

# Chen Zhong

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Information and Technology Management  
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## RESEARCH INTEREST

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Cybersecurity; Data Analytics; Artificial Intelligence (Machine Learning, Deep Learning, Large Language Model); Explainable AI; Human-AI Teaming; Cybersecurity Education

## EDUCATION

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Pennsylvania State University, University Park, Pennsylvania USA

**Ph.D, Information Sciences and Technology** May 2016  
Advisor: Peng Liu, Co-Advisor: John Yen  
Thesis: “A Cognitive Process Tracing Approach to Cybersecurity Data Triage Operations Automation”

**Graduate Minor, Applied Statistics** 2014

Nanjing University, Nanjing, China

**Bachelor of Science, Computer Science and Technology** 2011

## ACADEMIC EXPERIENCE

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*Assistant Professor* Aug, 2020 - Present  
Cybersecurity, Department of Information and Technology Management, Sykes College of Business, The University of Tampa, Florida, USA

*Assistant Professor* Aug, 2016 - May, 2020  
Informatics and Computer Science, School of Science, Indiana University Kokomo,

Indiana, USA

*Research Assistant*

Aug, 2011 - May, 2016

College of Information Sciences and Technologies, Pennsylvania State University, University Park, Pennsylvania USA

*Teaching Assistant*

Sep, 2015 - Dec, 2015

Information Sciences and Technologies, Pennsylvania State University, University Park, Pennsylvania USA

## TEACHING EXPERIENCE

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### Course Instructor:

- ITM 380 Network Security SP 2024, FA 2023, SP 2023, FA 2021, SP 2021, FA 2020
- CYB 610 Cloud Systems Security FA 2023, FA 2021, FA 2020
- CYB 630 Incident Response Management SP 2024, FA 2023, SP 2023, SP 2021
- INFO I450/CSCI C380 System Analysis and Design (Capstone course) FA 2019, FA 2018
- CSCI C100 Problem Solving Using Computer (intro-level CS) FA 2018
- INFO I101: Introduction of Computer (intro-level CS and Informatics) FA 2019, FA 2018, SP 2018, FA 2017, SP 2017, FA 2016
- INFO I202: Social Informatics (Security and Privacy) SP 2019, SP 2018, SP 2017
- INFO I303: Organization Informatics (Organizational database and network, decision-making support system) SP 2019, SP 2018, SP 2017
- INFO I399: Advanced Topics in Informatics: Cybersecurity SP 2019, SP 2018

## GRANTS

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- PI: Chen Zhong, Co-PI: Alper Yayla, “The Impact of Artificial Intelligence on Cybersecurity Decision-Making”, Research Innovation and Scholarly Excellence (RISE) (\$14,462.40), The University of Tampa 2024-2025
- PI: Chen Zhong, “A Study on Transformer-Based Insider Detection”, Google Cloud Research Credits, (\$5,000.00), Google Cloud 2023-2024
- PI: Chen Zhong, Co-PI: Joo Baek, “Assessing Students’ Self-Efficacy and Learning Effectiveness Using Gamification in Cybersecurity Courses”, Research Innovation and Scholarly Excellence (RISE) (\$12,564.03), University of Tampa 2021-2022

- PI: Chen Zhong and Hong Liu, “Supporting Undergraduate Women in Computing: A Peer Mentoring and Collaboration Program”, Womens Philanthropy Leadership Council Grant (IU WPLC) (\$5,000), Indiana University. 2019-2020
- Co-PI: Hisako Masuda, Chen Zhong, and Yan He, “Computational Data Analysis Training Modules: Promoting Quantitative Reasoning and Early Research for Science Undergraduate Majors”, Indiana University Collaborative Research Grants (IUCRG) (\$43,667), Indiana University. 2018-2019
- PI: Chen Zhong, “LEGO Programming Training Approach”, 2019-20 IUK Women of the Well House (\$2,500), Indiana University Kokomo. 2018-2019
- PI: Chen Zhong, “Retrieving Cybersecurity Analysis Experience”, Grant-in-Aid of Faculty Research Grant (\$3,100), Indiana University Kokomo. 2018
- PI: Undergraduate Research/Creative Works (\$2,500), “A Visual System for Supporting Collaborative Cybersecurity Analysis”, Indiana University Kokomo. 2018
- Subcontractor, “Recognizing Unexplained Behavior in Network Events” (\$12,774), subcontract award from the Pennsylvania State University, ARO (Solicitation: W911NF-12-R-0012-04). 2017

