Tian Xie

CONTACT INFORMATION

Homepage: https://xietian1.github.io/
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RESEARCH INTERESTS

Security and privacy, mobile/wireless networks and systems, Internet of things, secure cloud computing/services, blockchain technologies, data analysis

EMPLOYMENT

Assistant Professor, Utah State University, UT	Aug 2023 – present
Research Assistant, Michigan State University, MI	Jan 2017 – May 2023
Software Engineering Intern, Apple, CA	May 2022 – Aug 2022
Software Engineering Intern, Google, CA	Sep 2021 – Dec 2021
Undergraduate Research Assistant, MSU, MI	Jan 2016 – Dec 2016

EDUCATION

Ph.D., Computer Science and Engineering,
Michigan State University, East Lansing, Michigan
Jan 2017 – May 2023

B.Sc with **honor**, Electrical and Computer Engineering
Michigan State University, East Lansing, Michigan
Sep 2013 – Dec 2016

PUBLICATIONS

[**ToN'24**] Min-Yue Chen, Yiwen Hu, Guan-Hua Tu, Chi-Yu Li, Sihan Wang, Jingwen Shi, **Tian Xie**, Li Xiao, Chunyi Peng, Zhaowei Tan, and Songwu Lu, "Taming the Insecurity of Cellular Emergency Services (9-1-1): From Vulnerabilities to Secure Designs," Accepted to IEEE/ACM Transactions on Networking (Impact Factor: 3.7).

[**ToN'23**] Sihan Wang, **Tian Xie**, Min-Yue Chen, Guan-Hua Tu, Chi-Yu Li, Xinyu Lei, Po-Yi Chou, Fucheng Hsieh, Yiwen Hu, Li Xiao, and Chunyi Peng, "Dissecting Operational Cellular IoT Service Security: Attacks and Defenses," Accepted to IEEE/ACM Transactions on Networking (Impact Factor: 3.7).

[**CNS'23**] Jingwen Shi, **Tian Xie**, Guan-Hua Tu, Chunyi Peng, Chi-Yu Li, Andrew Hou, Sihan Wang and Yiwen Hu, Xinyu Lei, Min-Yue Chen, Li Xiao and Xiaoming Liu . '*When Good Turns Evil: Encrypted 5G/4G Voice Calls Can Leak Your Identities*' IEEE Conference on Communications and Network Security (IEEE CNS) 2023, October 2- October 5, 2023, Olando, Florida (Acceptance Rate: 28.5%).

[**GetMobile'23**] Yiwen Hu, Min-Yue Chen, Guan-Hua Tu, Chi-Yu Li, Sihan Wang, Jingwen Shi, **Tian Xie**, Xiao Li, Chunyi Peng, Zhaowei Tan, Songwu Lu. '*Unveiling the Insecurity of Operational Cellular Emergency Services (911): Vulnerabilities, Attacks, and Countermeasures*' **An invited paper** to ACM GetMobile: Mobile Computing and Communications, GetMobile **Research Highlights**.

[**TMC'23**] **Tian Xie**†, Sihan Wang†(†: co-primary), Xinyu Lie, Jingwen Shi, Guan-Hua Tu, Chi-Yu Li. '*MPKIX: Towards More Accountable and Secure Internet Application Services via Mobile Networked Systems*' IEEE Transactions on Mobile Computing, Volume: 22, Issue: 6, pp. 3489 - 3507, June 1, 2023 (Impact Factor: 7.9).

[**ToN'23**] Yu-Han Lu, Sandy Hsin-Yu Hsiao, Chi-Yu Li, Yi-Chen Hsieh, Po-Yi Chou,

Yao-Yu Li, **Tian Xie**, Guan-Hua Tu. '*Insecurity of Operational IMS Call Systems: Vulnerabilities, Attacks, and Countermeasures*' IEEE/ACM Transactions on Networking, Volume: 31, Issue: 2, pp. 800-815, April, 2023 (Impact Factor: 3.7).

[**MobiCom'22**] Yiwen Hu, Min-Yue Chen, Guan-Hua Tu, Chi-Yu Li, Sihan Wang, Jingwen Shi, **Tian Xie**, Xiao Li, Chunyi Peng, Zhaowei Tan, Songwu Lu. '*Uncovering Insecure Designs of Cellular Emergency Services (911)*' Proceedings of ACM the 28th Annual International Conference On Mobile Computing And Networking (MobiCom) 2022, October 17- October 21, 2022, Sydney, Australia (Acceptance Rate: 18.1%), **Best Community Paper Award Runner-Up**, **AT&T Security Award**.

