

# Niusen Chen

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## WORK EXPERIENCE

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**University of Wisconsin at La Crosse**  
*Assistant Professor*

**La Crosse, United States**  
*Aug. 2024 - Present*

**Michigan Technological University**  
*Research Assistant Professor*

**Houghton, United States**  
*Jan. 2024 - Aug. 2024*

## EDUCATION BACKGROUND

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**Michigan Technological University**  
*Ph.D., Computer Science*  
GPA: 3.98/4

**Houghton, United States**  
*Dec. 2023*

Advisor: Dr. Bo Chen

**University of Florida**  
*M.S., Electrical and Computer Engineering*  
GPA: 3.3/4

**Gainesville, United States**  
*May. 2018*

**Harbin Institute of Technology at Weihai**  
*B.Eng., Electrical Engineering and Automation*  
GPA: 83.9/100

**Weihai, China**  
*Jun. 2015*

## RESEARCH EXPERIENCE

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**Michigan Technological University**  
*Research assistant*

**Houghton, United States**  
*Jan. 2019-Dec. 2023*

- Secure Deletion on Sensitive Data.
- Plausibly Deniable Encryption Storage on Computing Devices.
- Data Recovery from Malicious Attacks .
- Autonomous Vehicle Security.

**Harbin Institute of Technology at Weihai**  
*Researcher*

**Weihai, China**  
*Jul. 2015-Apr. 2016*

- Built a welding platform by using Q series PLC.

## GRANTS

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- "Collaborative Research: SaTC 2.0: RES: Ensuring Software Stack Integrity of Software-Defined Vehicles via Hardware-Assisted Self-Attestation and Self-Restoration". \$260,000K, Niusen Chen (PI), under review
- "University of Wisconsin at La Crosse Faculty Reserch Grant: "Bridging the Gap: Securing CAN-FD and Traditional CAN Nodes Against Denial-of-Service Vulnerabilities", \$5.9K, Niusen Chen (PI), June 2025 - June 2026
- "GLRC/ICC Rapid Seedling Research Funding: CAN-FD Assisted DoS Detection and Defense Framework for Connected and Autonomous Vehicles", \$7.8K, Niusen Chen (PI) and Bo Chen (Co-PI), May 2024 - Aug. 2024

## TEACHING EXPERIENCE

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<b>Instructor</b> <i>CS472/572 Internet of Things</i>	<b>La Crosse, United States</b> <i>Sept. 2024 - Dec. 2024</i>
<b>Instructor</b> <i>CS120 Software Design I</i>	<b>La Crosse, United States</b> <i>Sept. 2024 - Dec. 2024</i>
<b>Instructor</b> <i>CS4740/CS5740 Development of Trusted Software</i>	<b>Houghton, United States</b> <i>Jan. 2024 - Apr. 2024</i>
<b>Volunteer</b> <i>2023 MTU Women in Computer Science Summer Program</i>	<b>Houghton, United States</b> <i>June 2023</i>
<b>Teaching assistant</b> <i>CS5740 Development of Trusted Software</i>	<b>Houghton, United States</b> <i>Jan. 2023-Apr. 2023</i>
<b>Volunteer</b> <i>2022 MTU Women in Computer Science Summer Program</i>	<b>Houghton, United States</b> <i>June 2022</i>
<b>Teaching assistant</b> <i>CS5740 Development of Trusted Software</i>	<b>Houghton, United States</b> <i>Jan. 2022-Apr. 2022</i>
<b>Volunteer</b> <i>2021 MTU Women in Computer Science Summer Program</i>	<b>Houghton, United States</b> <i>June 2021</i>
<b>Project leader</b> <i>2021 MiCUP research program</i>	<b>Houghton, United States</b> <i>May 2021-June 2021</i>
<b>Teaching assistant</b> <i>CS5472 Advanced Topics in Computer Security</i>	<b>Houghton, United States</b> <i>Jan. 2021-Apr. 2021</i>
<b>Tutor</b> <i>Workshop to Expose Undergraduate Women to Computer Science Research</i> Guide a few female students on conducting research on flash memory security.	<b>Houghton, United States</b> <i>Apr. 2019</i>
<b>Teaching assistant</b> <i>CS3421 Computer Organization</i>	<b>Houghton, United States</b> <i>Sep. 2018-Dec. 2018</i>

## PUBLICATIONS

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- Josh Dafoe, **Niusen Chen**, and Bo Chen. Hardware-assisted Secure Decentralized Cloud Storage via Self-audit and Self-repair, 21th EAI International Conference on Security and Privacy in Communication Networks (SecureComm '25), Xiangtan, China, July 2025.
- **Niusen Chen**, and Bo Chen. Enabling Assured Data Deletion in Public Clouds with Efficient Fine-grained Data Access. under review.
- Josh Dafoe, **Niusen Chen**, Bo Chen, and Zhenlin Wang. Enabling Per-file Data Recovery from Ransomware Attacks via File System Forensics and Flash Translation Layer Data Extraction. Cyber-security, 2024 (accepted).
- Josh Dafoe, Job Siy, **Niusen Chen**, and Bo Chen. Hardware-assisted Runtime In-vehicle ECU Firmware Self-attestation and Self-repair. 2024 EAI International Conference on Security and Privacy in Cyber-Physical Systems and Smart Vehicles (SmartSP '24), New Orleans, LA, November 2024.