## PUBLICATIONS

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[J]:Journal, [C]: Conference proceeding (peer-reviewed publication), [BC]:Book chapter, [T] thesis, \*:Corresponding author

### Selected Publications

1. [J] **Chen Zhong\***, Hisako Masuda, and Yan He, “Integrating Data Analytics Training into Curricula at Small Colleges: A Practical Framework for Enhancing Student Skills”, *Journal of Statistics and Data Science Education (renamed from Journal of Statistics Education)*, (**ABDC: B, IF: 1.34, Acceptance Rate: 17%**), (2024). <https://doi.org/10.1080/26939169.2024.2379333>
2. [C] Chang Yue, **Chen Zhong**, Kai Cheng\*, Zhiyu Zhang, and Yeonjoon Lee, “DarkFleece: Fleeceware Detection on Android System based on Dark Patterns”, In The 33rd *USENIX Security Symposium (USENIX)* (**Top Security Conference, Acceptance Rate: 18%**), (pp. 1-18).
3. [J] **Chen Zhong\***, J.B. Kim, Hong Liu, “The Art of Inclusive Gamification in Cybersecurity Training”, the *IEEE Security & Privacy* (2024). (**IF: 3.573, Acceptance Rate: 25%**)
4. [J] **Chen Zhong\***, Hong Liu, and Hwee-Joo Kam, “Mining Reddit Users Perspectives on Cybersecurity Competitions: A Mixed Method Approach”, *Information and Computer Security* (2024) (**ABDC: B, IF: 1.90**). <https://doi.org/10.1108/ICS-02-2023-0017>
5. [J] **Chen Zhong**, Sunita Goel\*, “Transparent AI in Auditing through Explainable AI”, *Current Issues in Auditing* (2024), (**ABDC: B, IF: 1.28**), 1-14.

<https://doi.org/10.2308/CIIA-2023-009>

6. [J] **Chen Zhong\***, J.B. Kim, “Teaching Business Students Logistic Regression in R with the Aid of ChatGPT”, the *Journal of Information Systems Education (JISE)* (2024), 35(2), 138-143. (**ABDC: B, IF: 1.698**)
7. [J] **Chen Zhong\***, J.B. Kim, Alper Yayla, “Enhancing Communication Among Remote Cybersecurity Analysts with Visual Traces”, *IEEE IT Professional* (2023), 25(5), 29-36 (**IF: 3.7, Acceptance Rate: 25%**).
8. [J] J.B. Kim\*, **Chen Zhong**, and Hong Liu, “Teaching Tip: What You Need to Know about Gamification Process of Cybersecurity Hands-on Lab Exercises: Lessons and Challenges”, the *Journal of Information Systems Education (JISE)* (2023), Vol. 34 : Iss. 4 , 387-405. (**ABDC: B, IF: 1.698**)
9. [J] Hong Liu, **Chen Zhong**, Awny Alnusair\*, and Sheikh Rabiul Islam. “FAIXID: A Framework for Enhancing AI Explainability of Intrusion Detection Results Using Data Cleaning Techniques”, *Journal of Network and Systems Management (JNSM)*, 29, 40 (2021). doi.org/10.1007/s10922-021-09606-8. (**IF: 2.250, Acceptance Rate: 35%**)
10. [J] **Chen Zhong\***, John Yen, Peng Liu, and Robert F. Erbacher. “Learning from experts’ experience: toward automated cyber security data triage.” *IEEE Systems Journal* (2018), 99, pp.1-12. (**IF: 4.463, Acceptance Rate: 21%**)
11. [J] **Chen Zhong\***, Tao Lin, Peng Liu, John Yen, and Kai Chen. “A cyber security data triage operation retrieval system.” *Computers & Security* (2018), 76, pp.12-31. (**ABDC: A, IF: 3.062**)

