HONGLU JIANG, PH.D.

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Assistant Professor, Department of Computer Science and Software Engineering
Miami University

EDUCATION

- **The George Washington University, Washington, DC** **May, 2021**

  Ph.D., Computer Science

- **Qufu Normal University, Shandong, China** **June, 2012**

  M.S., Computer Applied Technology

- **Qufu Normal University, Shandong, China** **July, 2009**

  B.E., Network Engineering

WORKING EXPERIENCE

- **Assistant Professor (Sep. 2022-)**

  Miami University, Oxford, Ohio

- **Assistant Professor (Sep. 2021-Aug. 2022)**

  The University of Texas Rio Grande Valley, Brownsville, Texas

- **Graduate Research Assistant (Jan. 2019-May. 2021)**

  The George Washington University, Washington, DC

RESEARCH INTERESTS

- **Trustworthy AI**
- **Federated Learning**
- **Differential Privacy**
- **Wireless and Mobile Security**
- **IoT Networks and Edge Computing**

GRANT AWARDS

- Multidisciplinary Pathways to Cybersecurity Professionals, NIST: PI, 10/01/2024-09/30/2026, $199,850.

- Privacy-Preserving and Robust Federated Learning for IoT Systems, Miami University Research, Scholarship, and Artistry (RSA) Grant: PI, 06/01/2023-12/31/2024, $12,942.

- Examining the Privacy Implications from the Use of Wearables in Human Performance Modeling for Occupational Purposes, Miami University Advanced Research Team (ART) grant: Co-PI, 02/01/2023-06/30/2024, $59,339.

TEACHING

- **Instructor of CYB 235 Computer Network Design and Administration, Spring 2023, 2024 at Miami University.**

- **Instructor of CYB 234 System Administration and Scripting for Cybersecurity, Fall 2022, 2023, 2024 at Miami University.**

- Instructor of CSCI 4341 IoT Principles & Hacking, Spring 2022 at UTRGV.

- Instructor of CSCI 3333 Algorithms & Data Structures, Spring 2022 at UTRGV.

- Instructor of CSCI 2344 Programming in Unix/Linux Environment, Fall 2021 at UTRGV.

- Teaching Assistant of CSCI 1311 Discrete Structures, Spring 2020 at GWU.

- Teaching Assistant of CSCI 4431 Computer Networks, Fall 2020 at GWU.

- Teaching Assistant of CSCI 4331 Cryptography, Fall 2019 at GWU.

STUDENTS SUPERVISION

Ph.D. Students (Co-advise):

- Nov. 2021-, Jianan Chen, Indiana University–Purdue University Indianapolis

Master Students:

- Sep. 2023- Noah Greenbaum,, Miami University

- Sep. 2023- Ryan Holthouse, Miami University

- Sep. 2023- Jitendra Sharma, Miami University

- Mar. 2023- Huy Tran, Miami University

- Sep. 2022- Rachishun Banerjee (Co-advise), Miami University

- Sep. 2021- Aug. 2022, S. M. Sarwar, The University of Texas Rio Grande Valley

Undergraduate Students:

- Sep. 2024-, Liam McGuckin, Joseph Brocato, Jack McMaken, Sriram Ranganathan, Capstone project, Miami University

- Sep. 2024-, Caden Zeltne, Mason White, Michael Shyu, Sarah Staples, Capstone project, Miami University

- Sep. 2023-, Sriram Ranganathan, Miami University

- Sep. 2022- May 2023, Jenna Sayle, Miami University

PUBLICATIONS

Book

1. Jiguo Yu, Xiuzhen Cheng, Honglu Jiang, Dongxiao Yu, "Hierarchical Topology Control for Wireless Networks: Theory, Algorithms, and Simulation," *CRC Press*, Feb 2018.

Journal Articles

2. Jianchao Zheng, Honglu Jiang*, Liwen Yu, Samer Y Khamaiseh, Mostafizur Rahman, "On the Performance of Uplink NOMA Short-packet Communication System," *IEEE Transactions on Vehicular Technology,* 2024.

3. Honglu Jiang, Haotian Yu, Xiuzhen Cheng, Jian Pei, Robert Pless Jiguo Yu, "DP2-Pub: Differentially Private High-Dimensional Data Publication with Invariant Post Randomization," *IEEE Transactions on Knowledge and Data Engineering,* 2023.

4. Xiazhi Lai, Honglu Jiang*, Suman Bhunia and Huy Tran, "Reducing Latency in MEC Networks with Short-Packet Communications," *IEEE Transactions on Vehicular Technology,* doi: 10.1109/TVT.2023.3320578, 2023.

