

# Hanqing Guo

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CONTACT INFORMATION	Computer Science and Engineering Michigan State University East Lansing, MI 48824 USA	Phone: (765) 760-7245 Email: guohanqi@msu.edu Website: <a href="https://hanqingguo.github.io/">https://hanqingguo.github.io/</a>
RESEARCH INTERESTS	Cybersecurity, Trustworthy AI, Mobile Systems/Network	
EDUCATION	<b>Michigan State University</b> , East Lansing, Michigan USA Ph.D. Candidate, Computer Science (expected graduation date: May 2024) <ul style="list-style-type: none"> <li>• Dissertation: “Toward Private, Secure, and Robust AI-Enabled Voice Services”</li> <li>• Adviser: Dr. Xiao Li and Dr. Qiben Yan</li> </ul>	
	<b>Ball State University</b> , Muncie, Indiana USA MS, Computer Science, May, 2019 <ul style="list-style-type: none"> <li>• Thesis: “Real-time Human Activity Recognition Based on Radar”</li> <li>• Adviser: Dr. Shaoen Wu</li> </ul>	
	<b>Chongqing University of Posts of Telecommunications</b> , Chongqing, China BS, Telecommunications engineering, May, 2015	
HONORS AND AWARDS	Best Paper Honorable Mention, ACM CCS	<b>2022</b>
	Best Paper Award, ACM SenSys	<b>2021</b>
	Best Paper Award, IEEE Globecom	<b>2019</b>
STUDENT GRANTS	Student Travel Grant, ACM CCS	<b>\$1100, 2022</b>
	Student Travel Grant, IEEE DSN	<b>\$800, 2022</b>
RESEARCH EXPERIENCE	<b>Michigan State University</b> , Department of Computer Science, East Lansing, MI USA <i>Research Assistant</i> <b>Aug, 2019 - Present</b> Research on cybersecurity in real-world AI systems. Research on wireless sensing and mobile communications.	
	<b>Amazon</b> , Account Integrity Team, San Diego, CA USA <i>Applied Scientist Intern</i> <b>Jun, 2023 - August, 2023</b> Research on “Customer Profiling on Impersonation Scams”. Details are confidential due to the company policy.	
	<b>Samsung Research America</b> , Knox AI/Mobile/Privacy Group. Mountain View, CA USA <i>Research Intern</i> <b>May, 2022 - Dec, 2023</b> Research on “Discover the Vulnerabilities of Voice ID systems”, and “Adopting Diffusion Model for Speech Command Purification”. Details are confidential due to the company policy.	
	<b>Ball State University</b> , Muncie, IN USA <i>Research Assistant</i> <b>Jan, 2017 - Aug, 2019</b> Research on wireless communication and signal processing.	