## Other Publications

12. [C] **Chen Zhong\***, “Supporting Effective Communication in Remote Cybersecurity Analyst Team”, *AMCIS 2023 (Best ERF Paper Runner-up Award)*.
13. [C] **Chen Zhong\***, Qinwei Ni, and Ping Chen, “Predicting Analysts’ Needs for Explainable Artificial Intelligence in Cybersecurity Analysis ”, *AMCIS 2023*.
14. [C] Hwee-Joo Kam, **Chen Zhong**, Hong Liu, Allen C. Johnston, “The Blend of Human Cognition and AI Automation: What Will ChatGPT Do to the Cybersecurity Landscape?”, *The 2023 Dewald Roode Workshop on Information Systems Security Research, IFIP WG8.11/WG11.13, 2023*.
15. [C] Ed Marcavage, Jacob Mason, and **Chen Zhong\***, “Predicting the Effectiveness of Blockchain Bug Bounty Programs”, *The 36th International FLAIRS Conference 2023* (poster).
16. [C] **Chen Zhong\***, Joo Baek Kim, and Hong Liu. “The Impact of Gamification on Students’ Learning Outcome and Career Interest in Cybersecurity Education.”, In *AMCIS 2022 Proceedings*. 9.
17. [C] Brock Floyd, Jared Jackson, Emma Probst, Hong Liu, Nischal Mishra, **Chen Zhong\***, “Understanding Learners’ Interests in Cybersecurity Competitions on Reddit”, In *2021 13th International Conference on Education Technology and Computers*, pp. 444-449. 2021.
18. [C] Joshua Ian Bertrand, Alex Martakis, Hong Liu, **Chen Zhong\***, and Jun Yao, “Exploring Participants’ Views of Cybersecurity Competitions Through

