

# Xingyu Chen

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| EDUCATION             | <b>University of California San Diego (UCSD)</b><br>Ph.D. in Computer Science and Engineering<br>Advisor: Prof. Xinyu Zhang  | Fall 2022 – 2027(Expected)   |
|                       | <b>University at Buffalo (UB), the State University of New York (SUNY)</b><br>B.S in Computer Science with Distinction<br>Advisor: Prof. Wenyao Xu   | August 2018 – June 2021      |
| EXPERIENCE            | <b>Research Intern</b> , Microsoft Research Asia<br>Supervised by Prof. Lili Qiu   | June 2023 – September 2023   |
|                       | <b>Researcher</b> , Mobile, Emerging Technologies & Applications (META) Lab<br>University of Colorado Denver<br>Supervised by Prof. Zhengxiong Li  | August 2021 – August 2022    |
|                       | <b>Research Assistant</b> , Embedded Sensing and Computing (ESC) Group<br>University at Buffalo, SUNY<br>Supervised by Prof. Wenyao Xu   | August 2018 – August 2021    |
| AWARDS                | <b>UC San Diego GPSA Travel Grant Award</b> ,<br><b>SenSys'23 NSF Travel Grant Award</b> ,<br><b>Best Student Paper Award</b> , IEEE International Conference on Health Informatics (ICHI)<br><b>Best Paper Award</b> , SenSys'19<br><b>Best Artifact Honorable Mention</b> , MobiSys'25   | 2023<br>2022<br>2019<br>2025 |
| SELECTED PUBLICATIONS | <ol style="list-style-type: none"><li>[1] Wuqiong Zhao, Baicheng Chen, Kai Zheng, <b>Xingyu Chen</b>, Wenqian Zhang, Xinyu Zhang. "Flow-Form: Scalable Passive Metasurface Network for mmWave Coverage Expansion", In: <i>SIGCOMM'26 (Conference full paper)</i>.</li><li>[2] Yinyan Bu, Jiajie Yu, <b>Xingyu Chen</b>, Bo Wen, Xinyu Zhang, Piya Pal. "Stochastic Neural Ray Tracing for Radio Frequency Channel Modeling", In: <i>ICML'26 (Conference full paper)</i>.</li><li>[3] <b>Xingyu Chen</b>, Zihao Feng, Wuqiong Zhao, Jianrong Ding, Ke Sun, Xinyu Zhang. "From Bits to Tokens: Knowledge-Driven Generative Communication of Multimodal Data", In: <i>NSDI'26 (Conference full paper)</i>.</li><li>[4] <b>Xingyu Chen</b>, Xinyu Zhang, Kai Zheng, Xinmin Fang, Tzu-Mao Li, Chris Xiaoxuan Lu, Zhengxiong Li. "Physically Accurate Differentiable Inverse Rendering for Radio Frequency Digital Twin", In: <i>MobiCom'26 (Conference full paper, accepted)</i>.</li><li>[5] <b>Xingyu Chen</b>, Xinmin Fang, Shuting Zhang, Xinyu Zhang, Liang He, Zhengxiong Li. "You Only Render Once: Enhancing Energy and Computation Efficiency of Mobile Virtual Reality", In: <i>MobiSys'25 (Conference full paper)</i>.</li><li>[6] <b>Xingyu Chen</b>, Zihao Feng, Kun Qian, Xinyu Zhang. "Radio Frequency Ray Tracing with Neural Object Representation", In: <i>CVPR'25 (Conference full paper)</i>.</li><li>[7] <b>Xingyu Chen</b>, Zihao Feng, Ke Sun, Kun Qian, Xinyu Zhang. "RFCanvas: Modeling RF Channel by Fusing Visual Priors and Few-shot RF measurements", In: <i>SenSys'24 (Conference full paper)</i>.</li><li>[8] <b>Xingyu Chen</b>, Xinyu Zhang. "RF Genesis: Zero-Shot Generalization of mmWave Sensing through</li></ol> |                              |

Simulation-Based Data Synthesis and Generative Diffusion Models",  
In: *SenSys'23* (Conference full paper).

