang, Yichao Wang, Sheng Tan, Yingying Chen, Jie Yang. "3D Human Pose Estimation Using WiFi Signals," *The 19th ACM Conference on Embedded Networked Sensor Systems* (**SenSys 2021**).

8. Zi Wang, **Yili Ren**, Yingying Chen, Jie Yang. "Excerpt of ToothSonic: Earable Authentication via Acoustic Toothprint," *Adjunct Proceedings of the 2022 ACM International Joint Conference on Pervasive and Ubiquitous Computing and the 2022 ACM International Symposium on Wearable Computers* (**UbiComp/ISWC 2022**).

9. Yichao Wang, **Yili Ren**, Yingying Chen, Jie Yang. "A WiFi Vision-based 3D Human Mesh Reconstruction," *The 28th Annual International Conference on Mobile Computing and Networking* (**MobiCom 2022**).

10. Zi Wang, **Yili Ren**, Yingying Chen, Jie Yang. "Earable Authentication via Acoustic Toothprint," *ACM Conference on Computer and Communications Security* (**CCS 2021**).

11. Zi Wang, **Yili Ren**, Yingying Chen, Jie Yang. "An Ear Canal Deformation Based Continuous User Authentication Using Earables," *The 27th Annual International Conference on Mobile Computing and Networking* (**Mobicom 2021**).

MEDIA COVERAGE

WiFi-based 3D human pose sensing was covered by: Tech Xplore, News Break, Opera News, phy.org, NH News, etc.
— For example: *Winect: A System That Tracks 3D Human Poses During Free-form Motion*.

Ear wearable authentication was covered by: Unite.Ai, Gigazine, au Web, Intertechnews, livedoor News, etc.
— For example: *Biometric Authentication by Grinding Your Teeth*.

WiFi-based 3D Human Mesh Construction was covered by: Tech Xplore, News8Plus, etc.
— For example: *A Wi-Fi Sensing System That Creates 3D Human Meshes*.

TEACHING EXPERIENCES

CIS3213 Foundations of Cybersecurity *Fall 2025*
Instructor
Bellini College of Artificial Intelligence, Cybersecurity and Computing, University of South Florida

CIS4930/CIS6930 Wireless and Mobile Computing *Spring 2024, Spring 2025*
Instructor
Department of Computer Science and Engineering, University of South Florida

CIS4219/CIS6218 Human Aspects of Cybersecurity *Fall 2023, Fall 2024*
Instructor
Department of Computer Science and Engineering, University of South Florida

CEN5526 Wireless and Mobile Computing *Spring 2022*
Teaching Assistant & Guest Lecturer
Department of Computer Science, Florida State University

CNT5412 Network Security, Active and Passive Defenses *Fall 2021*
Teaching Assistant
Department of Computer Science, Florida State University

COP4531 Complexity and Analysis of Data Structures and Algorithms *Fall 2018, Spring 2020*
Teaching Assistant
Department of Computer Science, Florida State University

CNT4406 Network Security and Cryptography *Fall 2019*
Teaching Assistant
Department of Computer Science, Florida State University

COP4020 Programming Languages *Fall 2019*
Teaching Assistant
Department of Computer Science, Florida State University

CGS2930 Computer Security Basics *Fall 2018, Spring 2020*
Teaching Assistant
Department of Computer Science, Florida State University

COP3014 Programming I *Fall 2018, Spring 2019*
Teaching Assistant
Department of Computer Science, Florida State University

CIS4403 Introduction to Computer Security *Spring 2021*
Teaching Assistant
Department of Computer Science, Florida State University

CGS2060 Computer Fluency *Fall 2018*
Teaching Assistant
Department of Computer Science, Florida State University

PROFESSIONAL SERVICES

Panelist:
NSF SaTC
NSF CNS

Technical Program Committee (TPC) Membership:
2026 International Conference on Computing, Networking and Communications (ICNC): AI and Machine Learning for Communications and Networking
IEEE WF-IoT 2025 (2025 IEEE 11th World Forum on Internet of Things (WF-IoT))
IEEE INFOCOM 2025 Poster
INFOCOM DeepWireless 2025
2025 International Conference on Computing, Networking and Communications (ICNC): AI and Machine Learning for Communications and Networking
IEEE INFOCOM 2024 Poster

Reviewer for Journals:
ACM IMWUT/UbiComp
IEEE Transactions on Industrial Informatics
ACM Transactions on Internet Technology
IEEE Transactions on Biometrics, Behavior, and Identity Science
IEEE Transactions on Sustainable Computing
IEEE Signal Processing Letters
Computer Networks: The International Journal of Computer and Telecommunications Networking
ACM Transactions on Computing for Healthcare
IEEE Transactions on Computers
Journal of the International Measurement Confederation
IEEE Journal on Selected Areas in Communications - Positioning and Sensing Over Wireless Networks
ACM Transactions on Sensor Networks
IEEE Transactions on Information Forensics and Security
Journal of Computational Design and Engineering
IEEE Sensors Journal
IEEE Transactions on Artificial Intelligence
IEEE/ACM Transactions on Networking
IEEE Transactions on Mobile Computing
IEEE Transactions on Dependable and Secure Computing
IEEE Internet of Things Journal
Sensors

Reviewer for Conferences:
MobileHCI 2023
CSAE 2023

also helped in reviewing papers at conferences:
MobiSys 2023
USENIX Security 2023
ICDCS 2022
ESORICS 2022/2021
ASIACSS 2023/2022/2021
INFOCOM 2022/2021
ACSAC 2021
CNS 2022/2021
DCOSS 2021/2020
WiSec 2021/2020
IWQoS 2021/2020
ICCCN 2021
MSN 2019

STUDENT MENTORING

Mentored Ph.D. Students:
Jingzhe Zhang (2024 – Present)
Yitong (Thomas) Shen (2025 – Present)

Ph.D. Dissertation Committee:
Mehmet Yazgan
Department of Electrical Engineering, University of South Florida