- the Lens of Social Media”, In *2020 IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA)*, pp. 155-162. IEEE, 2020.
19. [BC] **Chen Zhong**, John Yen, and Peng Liu\*. “Can Cyber Operations Be Made Autonomous? An Answer from the Situational Awareness Viewpoint.” In *Adaptive Autonomous Secure Cyber Systems*, pp. 63-88. Springer, Cham, 2020.
  20. [C] Lindsey Thomas, Moises Balders, Zach Courtney, **Chen Zhong\***, Jun Yao, and Chunxia Xu. “Cybersecurity Education: From Beginners to Advanced Players in Cybersecurity Competitions.” In *2019 IEEE International Conference on Intelligence and Security Informatics (ISI)*, pp. 149-151. IEEE, 2019.
  21. [C] **Chen Zhong\***, Awny Alnusair, Brandon Sayger, Aaron Troxell, and Jun Yao. “AOH-Map: A Mind Mapping System for Supporting Collaborative Cyber Security Analysis.” In *2019 IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA)*, pp. 74-80. IEEE, 2019.
  22. [C] Hong Liu\*, **Chen Zhong**, “Assessing Programming Education Approaches for College Beginners with Different Backgrounds”, the *10th International Conference On Education Technology And Computers (ICETC)*, pp. 136-139. ACM, 2018.
  23. [BC] Tao Lin, **Chen Zhong**, John Yen, and Peng Liu\*. “Retrieval of Relevant Historical Data Triage Operations in Security Operation Centers.” In *From Database to Cyber Security*, pp. 227-243. Springer, Cham, 2018.
  24. [C] Lindsey Thomas, Adam Vaughan, Zachary Courtney, **Chen Zhong\***, Awny Alnusair. “Supporting Collaboration among Cyber Security Analysts through Visualizing their Analytical Reasoning Processes”. *IEEE International Workshop on Machine Learning and Artificial Intelligence for Multimedia Creation*. In Conjunction with IEEE ICME '18. San Diego, CA, USA. (2018).
  25. [J] **Chen Zhong\***, Hong Liu, and Awny Alnusair. “Leveraging Decision Making in Cyber Security Analysis through Data Cleaning.” *Southwestern Business Administration Journal* 16, no. 1 (2017): 1
  26. [J] Awny Alnusair\*, **Chen Zhong**, Majdi Rawashdeh, M. Shamim Hossain, and Atif Alamri. “Context-Aware Multimodal Recommendations of Multimedia data in Cyber Situational Awareness.” *Multimedia Tools and Applications*, 76, no. 21 (2017): 22823-22843. (IF: 2.101)
  27. [C] Zachary Courtney, Scott Finney, Matt Floyd, **Chen Zhong\***, Awny Alnusair, “A Cognitive-Based Visualized Collaboration Support System for Cyber Defense Analysis”. The *International Conference of Technology Innovation, Management and Entrepreneurship (TIME-2017)*. Springer. (2017)
  28. [BC] **Chen Zhong\***, John Yen, Peng Liu, Robert F. Erbacher and Christopher Garneau. “Studying Analysts Data Triage Operations in Cyber Defense Situational Analysis.”, In Peng Liu, Sushil Jajodia, and Cliff Wang (Eds.), In *Theory and Models for Cyber Situation Awareness*, pp. 128-169. Springer, Cham, 2017.
  29. [C] **Chen Zhong\***, John Yen, Peng Liu, and Robert F. Erbacher. “Automate Cybersecurity Data Triage by Leveraging Human Analysts Cognitive Process.”, In *IEEE International Conference on Intelligent Data and Security (IEEE IDS)*, 2016.

30. [C] **Chen Zhong\***, John Yen, Peng Liu, Robert F. Erbacher, Renee Etoty, and Christopher Garneau. “An Integrated Computer-Aided Cognitive Task Analysis Method for Tracing Cyberattack Analysis Processes.” In *proceedings of the 2015 Symposium and Bootcamp on the Science of Security*, p. 9. ACM, 2015.
31. [C] **Chen Zhong\***, John Yen, Peng Liu, Robert F. Erbacher, Renee Etoty, and Christopher Garneau. “ARSCA: A Computer Tool for Tracing the Cognitive Processes of Cyberattack Analysis.” In *proceedings of IEEE Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)*, pp. 165-171. IEEE, 2015.
32. [T] **Chen Zhong\***, John Yen, Peng Liu, Robert F. Erbacher, and Christopher Garneau, “Peer Into Cyber Security Analysts’ Minds: Capturing and Studying Their Cognitive Processes of Analytical Reasoning.”, Graduate Exhibition of Research, Pennsylvania State University, University Park, PA, March 2015. *Awarded the First Place in Engineering.*
33. [BC] John Yen\*, Robert F. Erbacher, **Chen Zhong**, and Peng Liu. “Cognitive Process.” In Alexander Kott, Cliff Wang and Robert F. Erbacher (Eds.), *Cyber Defense and Situational Awareness* (ISBN: 978-3-319-11390-6), pp. 119-144. Springer International Publishing, 2014.
34. [C] **Chen Zhong\***, Deepak S. Kirubakaran, John Yen, Peng Liu, Robert F. Erbacher, Steve Hutchinson, Renee Etoty, Hasan Cam, and William Glodek. “RankAOH: Context-Driven Similarity-Based Retrieval of Experiences in Cyber Analysis.” In *proceedings of Cognitive Methods in Situation Awareness and Decision Support (CogSIMA)*, pp. 230-236. IEEE, 2014.
35. [C] **Chen Zhong\***, Deepak S. Kirubakaran, John Yen, Peng Liu, Steve Hutchinson, and Hasan Cam. “How to Use Experience in Cyber Analysis: An Analytical Reasoning Support System.” In *proceedings of Intelligence and Security Informatics (ISI)*, pp. 263-265. IEEE, 2013.
36. [C] **Chen Zhong\***, Mingyi Zhao, Gaoyao Xiao, and Jun Xu, “Leveraging Visualization Function in Hypothesis-Based Collaboration on Cyber Analysis.”, *IEEE VIS 2013 VAST Challenge Workshop*, Atlanta, GA, 2013. **Honorable Mention.**
37. [C] Mingyi Zhao\*, **Chen Zhong**, Richard Ciamaichelo, Michael Konek, Neela Sawant and Nicklaus A. Giacobe. “Federating Geovisual Analytic tools for Cyber Security Analysis.” In *2012 IEEE Conference on Visual Analytics Science and Technology (VAST)*, pp. 303-304. IEEE, 2012 (Short Paper).