[**TMC'21**] **Tian Xie**, Guan-Hua Tu, Bangjie Yin, Chi-Yu Li, Chunyi Peng, Mi Zhang, Hui Liu, and Xiaoming Liu. '*The Untold Secrets of WiFi-Calling Services: Vulnerabilities, Attacks, and Countermeasures*' IEEE Transactions on Mobile Computing, Volume: 20, Issue: 11, pp. 3131-3147, Nov. 1 2021 (Impact Factor: 7.9).

[**TMC'21**] **Tian Xie**, Guan-Hua Tu, Chi-Yu Li, and Chunyi Peng. '*How Can IoT Services Pose New Security Threats In Operational Cellular Networks?*' IEEE Transactions on Mobile Computing, vol. 20, no. 8, pp. 2592-2606, 1 Aug. 2021 (Impact Factor: 7.9)

[**CODASPY'21**] Xinyu Lei, Guan-Hua Tu, **Tian Xie**, and Sihan Wang. '*BFastPay: A Routing-free Protocol for Fast Payment in Bitcoin Network*' Proceedings of the 11th ACM Conference on Data and Application Security and Privacy (CODASPY) 2021, April 26-28, 2021, taking place virtually, pp. 77-87 (Acceptance Rate: 29%).

[**CODASPY'21**] Yiwen Hu, Sihan Wang, Guan-Hua Tu, Li Xiao, **Tian Xie**, Xinyu Lei, and Chi-Yu Li. '*Security Threats from Bitcoin Wallet Smartphone Applications: Vulnerabilities, Attacks, and Countermeasures*' Proceedings of the 11th ACM Conference on Data and Application Security and Privacy (CODASPY) 2021, April 26-28, 2021, taking place virtually, pp. 89-100 (Acceptance Rate: 29%).

[**MobiCom'21**] Sihan Wang, Guan-Hua Tu, Xinyu Lei, **Tian Xie**, Chi-Yu Li, Po-Yi Chou, Fucheng Hsieh, Yiwen Hu, Li Xiao, Chunyi Peng. '*Insecurity of Operational Cellular IoT Service: New Vulnerabilities, Attacks, and Countermeasures*' Proceedings of ACM the 27th Annual International Conference On Mobile Computing And Networking (MobiCom) 2021, March 28 - April 1, 2022, New Orleans, United States, pp. 437-450 (Acceptance Rate: 19.9%).

[**MobiCom'20**] Yu-Han Lu, Chi-Yu Li, Yao-Yu Li, Sandy Hsin-Yu Hsiao, **Tian Xie**, Guan-Hua Tu, Wei-Xun Chen. '*Ghost Calls from Operational 4G Call Systems: IMS Vulnerability, Call DoS Attack, and Countermeasure*' Proceedings of ACM the 26th Annual International Conference On Mobile Computing And Networking (MobiCom) 2020, Sep. 21-25, 2020, London, United Kingdom, pp. 1-14 (Acceptance Rate: 16.15%).

[**MobiSys'20**] Xinyu Lei, Guan-Hua Tu, Chi-Yu Li, **Tian Xie**, Mi Zhang. '*SecWIR: Securing Smart Home IoT Communications via Wi-Fi Routers with Embedded Intelligence*' Proceedings of the 18th ACM International Conference on Mobile Systems, Applications, and Service (MobiSys) 2020, June 16-19, 2020, Toronto, Canada, pp. 260-272 (Acceptance Rate: 19.4%).

[**ICDCS'20**] Xinyu Lei, **Tian Xie**, Guan-Hua Tu and Alex X. Liu. '*An Interblockchain Escrow Approach For Fast Bitcoin Payment (Extended Abstract)*' 2020

IEEE 40th International Conference on Distributed Computing Systems (ICDCS), Singapore, Singapore, 2020, pp. 1201-1202 (Acceptance Rate: 20.0%).

[**CNS'20**] Xinyu Lei, Guan-Hua Tu, Alex X. Liu, **Tian Xie**. '*Fast and Secure kNN Query Processing in Cloud Computing*' 2020 IEEE Conference on Communications and Network Security (CNS), Avignon, France, 2020, pp. 1-9 (Acceptance Rate: 28.4%).

[**SSCI'19**] **Tian Xie**, Sihan Wang, Guan-Hua Tu, Chi-Yu Li, Xinyu Lei. '*Exploring the Insecurity of Google Account Registration Protocol via Model Checking*' 2019 IEEE Symposium Series on Computational Intelligence (SSCI), Xiamen, China, 2019, pp. 3087-3096.