- **Niusen Chen**, Bo Chen, and Weisong Shi. An Application-layer Plausibly Deniable Encryption System for Wearable Devices. Discover Internet Things, Volume 4, Article number 9, (2024).
- Lichen Xia, Jinghui Liao, **Niusen Chen**, Bo Chen, and Weisong Shi. A Simple Mobile Plausibly Deniable System Using Image Steganography and Secure Hardware. 2024 ACM Workshop on Secure and Trustworthy Cyber-Physical Systems (SaT-CPS '24, in conjunction with CODASPY '24), Porto, Portugal, June 2024.
- Jinghui Liao, **Niusen Chen**, Lichen Xia, Bo Chen, and Weisong Shi. FSPDE: A Full Stack Plausibly Deniable Encryption System for Mobile Devices. 14th ACM Conference on Data and Application Security and Privacy (CODASPY '24), Porto, Portugal, June 2024 (Acceptance rate: 21.3%).
- **Niusen Chen**, and Bo Chen. HiPDS: A Storage Hardware-independent Plausibly Deniable Storage System. IEEE Transactions on Information Forensics and Security (TIFS).
- Josh Dafoe, Harsh Singh, **Niusen Chen**, and Bo Chen. Enabling Real-Time Restoration of Compromised ECU Firmware in Connected and Autonomous Vehicles. 2023 EAI International Conference on Security and Privacy in Cyber-Physical Systems and Smart Vehicles (SmartSP '23), Chicago, IL, October 2023.
- Josh Dafoe, **Niusen Chen**, and Bo Chen. Poster: A Self-auditing Protocol for Decentralized Cloud Storage via Trusted Hardware Components. 2023 IEEE Symposium on Security and Privacy (S&P '23) Poster Session, San Francisco, CA, May 2023.
- **Niusen Chen**, Josh Dafoe, and Bo Chen. Poster: Data Recovery from Ransomware Attacks via File System Forensics and Flash Translation Layer Data Extraction. 2022 ACM Conference on Computer and Communications Security (CCS '22) Posters, Los Angeles, CA, November 2022.
- **Niusen Chen**, Bo Chen, and Weisong Shi. A Cross-layer Plausibly Deniable Encryption System for Mobile Devices. 18th EAI International Conference on Security and Privacy in Communication Networks (SecureComm '22), Kansas City, Missouri, October 2022
- Wen Xie, **Niusen Chen**, and Bo Chen. Enabling Accurate Data Recovery for Mobile Devices against Malware Attacks. 18th EAI International Conference on Security and Privacy in Communication Networks (SecureComm '22), Kansas City, Missouri, October 2022
- **Niusen Chen**, and Bo Chen. Defending against OS-level Malware in Mobile Devices via Real-time Malware Detection and Storage Restoration. Journal of Cybersecurity and Privacy 2, no. 2 (2022): 311-328.
- **Niusen Chen**, Bo Chen, and Weisong Shi. The Block-based Mobile PDE Systems Are Not Secure – Experimental Attacks. 2022 EAI International Conference on Applied Cryptography in Computer and Communications (AC3 '22), Nanjing, China, May 2022 (online).
- **Niusen Chen**, Bo Chen. Duplicates also Matter! Towards Secure Deletion on Flash-based Storage Media by Removing Duplicates. The 17th ACM ASIA Conference on Computer and Communications Security (ACM ASIACCS 2022), Nagasaki, Japan, May 2022 (**Acceptance rate: 18.4%**)
- **Niusen Chen**, Wen Xie, and Bo Chen. Combating the OS-level Malware in Mobile Devices by Leveraging Isolation and Steganography. The Second ACNS Workshop on Secure Cryptographic Implementation (SCI '21)(in conjunction with ACNS '21), Kamakura, Japan, June 2021
- **Niusen Chen**, Bo Chen, and Weisong Shi. MobiWear: A Plausibly Deniable Encryption System for Wearable Devices. 2021 EAI International Conference on Applied Cryptography in Computer and Communications (AC3 '21), Xiamen, China (converted to virtual conference due to COVID-19), May 2021 (**Best Paper Award**)
- Bo Chen, **Niusen Chen**. Poster: "A Secure Plausibly Deniable System for Mobile Devices against Multi-snapshot Adversaries", 2020 IEEE Symposium on Security and Privacy (S&P '20) (Poster & extended abstract)
- Wen Xie, **Niusen Chen**, Bo Chen. Poster: "Incorporating Malware Detection into Flash Translation Layer", 2020 IEEE Symposium on Security and Privacy (S&P '20) (Poster & extended abstract)

