

Yan He

Ph.D. Candidate of Computer Science, The University of Oklahoma

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Education

Ph.D. Candidate in Computer Science

The University of Oklahoma, Norman, OK, USA

Jan. 2023 - Present

Advisor: Dr. Song Fang

M.S. in Computer Science

The University of Oklahoma, Norman, OK, USA

Aug 2020 - Dec 2022

B.S. in Computer Science

The University of Oklahoma, Norman, OK, USA

Aug 2015 - Dec 2019

Research Interests

- Cyber-Physical and Embedded Systems
- Cybersecurity
- Computer Vision

Publications

Published a total of 6 research papers in peer-reviewed conferences and journals, including top-tier conferences such as **ISOC NDSS 2026**, **ACM CCS 2023**, **ACM MobiSys 2021**, and tier-2 conference **RAID 2025**.

- 1 **Yan He**, Guanchong Huang, Song Fang, “*PhantomMotion: Laser-Based Motion Injection Attacks on Wireless Security Surveillance Systems*”, in the Network and Distributed System Security Symposium (ISOC NDSS 2026), San Diego, California, February 2026. (Acceptance Rate: 17.49%=113/646))
- 2 Guanchong Huang, **Yan He**, Shangqing Zhao, Yi Wu, Song Fang “*MotionDecipher: General Video-assisted Passcode Inference in Virtual Reality*”, in Proceedings of the 28th International Symposium on Research in Attacks, Intrusions and Defenses (RAID 2025), Gold Coast, Australia, October 2025.
- 3 **Yan He**, Qiuye He, Song Fang, Yao Liu “*When Free Tier Becomes Free to Enter: A Non-Intrusive Way to Identify Security Cameras with no Cloud Subscription*”, in Proceedings of the 30th ACM Conference on Computer and Communications Security (ACM CCS 2023), Copenhagen, Denmark, November 2023. (Acceptance Rate: 19.9% = 158/795)
- 4 **Yan He**, Qiuye He, Song Fang, Yao Liu, “*Precise Wireless Camera Localization Leveraging Traffic-aided Spatial Analysis*”, in IEEE Transactions on Mobile Computing (IEEE TMC), (pp. 1-13), November 2023. [Impact factor: 7.9]
- 5 **Yan He**, Qiuye He, Song Fang, Yao Liu, “*MotionCompass: Pinpointing Wireless Camera Via Motion-activated Traffic*”, in Proceedings of the 19th Annual International Conference on Mobile Systems, Applications, and Services (ACM MobiSys 2021), (pp. 215-227), Virtual, WI, USA, June 2021. (Acceptance Rate: 21.7% = 36/166) [Artifacts Badge]

- 6 **Yan He**, Hanyan Zhang, Edwin Yang, Song Fang, “*Virtual Step PIN Pad: Towards Foot-input Authentication Using Geophones*”, in Proceedings of the 17th International Conference on Mobile Ad Hoc and Sensor Systems (IEEE MASS 2020), (pp. 649-657), Virtual, Delhi NCR, India, October 2020. (Acceptance Rate: $29.7\% = 65/219$)

Manuscripts Under Review

- 1 **Yan He***, Qiuye He, Song Fang, Yao Liu, “*Traffic-based Cloud Subscription Status Inference for Wireless Security Cameras*”, in IEEE Transactions on Mobile Computing (IEEE TMC).

Patent

- 1 Song Fang, **Yan He**, Qiuye He, “*Method and Apparatus for Determining Locations of Wireless Cameras*”, US Patent (provisional application), serial No.: 63/356,211. (Non-provisional application #: 18/341,567, filed in 2023)

Talks

- 1 *When Free Tier Becomes Free to Enter: A Non-Intrusive Way to Identify Security Cameras with no Cloud Subscription*, in the 16th Central Area Networking and Security Workshop (CANSec), University of Kansas, Lawrence, KS, October 2023.
- 2 *MotionCompass: Pinpointing Wireless Camera Via Motion-activated Traffic*, in Proceedings of the 19th Annual International Conference on Mobile Systems, Applications, and Services, (**ACM MobiSys 2021**), Virtual, June 2021.
- 3 *Virtual Step PIN Pad: Towards Foot-input Authentication Using Geophones*, in Proceedings of the 17th International Conference on Mobile Ad Hoc and Sensor Systems (**IEEE MASS 2020**), Virtual, October 2020.

Selected Honors & Awards

- **CANSec Student Travel Grant**, NSF, 2024.
- **CANSec Student Travel Grant**, NSF, 2023.
- **GCoE PhD Recruitment Excellence Fellowship**, The University of Oklahoma, 2023.
- **Hacklahoma Winner (Top 10%)**, The University of Oklahoma, 2017.

Teaching

- **Teaching Assistant**, CS-4513 Database Management, OU, Fall 2025.
- **Teaching Assistant**, CS-4/5173 Computer Security, OU, Fall 2024/2023/2021/2020, Spring 2024/2021/2020.
- **Teaching Assistant**, CS-5033 Machine Learning, OU, Spring 2023.
- **Teaching Assistant**, CS-3113 Operating System, OU, Fall/Spring 2022.
- **Teaching Assistant**, CS-2614 Computer Organization, OU, Fall 2019.

Media Coverage

Sept. 2023 OU researchers are lifting the curtain on high-tech voyeurism and ‘The Internet of Things’, Sooner Magazine.

Link: <https://sooneromag.oufoundation.org/stories/sight-unseen>

Nov. 2022 Study Aims to Improve Privacy From Digitally Enabled Hidden Devices. OU News.

Link: <https://ou.edu/research-norman/news-events/2022/university-of-oklahoma-study-aims-to-improve-privacy-from-digitally-enabled-hidden-devices>

Nov. 2022 OU studying privacy of listening smart devices. FOX News.

Link:

<https://www.fox23.com/news/ou-studying-privacy-listening-smart-devices/EIKZ4W5CSRBI3IRUEXGZVXDHMI/>

Nov. 2022 Researcher at OU developing app to detect hidden cameras. KOCO 5 News.

Link: <https://www.koco.com/article/oklahoma-research-app-detect-hidden-cameras/41959062>

Professional Service

Reviewer for Conferences

- IEEE International Conference on Computer Communications (INFOCOM) 2023
- IEEE Conference on Communications and Network Security (CNS) 2022
- IEEE International Conference on Computer Communications and Networks (ICCCN) 2023
- IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS) 2023
- IEEE/ACM International Symposium on Quality of Service (IEEE/ACM IWQoS 2022)

Reviewer for Journals

- IEEE Transactions on Dependable and Secure Computing (TDSC)
- IEEE Transactions on Mobile Computing (TMC)
- IEEE Transactions on Information Forensics & Security (TIFS)
- IEEE/ACM Transactions on Networking (ToN)
- IEEE Transactions on Wireless Communications (TWC)
- Information Systems Journal (ISJ)
- IEEE Access