

**Title:**

The 2021 International Workshop on Cyber Security with Big Data (WCSBD'21)

Abstract:

Cyberspace and its underlying infrastructure are vulnerable to a wide range of risk stemming from both physical and cyber threats and hazards. In light of the risk and severe consequences of cyber events, strengthening the security and resilience of cyberspace has become an important security mission. Moreover, the advent of big data provides a more powerful and intelligent way of defending against the risk in cyberspace than ever before. Hence, the 2021 International Workshop on Cyber Security with Big Data (WCSBD'21) aims to provide a forum for researchers and practitioners from academia and industry to exchange their latest research findings, novel ideas, and valuable comments regarding cyber security with big data. Its major concerns include cyber security theories, system design and implementation for cyber security, big data service for cyber security, artificial intelligence security, blockchain service for cyber security and emerging cyber security applications. The conference will be held together with the 7th International Conference on Artificial Intelligence and Security (ICAIS 2021). The workshop program will consist of oral presentation sessions, where each presenter will show his/her work followed by Q/A, and an open discussion session.

Scope and Topics:

We encourage submissions that present fundamental research to address challenges in enabling cyber security in the big data era. The topics to be addressed at the WCSBD'21 include, but are not limited to, all aspects of cyber security theories, methods, applications and big data technology, targeting one of the following six major areas:

- ✧ Cyber Security Theories
 - Cryptography and Cryptanalysis
 - Complex Network Theory for Cyber Security
 - Game Theory for Cyber Security
 - System Security and Defensive Technology
 - Network Security and Defensive Technology
 - Content Security and Defensive Technology
 - Social Network Security
- ✧ System Design and Implementation for Cyber Security
 - Architecture of Intrusion Detection Systems
 - Software-Defined Networking in Cyber Protection Systems
 - Network Function Virtualization for Cyber Security
 - Novel architecture and engineering approach in Cyber Security
- ✧ Big Data Service for Cyber Security
 - Machine Learning with Big Data
 - Machine Learning Security
 - Data Mining for Cyber Security
 - Scalable computing models, theories, and algorithms for Cyber Security



- o Mobile big data computing for Cyber Security
- ◇ Artificial Intelligence Security
- ◇ Blockchain Service for Cyber Security
- ◇ Emerging Cyber Security Applications

Program Committee Chairs:

Jieren Cheng, Hainan University, China
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Jieren Cheng received his Ph.D. degree in Computer Science and Technology from National University of Defense Technology (NUDT) in 2010. He is now a Professor and the Associate Dean of School of Computer Science & Cyberspace Security in Hainan University, China. He is awarded as “Famous South China Sea Scholar”. He serves as the director of the Hainan Provincial Blockchain Technology Engineering Research Center. His research interests include big data, cloud computing, cyber security, artificial intelligence and intelligent transportation. He is a senior member of CCF and a member of IEEE. He has been invited to serve as a reviewer in several journals and international conferences, e.g., Computer Research and Development, Computer Science, FAW, and a PC member for several international conferences. In recent years, hosted two National Natural Science Foundation of China, the United States Computer Science Research Center, an open fund; the Provincial Natural Science Foundation, the provincial science and technology innovation fund, the provincial second Five-Year planning issues, the provincial Department of Education funded projects and other provincial projects, the total project funding of which exceeds 10 million. And 4 science and technology projects at the university level. Nine key state-level projects such as the National Natural Science Foundation of China, the National Defense Pre-research Key Project, the State Support Program and the Ministry of Public Security's Innovative Planning Project have been completed or are under study by the major participants. The provincial natural sciences Fund, Provincial Science and Technology Plan Fund, Provincial Department of Education key projects and other provincial projects nineteen, 11 school-level projects, of which 25 projects have been completed. In recent years, he has hired and published over 80 academic papers, including 7 first-level journals and 39 papers by SCI or EI. He is the first author of eight authorized invention patent and owns 13 software copyrights. He published 2 academic monographs. He won the ICCCS 2018 Outstanding Contribution Award and won the first prize in excellent papers of ICCCS 2018 and ICCCS 2017.

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Dr. Qiang Liu received his Ph.D. degree in computer science and technology from National University of Defense Technology (NUDT) in 2014. He is now an Assistant Professor at NUDT and a member of IEEE and CCF. His research interests include 5G network, Internet of Things, wireless network security, and machine learning. Dr. Liu has contributed several archived journal and international conference papers, such as IEEE Network Magazine, IEEE Transactions on Wireless Communications, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Cybernetics, Pattern Recognition, IEEE Communications Letters, Neurocomputing, Neural Computing and Applications, Mobile Information Systems, EDBT'17, WCNC'17, ICANN'17, SmartMM'17, etc. He currently serves on the editorial review board of Artificial Intelligence Research journal, and he is a Co-Chair of SmartMM'18.

**Xiangyang (Alex X.) Liu**, Michigan State University, USA

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Prof. Alex X. Liu received his Ph.D. degree in Computer Science from The University of Texas at Austin in 2006. He received the IEEE & IFIP William C. Carter Award in 2004, the National Science Foundation CAREER Award in 2009, the Michigan State University Withrow Distinguished Scholar Award in 2011, and Best Paper Award of ICNP. His research focuses on networking and security. Prof. Liu has contributed tens of archived journal papers and more than 100 international conference papers, including MOBICOM, INFOCOM, SIGMETRICS, PODC, ICSE, USENIX Security, ICNP, ICDCS, NDSS, DSN, VLDB, ICDE and ACM/IEEE Transactions. He has also edited two books, namely “Firewall Design and Analysis” and “Hardware Based Packet Classification for High Speed Internet Routers”. Prof. Liu has hosted 6 NSF projects, and he served as a program chair or committee member of various top conferences, e.g., SIGMETRICS, INFOCOM, ICNP, ICDCS.

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