OTHERS  
PUBLICATIONS

- [9] **Xingyu Chen\***, Zhengxiong Li\*, Baicheng Chen\*, Yi Zhu, Chris Xiaoxuan Lu, Zhengyu Peng, Feng Lin, Wenyao Xu, Kui Ren, Chunming Qiao. "MetaWave: Attacking mmWave Sensing with Meta-material-enhanced Tags",  
In: *NDSS'23* (Conference full paper).
- [10] Yadong Li, Shuning Wang, Yongjian Fu, Justin Chen, **Xingyu Chen**, Ju Ren, Xinyu Zhang, Akshay Gadre, Ke Sun. "UltraPoser: Pushing the Limits of IMU-based Full-Body Pose Estimation with Ultrasound Sensing on Consumer Wearables", In: *UIST'25* (Conference full paper).
- [11] Ruichun Ma, Shicheng Zheng, Hao Pan, Lili Qiu, **Xingyu Chen**, Liangyu Liu, Yihong Liu, Wenjun Hu, Ju Ren. "AutoMS: Automated Service for mmWave Coverage Optimization using Low-cost Metasurfaces", In: *MobiCom'24* (Conference full paper).
- [12] **Xingyu Chen\***, Zhengxiong Li\*, Srirangaraj Setlur, Wenyao Xu. "Exploring racial and gender disparities in voice biometrics", In: *Scientific Reports* (\*Co-first author) (Journal article).
- [13] **Xingyu Chen**, Xinmin Fang, Wenchuan Wei, Wenyao Xu, Zhengxiong Li. "Poster: Exploring an Extensible Children Game Framework based on Augmented Reality Building Blocks", In: *ACM Conference on Embedded Networked Sensor Systems (SenSys'21)* (Poster)
- [14] Xinmin Fang\*, **Xingyu Chen\***, Wenyao Xu, Zhengxiong Li. "Poster: Enhanced Virtual Reality: Exploring an Immersive and Realistic Virtual Reality Training for Nursing", In: *ACM Conference on Embedded Networked Sensor Systems (SenSys'21)* (\*Co-first author) (Poster)
- [15] **Xingyu Chen**, Chenhan Xu, Baicheng Chen, Zhengxiong Li, Wenyao Xu. "Poster: In-Ear Thermometer: Wearable Real-time Core Body Temperature Monitoring", In: *ACM Conference on Embedded Networked Sensor Systems (SenSys'20)* (Poster)
- [16] Huining Li, **Xingyu Chen**, Xiaoye Qian, Huan Chen, Zhengxiong Li, Soumyadeep Bhattacharjee, Hanbin Zhang, Ming-chun Huang Wenyao Xu. "An Explainable COVID-19 Detection System based on Human Sounds", In: *The IEEE/ACM international conference on Connected Health: Applications, Systems and Engineering Technologies 2022(CHASE'22)* (Conference full paper)
- [17] Zhengxiong Li, Baicheng Chen, **Xingyu Chen**, Chenhan Xu, Yuyang Chen, Feng Lin, Changzhi Li, Karthik Dantu, Kui Ren, Wenyao Xu. "Reliable Digital Forensics in the Air: Exploring an RF-based Drone Identification System", In: *The ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (UbiComp'22)* (Conference full paper)
- [18] Zhengxiong Li, Baicheng Chen, **Xingyu Chen**, Huining Li, Chenhan Xu, Feng Lin, Chris Xiaoxuan Lu, Kui Ren, Wenyao Xu. "SpiralSpy: Exploring a Stealthy and Practical Covert Channel to Attack Air-gapped Computing Devices via mmWave Sensing", In: *The Network and Distributed System Security (NDSS'22) Symposium* (Conference full paper)
- [19] Chenhan Xu, Huining Li, Zhengxiong Li, **Xingyu Chen**, Aditya Singh Rathore, Hanbin Zhang, Kun Wang, Wenyao Xu "The Visual Accelerometer: A High-fidelity Optic-to-Inertial Transformation Framework for Wearable Health Computing", In: *the IEEE International Conference on Health Informatics 2022 ICHI* (Conference paper) [Best student paper award]
- [20] Huining Li, Huan Chen, Chenhan Xu, Anarghya Das, **Xingyu Chen**, Zhengxiong Li, Jian Xiao, Ming-Chun Huang, Wenyao Xu "Privacy computing using deep compression learning techniques for neural decoding", In: *Smart Health* (Journal paper IF = 2.71)
- [21] Chenhan Xu, Huining Li, Zhengxiong Li, Hanbin Zhang, Aditya Singh Rathore, **Xingyu Chen**, Kun Wang, MING-CHUN Huang, Wenyao Xu. "CardiacWave: A mmWave-based Scheme of Non-Contact and High-Definition Heart Activity Computing", In: *ACM Conference on Pervasive and Ubiquitous Computing (UbiComp'21)* (Conference full paper)
- [22] Baicheng Chen, Zhengxiong Li, Huining Li, **Xingyu Chen**, Chenhan Xu, Wenyao Xu. "ThermoWave: A New Paradigm of Wireless Passive Temperature Monitoring via mmWave Sensing",

In: *ACM International Conference on Mobile Computing and Networking (MobiCom'20)* (**Conference full paper**)

- [23] Hanbin Zhang, Gabriel Guo, Emery Comstock, Baicheng Chen, **Xingyu Chen**, Matthew Stafford, Lora Cavuoto, Jeanne Langan, Wenyao Xu. "RehabPhone: A Software-Defined Tool using 3D Printing and Smartphones for Personalized Home-based Rehabilitation", In: *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys'20)* (**Conference full paper**)
- [24] Zhengxiong Li, Baicheng Chen, Zhuolin Yang, Huining Li, Chenhan Xu, **Xingyu Chen**, Kun Wang, Wenyao Xu. "FerroTag: A Paper-based mmWave-Scannable Tagging Infrastructure", In: *ACM International Conference on Mobile Computing and Networking (SenSys'19)* (**Conference full paper**) [[Best paper award](#)]

## SERVICES

### **Reviewer**

- IEEE GlobeCom 2023 CISS
- IEEE Transactions on Mobile Computing.
- IEEE Transactions on Services Computing.
- IEEE Transactions on Communications.
- IEEE Network Magazine.

### **Artifact Evaluation Committee,**

- ACM MobiCom 2023.
- ACM MobiSys 2022.
- ACM SenSys/BuildSys 2022 Workshop on Data.