5. Jianan Chen, Qin Hu and Honglu Jiang, "Alliance Makes Difference? Maximizing Social Welfare in Cross-Silo Federated Learning," *IEEE Transactions on Vehicular Technology,* doi: 10.1109/TVT.2023.3320550, 2023.

6. Honglu Jiang, Jian Pei, Dongxiao Yu, Jiguo Yu, Bei Gong, Xiuzhen Cheng, "Applications of Differential Privacy in Social Network Analysis: A Survey," *IEEE Transactions on Knowledge and Data Engineering,* 35(1):108-27 2021.

7. Honglu Jiang, Jiguo Yu, Xiuzhen Cheng, Cheng Zhang, Bei Gong, Haotian Yu, "Structure-Attribute Based Social Network De-Anonymization with Spectral Graph Partitioning," *IEEE Transactions on Computational Social Systems*, 2021.

8. Honglu Jiang, S M Sarwar, Haotian Yu, Sheikh Arif Islam, "Differentially private data publication with multi-level data utility," *High Confidence Computing*, 2022.

9. Cheng Zhang, Honglu Jiang, Xiuzhen Cheng, Feng Zhao, Zhipeng Cai, Zhi Tian, "Utility Analysis on Privacy-Preservation Algorithms for Online Social Networks: An Empirical Study," *Personal and Ubiquitous Computing*, Aug. 2019, pp.1-17.

10. Jianan Chen, Qin Hu, Honglu Jiang, "Strategic signaling for utility control in audit games," *Computers & Security*, 2022.

11. Surendra Pathak, Sheikh Ariful Islam, Honglu Jiang, Lei Xu, Emmett Tomai, A survey on security analysis of Amazon echo devices, *High Confidence Computing*, 2022.

12. Lina Ni, Chao Li, Xiao Wang, Honglu Jiang, Jiguo Yu, "DP-MCDBSCAN: Differential Privacy Preserving Multi-core DBSCAN Clustering for Network User Data," *IEEE Access*, Vol. 6, 2018, pp. 21053-21063.

13. Biwei Yan, Jiguo Yu, Meihong Yang, Honglu Jiang, Zhiguo Wan, Lina Ni, "A Novel Distributed Social Internet of Things Service Recommendation Scheme Based on LSH Forest," *Personal and Ubiquitous Computing*, 2019, pp. 1-14.

14. Kan Yu, Meng Gao, Honglu Jiang, Guangshun Li, "Multi-Leader Election in Dynamic Sensor Networks," *EURASIP Journal on Wireless Communications and Networking*, 2017(1), pp.1-14.

15. Yuhong Sun, Ruinian Li, Honglu Jiang, Jianchao Zheng, Lina Ni, "Modeling and Analysis of Random Dense CSMA Networks," *EURASIP Journal on Wireless Communications and Networking*, 2018(1), pp. 1-17.

16. Feng Li, Jiguo Yu, Feng Zhao, Honglu Jiang, "A Novel Analysis of Delay and Power Consumption for Polling Schemes in the IoT," *Tsinghua Science and Technology*, Vol. 22, No. 4, 2017, pp. 368-378.

17. Jiguo Yu, Honglu Jiang, Guanghui Wang, Qiang Guo, "Clustering-based energy-efficient broadcast tree in wireless networks," *INTERNATIONAL JOURNAL OF COMPUTERS COMMUNICATIONS & CONTROL* Vol. 7 (4), 2014, pp. 785-790.

Conference Papers

18. Zhaowen Chen, Mingze Zhang, Caleb Mostyn, Honglu Jiang, Xianglong Feng, "Curse to Blessing: Leveraging Model Inversion Attacks to Detect Backdoor Attacks in Federated Learning", *IEEE International Performance Computing and Communications Conference (IPCCC)*, 2024.

19. Lihua Song, Chenying Cai, Shuhua Wei, Rochishnu Banerjee, Xianglong Feng, and Honglu Jiang*, "Byzantine-Robust Federated Learning Based on Blockchain", *The International Conference on Wireless Artificial Intelligent Computing Systems and Applications (WASA)*, 2024.

20. Lihua Song, Jing Li, Honglu Jiang*, Shuhua Wei, Yufei Guo, "Adaptive Edge-Level Personalization on Hierarchical Federated Learning", *IEEE International Performance Computing and Communications Conference (IPCCC)*, 2023.

21. Jianan Chen, Qin Hu, <u>Honglu Jiang</u>, "Social Welfare Maximization in Cross-Silo Federated Learning", *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2022.

22. Zhiling Wang, Qin Hu, Minghui Xu, <u>Honglu Jiang</u>, "Blockchain-based Edge Resource Sharing for Metaverse," *IEEE 19th International Conference on Mobile Ad Hoc and Smart Systems (MASS)* pp. 620-626, 2022.