## ACADEMIC HONORS AND AWARDS

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- Outstanding Faculty Advisor Award, The University of Tampa 2024
- COB Course Offload Teaching Award, The University of Tampa 2023
- Research Innovation and Scholarly Excellence (RISE) Award, The University of Tampa 2021
- COB Course Offload Research Award, The University of Tampa 2020

- Indiana University Trustees Teaching Award 2019
- Indiana University Kokomo Summer Faculty Fellowship 2019
- Women in Cybersecurity (WiCys) Faculty Scholarship 2018
- Grace Hopper Faculty Scholarship 2017
- Indiana University Kokomo Summer Faculty Fellowship 2017
- (ISC)<sup>2</sup> Foundation Graduate Scholarship 2015
- 1<sup>st</sup> Place in Engineering, Graduate Exhibition, Pennsylvania State University 2015
- HotSoS Conference Student Travel Award 2015
- CogSIMA Conference Student Travel Awards 2015, 2014
- Grace Hopper Scholarship of Women in Computing 2013
- IEEE VAST Challenge 2013 Honorable Mention 2013
- National Undergraduate Innovation Grant, China's Ministry of Education 2010
- National Scholarship, China's Ministry of Education (Awarded to top 1%) 2010, 2009, 2008
- Outstanding Student Awards (Awarded to top 5%), Nanjing University, China 2010, 2009, 2008

## Students' Awards

- National Cyber League (NCL) Top 50 Team 2024
- National Cyber League (NCL) Top 50 Team 2022
- Travel Award, Florida Undergraduate Research Conference 2022
- Runner-Up Award, COB Study Research Day 2022
- Women in Cybersecurity Student(WiCys) Scholarship 2021, 2019, 2018
- Grace Hopper Celebration (GHC) Student Scholarship 2018
- Best Poster Award, IUK Research Symposium 2018
- Travel Award for Presenting at National Conferences on Undergraduate Research (NCUR) 2018
- Best Poster Award of IUK Research Symposium 2017
- Travel Award for Presenting at NCUR 2017

## UNIVERSITY SERVICES

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- Diversity, Equity, and Inclusion Committee, University of Tampa 2023
- COB Teaching Effectiveness Committee, University of Tampa 2021, 2022, 2023
- Undergraduate Research Committee, University of Tampa 2021, 2022
- Informatics and Computer Science Faculty Search, Committee Member, Indiana University Kokomo 2019, 2018
- IU Science Symposium 2019, Committee Member, Indiana University Kokomo 2019
- IUK Science Fair, Task Force Member, Indiana University Kokomo 2018, 2017

- Math Faculty Search, Committee Member, Indiana University Kokomo 2018
- Computer Science Faculty Search, Committee Member, Indiana University Kokomo 2017
- Faculty Development and Grants, Committee Member, Indiana University Kokomo 2017
- Informatics Club, Advisor, Indiana University Kokomo 2019-2017
- Women of Technology Club, Advisor, Indiana University Kokomo 2019, 2018