1. **Hanqing Guo**, Xun Chen, Junfeng Guo, Li Xiao, Qiben Yan  
 “MASTERKEY: Practical Backdoor Attack Against Speaker Verification Systems”. Project Demo  
*The 29th Annual International Conference On Mobile Computing And Networking (ACM MobiCom)*, 2023
2. **Hanqing Guo**, Guangjing Wang, Yuanda Wang, Guangjing Wang, Bocheng Chen, Yuanda Wang, Qiben Yan, Li Xiao  
 “PhantomSound: Black-Box, Query-Efficient Audio Adversarial Attack via Split-Second Phoneme Injection”  
*The 26th International Symposium on Research in Attacks, Intrusions and Defenses (RAID)*, 2023
3. **Hanqing Guo**, Yuanda Wang, Nikolay Ivanov, Li Xiao, Qiben Yan  
 “SpecPatch: Human-In-The-Loop Adversarial Audio Spectrogram Patch Attack on Speech Recognition” **Best Paper Honorable Mention**. Project Demo  
*The 29th ACM Conference on Computer and Communications Security (ACM CCS)*, 2022
4. **Hanqing Guo\***, Chenning Li\*, Lingkun Li, Zhichao Cao, Qiben Yan, Li Xiao  
 “NEC: Speaker Selective Cancellation via Neural Enhanced Ultrasound Shadowing” <sup>1</sup> Project Demo, Media coverage: New Scientist and ACM TechNews  
*The 52nd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (IEEE DSN)*, 2022
5. **Hanqing Guo**, Qiben Yan, Nikolay Ivanov, Ying Zhu, Li Xiao, Eric J. Hunter  
 “SuperVoice: Text-Independent Speaker Verification Using Ultrasound Energy in Human Speech” Project Demo  
*The 17th ACM ASIA Conference on Computer and Communications Security (ACM ASIACCS)*, 2022
6. **Hanqing Guo**, Nan Zhang, Shaoen Wu, Qing Yang  
 “Deep Learning Driven Wireless Real-time Human Activity Recognition”  
*The IEEE International Conference on Communications (IEEE ICC)*, 2020
7. **Hanqing Guo**, Nan Zhang, Wenjun Shi, S. AIQarni, Shaoen Wu  
 “HICFR: Real Time 3D Indoor Human Image Capturing Based on FMCW Radar”  
*The IEEE International Conference on Multimedia and Expo (IEEE ICME)*, 2019
8. **Hanqing Guo**, Shaoen Wu, Honggang Wang, Mahmoud Daneshmand  
 “DSIC: Deep learning based self-interference cancellation for in-band full duplex wireless” **Best Paper Award**  
*The IEEE Global Communications Conference (IEEE GLOBECOM)*, 2019
9. Guangjing Wang, **Hanqing Guo**, Anran Li, Xiaorui Liu, Qiben Yan  
 “Federated IoT Interaction Vulnerability Analysis”  
*The 39th IEEE International Conference on Data Engineering (IEEE ICDE)*, 2023
10. Yuanda Wang, **Hanqing Guo**, Guangjing Wang, Bocheng Chen, Qiben Yan  
 “VSMask: Defending Against Voice Synthesis Attack via Real-Time Predictive Perturbation”  
*The 16th ACM Conference on Security and Privacy in Wireless and Mobile Networks (ACM WiSec)*, 2023
11. Xiao Zhang, **Hanqing Guo**, James M Mariani, Li Xiao  
 “U-star: An underwater navigation system based on passive 3d optical identification tags”  
*The 28th Annual International Conference On Mobile Computing And Networking (ACM Mobicom)*, 2022
12. Yuanda Wang, **Hanqing Guo**, Qiben Yan  
 “GhostTalk: Interactive Attack on Smartphone Voice System Through Power Line”  
*Network and Distributed System Security (NDSS)*, 2022

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<sup>1</sup>\* denotes authors contributed equally

13. Chenning Li, **Hanqing Guo**, Shuai Tong, Xiao Zeng, Zhichao Cao, Mi Zhang, Qiben Yan, Li Xiao, Jiliang Wang, Yunhao Liu  
 “NELoRa: Towards Ultra-low SNR LoRa Communication with Neural-enhanced Demodulation” **Best Paper Award** Project Code  
*The 19th ACM Conference on Embedded Networked Sensor Systems (SenSys)*, 2021
14. Nikolay Ivanov, **Hanqing Guo**, Qiben Yan  
 “Rectifying administrated ERC20 tokens”  
*Information and Communications Security: 23rd International Conference (ICICS)*, 2021
15. Bocheng Chen, Guangjing Wang, **Hanqing Guo**, Yuanda Wang, Qiben Yan  
 “Understanding Multi-Turn Toxic Behaviors in Open-Domain Chatbots”  
*The 26th International Symposium on Research in Attacks, Intrusions and Defenses (RAID)*, 2023
16. Junfeng Guo, Yiming Li, Xun Chen, **Hanqing Guo**, Lichao Sun, Cong Liu  
 “SCALE-UP: An Efficient Blackbox Input-level Backdoor Detection via Analyzing Scaled Prediction Consistency” Project Code  
*The 11th International Conference on Learning Representations (ICLR)*, 2023
17. Qiben Yan, Kehai Liu, Qin Zhou, **Hanqing Guo**, Ning Zhang  
 “Surfingattack: Interactive hidden attack on voice assistants using ultrasonic guided waves” Project Demo  
*Network and Distributed System Security (NDSS)*, 2020

#### TEACHING EXPERIENCE

**Michigan State University**, Department of Computer Science and Engineering, East Lansing, MI USA

*Teaching Assistant*

**Aug, 2019 - Present**

- CSE 260 — Discrete Structures in Computer Science: Spring 2022
- CSE 410 — Operating System: Fall 2021
- CSE 232 — Introduction to Programming II: Fall 2019

#### PROFESSIONAL ACTIVITIES

**PC member** of the *IEEE DSN Doctoral Forum*

**2023**

**Journal Reviewer** of

- *Transactions on Information Forensics & Security (TIFS)* **2022-2023**
- *Transactions on Dependable and Secure Computing (TDSC)* **2022-2023**
- *Transactions on Sensor Networks (TOSN)* **2021-2022**

**Conference Reviewer** of

- *IEEE INFOCOM* **2020 - 2024**
- *IEEE DSN* **2023**
- *IEEE ICC* **2022**

**Student Member** of

- *IEEE* **2018 - Present**
- *ACM* **2022 - Present**