23. <u>Honglu Jiang</u>, Yifeng Gao, S M Sarwar, Luis GarzaPerez, Mahmudul Robin, Differential Privacy in Privacy-Preserving Big Data and Learning: Challenge and Opportunity, Silicon Valley Cyberse-curity Conference, 2021.

24. <u>Honglu Jiang</u>, Jiguo Yu, Chunqiang Hu, Cheng Zhang, Xiuzhen Cheng, "SA Framework Based De-Anonymization of Social Networks," *Procedia Computer Science*, Vol. 129, 2018, pp. 358-363.

25. Cheng Zhang, <u>Honglu Jiang</u>*, Yawei Wang, Qin Hu, Jiguo Yu, Xiuzhen Cheng, "User Identity De-Anonymization Based on Attributes," *International Conference on Wireless Algorithms*, Systems, and Applications, Springer, 2019, pp. 458-469.

26. Cheng Zhang, Shang Wu, <u>Honglu Jiang</u>, Yawei Wang, Jiguo Yu, Xiuzhen Cheng, "Attribute-Enhanced De-Anonymization of Online Social Networks," *International Conference on Computational Data and Social Networks*, Springer, 2019, pp. 256-267.

27. Qi Sun, Jiguo Yu, <u>Honglu Jiang</u>, Yixian Chen, Xiuzhen Cheng, "De-anonymizing Scale-Free Social Networks by Using Spectrum Partitioning Method," *Procedia Computer Science*, Vol. 147, 2019, pp. 441-445.

28. Jianchao Zheng, Jiguo Yu, <u>Honglu Jiang</u>, Yunchuan Sun, "Modeling and Analysis of Two-tier MIMO Heterogeneous Cellular Network", *Procedia Computer Science*, Vol. 129, 2018, pp. 364-367.

29. Lu Zhang, Jiguo Yu, Chunqing Hu, <u>Honglu Jiang</u>, Qi Sun,"Fine-grained access control with privacy support and network service optimization in ad hoc networks," *Procedia Computer Science*, Vol. 129, 2018, pp. 372-374.

30. Yuhong Sun, Tianyi Song, <u>Honglu Jiang</u>, Jianchao Zheng, "Modeling of Random Dense CSMA Networks," *International Conference on Wireless Algorithms, Systems, and Applications*, 2017, pp. 71-82.

PROFESSIONAL ACTIVITIES

Selected Editorial Board Member

- Editor Board, Intelligent Information Management (IIM)

Guest Editor

- High Confidence Computing
- Special Issue on "Advances in 5G/6G-enabled Crowd Sensing IoT for *Digital Communications and Networks*, 2022
- Special Issue on "Advances in Sensing, Imaging, and Computing for Autonomous Driving" for *Sensors*, 2022

Paper Reviewer

- IEEE Internet of Things Journal
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Wireless Communications
- IEEE Transactions on Industrial Informatics

- IEEE Transactions on Vehicular Technology
- IEEE Transactions on Neural Networks and Learning Systems
- Computers & Security
- IEEE Transactions on Computational Social Systems
- IEEE Transactions on Network Science and Engineering
- ACM Transactions on Cyber-Physical Systems
- EURASIP Journal on Wireless Communications and Networking
- Frontiers of Information Technology & Electronic Engineering
- Digital Communications and Networks
- Computer Communications
- High Confidence Computing
- International Journal of Intelligent Systems
- Complexity
- Wireless Communications and Mobile Computing
- CCF Transactions on Networking
- Informs Journal on Computing
- IEEE INFOCOM 2022, 2023, 2024

Program Committee Member

- IEEE Vehicular Technology Conference (VTC) 2023
- ICCCN 2023, 2024
- ACM SIGKDD 2022
- REU Research in Networking and Systems (REUNS) 2022
- IIKI 2017

Panelist

- NSF Panelist, 2022, 2023

Membership

- Senior Member, IEEE

PRESENTATIONS AND INVITED TALKS

- "On Using Differential Privacy," Department of Computer Science, Saint Joseph's University, December 2022. <u>Invited Talk</u>
- "Women in CyberSecurity," CyberSecurity Club, Miami University, Nov 2022. <u>Invited Talk, Panelist</u>
- "Blockchain-based Edge Resource Sharing for Metaverse," IEEE MASS 2022, Denver, USA. <u>Conference talk</u>
- "User identity de-anonymization based on attributes," International Conference on Wireless Algorithms, Systems, and Applications, 2019, Hawaii, USA. <u>Conference talk</u>