## PROFESSIONAL SERVICES

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- SubReviewer
  - IEEE Transactions on Dependable and Secure Computing (TDSC)
  - IEEE International Conference on Communications (ICC '19)
  - Proceedings of ACM SIGSAC Conference on Computer and Communications Security (CCS '19)
  - IEEE International Conference on Mobile Ad-Hoc and Smart Systems (MASS '19)
  - MDPI-Information
  - Springer-Cybersecurity
  - SECUREWARE 2020
  - IEEE International Conference on Security and Privacy in Digital Economy (SPDE 2020)
  - IEEE International Conference on Communications (ICC '21)
  - Cybersecurity
  - The Second ACNS Workshop on Secure Cryptographic Implementation (SCI '21)
  - Annual Computer Security Applications Conference (ACSAC '21)
  - ACM Asia Conference on Computer and Communications Security (AsiaCCS '22)
  - ESORICS '22
  - CodaSPY '24
  - AsiaCCS '24, AsiaCCS '25
- Artifact Evaluation Committee
  - Annual IEEE/IFIP International Conference on Dependable Systems and Networks 2024 (DSN'24)
  - The Annual Computer Security Applications Conference 2023 (ACSAC '23)
  - The Annual Computer Security Applications Conference 2022 (ACSAC '22)
- Doctoral Forum Program Committee
  - The 53rd Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN '23)

## ACTIVITIES

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| <b>Guest Lecturer</b><br><i>CS5472 Advanced Topics in Computer Security</i><br>Paper presentation: Deftl: Implementing plausibly deniable encryption in flash translation layer     | <b>Houghton, United States</b><br><i>March 2023</i>   |
| <b>Poster Presentation</b><br><i>ACM CCS 2022</i><br>Title: Data Recovery from Ransomware Attacks via File System Forensics and Flash Translation Layer Data Extraction             | <b>Los Angeles, United States</b><br><i>Nov 2022</i>  |
| <b>Poster Presentation</b><br><i>41st IEEE Symposium on Security and Privacy</i><br>Title: A Secure Plausibly Deniable System for Mobile Devices against Multi-snapshot Adversaries | <b>Digital Conference</b><br><i>May 2020</i>          |
| <b>Guest Lecturer</b><br><i>CS5740 Development of Trusted Software</i><br>Conduct a demo about using static analysis tool to find potential vulnerabilities in a real world project | <b>Houghton, United States</b><br><i>Feb. 2020</i>    |
| <b>Poster Presentation</b><br><i>2019 Flash Memory Summit</i><br>Title: Secure Deletion in Flash Storage Media  | <b>Santa Clara, United States</b><br><i>Aug. 2019</i> |
| <b>Poster Presentation</b>  | <b>Houghton, United States</b>                        |

## **Workshop to Expose Undergraduate Women to Computer Science Research**

*Apr. 2019*

Title: Towards Secure Deletion in Flash Storage Media

### **Guest Lecturer**

**Houghton, United States**

### **CS5472 Advanced Topics in Computer Security**

*Apr. 2019*

Give an introduction about hardware security and quantum cryptography

## **AWARDS & ACHIEVEMENTS**

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- 2024 MTU Bhakta Rath Research Award *Apr. 2024*
- MTU ICC Student Travel Grant *Sep. 2023*
- Travel Grant, EAI SmartSP 2023 *Sep. 2023*
- Outstanding Scholarship Award (top 1% of enrolled students in the department) *Feb. 2023*
- Doctoral Finishing Fellowship *Nov. 2022*
- Student Grant, 2021 ACM CCS *Nov. 2021*
- Student Grant, 2021 USENIX Security *Aug. 2021*
- Student Registration Award, 2021 IEEE Symposium on Security and privacy *May 2021*
- Student Registration Award, 2020 IEEE Symposium on Security and Privacy *May 2020*
- Student Travel Award, 2019 Flash Memory Summit *Aug. 2019*
- Achievement Award Scholarship in University of Florida *Aug. 2016*
- The 3rd -level scholarship at university *May 2015*
- The 3rd -level scholarship at university *Sep.2014*
- Excellent Volunteer in 2014 Weihai Long Distance Triathlon World Championships *Sep.2014*
- The 3rd prize in Campus Electronic Design Contest *May 2013*
- The 2nd prize in College Students Mathematical Contest in Heilongjiang province *Oct. 2012*
- The 1st prize in Campus Electronic Design Contest *Apr.2012*

## **REFERENCES**

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### **Dr. Bo Chen**

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