JIE XU

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RESEARCH INTERESTS

- **Trustworthy Artificial Intelligence**
- **Distributed System and Blockchain Consensus**
- **Network Security and Data Privacy**

EDUCATION

City University of Hong Kong (CityU) *Sep. 2020 - now*
Ph.D. in Computer Science (*Recipient of the Presidential PhD Scholarship*)
Supervisor: Prof. Xiaohua Jia (IEEE fellow)

University of Science and Technology of China (USTC) *Sep. 2017 - Jul. 2020*
Master of Engineering in Electronics and Communication Engineering (*Graduation with Honors*)
Supervisor: Prof. Peiling Hong and Prof. Kaiping Xue

University of Science and Technology of China *Sep. 2013 - Jul. 2017*
Bachelor of Engineering in Information Security (*Graduation with Honors*)
Bachelor of Literature in Communication (*Dual Degree*)

PUBLICATIONS AND PATENTS

- **Jie Xu**, Cong Wang and Xiaohua Jia, "**Machine Unlearning: A Comprehensive Review of Approaches and Challenges**", in progress

- **Jie Xu**, Yulong Ming, Zihan Wu, Cong Wang and Xiaohua Jia, "**X-shard: An Optimistic Cross-shard Transaction Processing Protocol for Account-based Blockchains**", submitted to *IEEE Transactions on Knowledge and Data Engineering.*

- **Jie Xu**, Sen Peng, Cong Wang and Xiaohua Jia, "**PuffChain: Dynamic Scaling BFT-based PoS Blockchain with Decoupling Functionalities**", submitted to *International Conference on Very Large Databases (VLDB).*

- **Jie Xu**, Qingyuan Xie, Sen Peng, Cong Wang, and Xiaohua Jia, "**AdaptChain: Adaptive Scaling Blockchain With Transaction Deduplication**," *IEEE Transactions on Parallel and Distributed Systems*, vol. 34, no. 6, pp. 1909-1922, 2023.

- **Jie Xu**, Cong Wang and Xiaohua Jia, "**A Survey of Blockchain Consensus Protocols**," *ACM Computing Surveys*, vol. 55, no. 13s, pp. 1-35, 2023.

- **Jie Xu**, Yingying Cheng, Cong Wang and Xiaohua Jia "**Occam: A Secure and Adaptive Scaling Protocol for Permissionless Blockchain**," in *Proceedings of the 41st IEEE International Conference on Distributed Computing Systems (ICDCS 2021)*, July 7-10, 2021.

- **Jie Xu**, Kaiping Xue, Hangyu Tian, Jianan Hong, David S.L. Wei, and Peilin Hong "**An Identity Management and Authentication Scheme Based on Redactable Blockchain for Mobile Networks**," *IEEE Transactions on Vehicular Technology*, vol. 69, no. 6, pp. 6688-6698, 2020.

- **Jie Xu**, Kaiping Xue, Shaohua Li, Jianan Hong, Peilin Hong, and Nenghai Yu "**Healthchain: A Blockchain-based Privacy Preserving Scheme for Large-scale Health Data**," *IEEE Internet of Things Journal*, vol. 6, no. 5, pp. 8770-8781, 2019. (**Highly Cited Papers**)

- **Jie Xu**, Kaiping Xue, Qingyou Yang, and Peilin Hong, "**PSAP: Pseudonym-based Secure Authentication Protocol for NFC Applications**," *IEEE Transactions on Consumer Electronics*, vol. 64, no. 1, pp. 83-91, 2018.

- Sen Peng, Yufei Chen, **Jie Xu**, Zizhuo Chen, Cong Wang and Xiaohua Jia, "**Intellectual Property Protection of DNN Models**," *World Wide Web Journal*, 2022.

- Xingyi Luo, Kaiping Xue, **Jie Xu**, Qibin Sun, and Yongdong Zhang, "**Blockchain-based Secure Data Aggregation and Distributed Power Dispatching for Microgrids**," *IEEE Transactions on Smart Grid*, vol. 12, no. 6, pp. 5268 - 5279, 2021.

- Hangyu Tian, Kaiping Xue, Xinyi Luo, Shaohua Li, **Jie Xu**, Jianqing Liu, Jun Zhao, David S.L. Wei, "**Enabling Cross-chain Transactions: A Decentralized Cryptocurrency Exchange Protocol**," *IEEE Transactions on Information Forensics and Security*, vol. 16, pp. 3928 - 3941, 2021.

- Qingyou Yang, Kaiping Xue, **Jie Xu**, Jiajie Wang, Fenghua Li, and Nenghai Yu, "**AnFRA: Anonymous and Fast Roaming Authentication for Space Information Network**," *IEEE Transactions on Information Forensics and Security*, vol. 14, no. 2, pp. 486-497, 2019.

- Peixuan He, Kaiping Xue, **Jie Xu**, Qiudong Xia, Jianqing Liu, Hao Yue, "**Attribute-based Accountable Access Control for Multimedia Content with In-network Caching**," in *Proceedings of the 2019 IEEE International Conference on Multimedia and Expo (ICME 2019)*.

- Wei Meng, Kaiping Xue, **Jie Xu**, Jianan Hong, and Nenghai Yu, "**Low-Latency Authentication Against Satellite Compromising for Space Information Network**," in *Proceeding of the 15th IEEE International Conference on Mobile Ad Hoc and Sensor Systems (MASS 2018)*. IEEE, 2018, pp. 237-244.

- **Patent**: Anonymous and Fast Roaming Authentication for Space Information Network, CN108282778A

Selected Honors and Awards

- Research Tuition Scholarship, 2023
- CityU Presidential PhD Scholarship, 2020 (Only 10 awardees university wide)
- Outstanding Graduate with High Moral and Academic Standards from Anhui Province, 2020 (Top 1%)
- Outstanding Graduate from USTC, 2020
- National Scholarship of China, 2019 (Top 1%)
- Best Paper Runner Up Award of IEEE MASS, 2018
- Outstanding Graduate Student Scholarship of USTC, 2017, 2018, 2019
- Excellent Graduation Thesis of USTC, 2017 (Top 1%)
- Honor of Wang Daheng Talent Program in Optical and Mech-electronical Science and Technology, 2016

Selected Teaching and Professional Services

- Teaching assistant for CS8692 Comprehensive Studies in Selected Topics in CS, CS1102 Introduction to Computer Studies, CS2204 Fundamentals of Internet Applications Development, etc.

- Invited reviewer of IEEE Transactions on Computers, IEEE Transactions on Dependable and Secure Computing (TDSC),Transactions on Mobile Computing(TMC), IEEE Transactions on Services Computing (TSC), IEEE International Conference on Distributed Computing Systems (ICDCS), etc.