[**CNS'18**] **Tian Xie**, Guan-Hua Tu, Chi-Yu Li, Chunyi Peng, Jiawei Li, and Mi Zhang. '*The Dark Side of Operational Wi-Fi Calling Services.*' 2018 IEEE Conference on Communications and Network Security (CNS), Beijing, China, 2018, pp. 1-9 (Acceptance Rate: 28.1%), **Best Paper Award**, **Google Security Reward**.

[**CNS'18**] Lei, Xinyu, Guan-Hua Tu, Alex X. Liu, Chi-Yu Li, and **Tian Xie**. '*The Insecurity of Home Digital Voice Assistants-Vulnerabilities, Attacks and Countermeasures.*' 2018 IEEE Conference on Communications and Network Security (CNS), Beijing, China, 2018, pp. 1-9 (Acceptance Rate: 28.1%).

[**ICC'18**] **Tian Xie**, Chi-Yu Li, Jiliang Tang, and Guan-Hua Tu. '*How Voice Service Threatens Cellular-Connected IoT Devices in the Operational 4G LTE Networks.*' 2018 IEEE International Conference on Communications (ICC), Kansas City, MO, USA, 2018, pp. 1-6 (Acceptance Rate: 39%).

[**NEMS'17**] **Tian Xie**, Xiaopeng Bi, Rui Luo, Fan Bin, Zhe Wang, and Wen Li. '*Optical propagation of blue LED light in brain tissue and Parylene-C.*' 2017 IEEE 12th International Conference on Nano/Micro Engineered and Molecular Systems (NEMS), Los Angeles, CA, USA, 2017, pp. 599-602.

[**TBioCAS'16**] Xiaopeng Bi, **Tian Xie**, Bin Fan, Wasif Khan, Yue Guo, and Wen Li. '*A flexible, micro-lens-coupled LED stimulator for optical neuromodulation.*' IEEE Transactions on Biomedical Circuits and Systems, 10.5 (2016): 972-978 (Impact Factor: 5.1).

HONORS & AWARDS		
	• ACM MobiCom Best Community Paper Award Runner-Up	2022
	• Dissertation Completion Fellowship	2022
	• Google Android Security Reward	2019
	• Graduate Office Fellowship	2019
	• Kaggle Competition Gold Medal	2018
	• Kaggle Competition Bronze Medal	2018
	• IEEE CNS Travel Grant	2018
	• IEEE CNS Best Paper Award	2018
	• Graduate Office Fellowship	2018
	• Graduate Office Fellowship	2017
	• B.Sc Graduation with Honor	2016
	• MSU Capstone Design Second Prize	2016
	• MSU Dean's List	2016
	• MSU Dean's List	2015
	• MSU Dean's List	2014

	• MSU Dean's List	2013

TEACHING EXPERIENCE

- Instructor: CS 5890/CS 6890 Computer Network and Security, Utah State University, Fall 2023
- Teaching Assistant: CSE 232 Introduction to Programming II, Michigan State University, Summer 2023
- Teaching Assistant: CSE 824 Advanced Computer Networks and Communications, Michigan State University, Fall 2022
- Teaching Assistant: CSE 320 Computer Organization and Architecture, Michigan State University, Summer 2020
- Teaching Assistant: CSE 476 Mobile App Development, Michigan State University, Fall 2019
- Teaching Assistant: CSE 425 Intro to Computer Security, Michigan State University, Fall 2018
- Teaching Assistant: CSE 425 Intro to Computer Security, Michigan State University, Spring 2018
- Teaching Assistant: CSE 476 Mobile App Development, Michigan State University, Fall 2017
- Teaching Assistant: CSE 422 Computer Network, Michigan State University, Spring 2017
- Undergraduate Assistant: ECE 313 Control Systems, Michigan State University, Spring 2016

ACADEMIC SERVICE

Technical Program Committee
- ACM Mobicom S3 2019

Conference Reviewer
- Infocom2023, BigData2023, Mobicom2022, CNS2022, Mobicom2021, IFIP2020, VNC2020, BigData2020, BigData2019, IFIP2019, ICDCS2019, Globalcom2019, VNC2018

Journal Reviewer
- IEEE Transactions on Information Forensics & Security (TIFS), IEEE Transactions on Mobile Computing (TMC), IEEE/ACM Transactions on Networking (ToN), Computer Networks, Computer & Security, ACM Transactions on Privacy and Security (TOPS/TISSEC), IEEE Transactions on Reliability