## Student Involvement

- Advisor, Root@UT CTF club 2020-present
- Advisor, Crypto Student Club 2021-2022
- Advisor, IUK Informatics Club 2017-2020
- Advisor, IUK Women in Technology (WiTS) 2018-2020
- Coach, National Cyber League, IUK team 2018-2020

## PROFESSIONAL SERVICES AND MEMBERSHIP

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### Professional Community

- Speaker, “Unlocking AI: Meeting Analysts’ Dynamic Needs for Explainability in Cyber Defense”, Sunshine Cyber Conference 2024
- Training Workshop Organizer, BSide Tampa 2024

### Committee

- AMCIS Mini-Track Co-Chair (AMCIS 2024)
- Editorial Board Member, Journal of Information Systems Education (JISE)
- Program Committee, Silicon Valley Cybersecurity Conference (SVCC 2022)
- Program Committee, the IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA 2024, CogSIMA2022, CogSIMA2021, CogSIMA2020, CogSIMA 2019, CogSIMA 2018).
- Program Committee, the Special Issue on the NICE Framework of the Cybersecurity Skills Journal, 2020
- Panelist, National CyberWatch Center Curriculum Standards Panel for Information Security Fundamentals, 2019
- Program Committee, Women in Cybersecurity Conference (Wicys 2019).
- Program Committee, the International Conference on Software Security (ICSS 2019).
- Program Committee, the Tenth International Conference on Emerging Networks and Systems Intelligence (EMERGING 2018).
- Judge, ChinaViz Visual Analytics Challenges, 2018



- ACM Poster Judge, ACM Student Research Competition Graduate Finals, GHC, 2017
- Program Committee, The International Conference of Technology Innovation, Management and Entrepreneurship (TIME), 2017
- Session Chair, IEEE International Conference on Intelligence and Security Informatics (IEEE ISI), 2019
- Session Chair, IEEE International Conference on Intelligent Data and Security (IEEE IDS), 2015

## Reviewer

- Computers & Security
- IEEE Transactions on Dependable and Secure Computing Journal (2016-present)
- IEEE Systems Journal
- Organizational Behavior and Human Decision Processes, Elsevier
- Frontiers of Computer Science
- International Journal of Information Security
- Cybersecurity Journal, SpringerOpen
- ICIS 2024
- AMCIS 2024
- IJCNN 2024 (Special Session: Computational Intelligence in Transactive Energy Management and Smart Energy Network (CITESEN 2024))
- IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA 2019)
- IEEE International Conference on Multimedia and Expo (ICME 2019)
- 14th EAI International Conference on Security and Privacy in Communication Networks (SecureComm)
- Information Discovery and Delivery Journal (2017-present)
- IET Information Security Journal (2017-present)
- Security and Safety Journal (ICST) (2017-present)
- The 12th IEEE International Conference On Big Data Science And Engineering (IEEE BigDataSE-18)
- IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA 2018)
- 14th EAI International Conference on Security and Privacy in Communication Networks (SecureComm 2018)
- International Conference on Computing, Networking and Communications (ICNC 2018, 2017)
- 10th International Conference On Education Technology And Computers (ICETC 2018)
- 13th EAI International Conference on Security and Privacy in Communication Networks (SecureComm 2017)
- The 13th China International Conference on Information Security and Cryptology (INSCRYPT 2017), 2 reviews
- The 3rd International Workshop on Digital Crime and Forensics (IWDCF 2017)

- The 11th Chinese Conference on Trusted Computing and Information Security (CTCIS 2017)
- The 36th IEEE Performance Computing and Communications Conference (IPCCC 2017)
- International Conference for Military Communications (MILCOM 2017)
- The 14th International Conference on Security and Cryptography (SECRYPT 2017)
- The 36th IEEE International Performance Computing and Communications Conference (IPCCC 2016)
- The 10th IEEE International Conference on Open Source Systems and Technologies (ICOSST 2016)

## **Membership**

- Association for Information Systems (AIS)
- Women in Cybersecurity (WiCyS)
- Membership of ACM Science of Security VO