

Xinshu MA

PERSONAL DATA

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EDUCATION

- 2017-PRESENT **Master of Cyberspace Security**,
College of Computer Science and Technology,
Nanjing University of Aeronautics and Astronautics (NUAA), China
Supervisor: Prof. Zhe Liu
- 2013-2017 **Bachelor of Computer Science and Technology**,
College of Computer Science and Technology,
Nanjing University of Aeronautics and Astronautics (NUAA), China
GPA: [91/100](#), Ranking [2/100](#).

SELECTED AWARDS AND HONOURS

- DEC. 2017 Second Prize of Information Security and Countermeasures Contest
- OCT. 2017 **First Class Freshman Scholarship of NUAA** ([CNY 20,000, 1/190](#))
- 2017-2019 First Class Scholarship for Graduate Students of NUAA ([CNY 10,000/year](#))
- MAR. 2017 **Third Prize of the Ministry of Industry and Information Technology Innovation Scholarship** ([CNY 10,000](#))
- Nov. 2016 National Inspirational Scholarship ([CNY 5000](#))
- Nov. 2015 **National Scholarship** ([CNY 8000, 3/310](#))
- 2015-2017 First Class Scholarship of NUAA
- Nov. 2014 Third Class Scholarship of NUAA

PUBLICATIONS AND PATENTS

- 1 [Xinshu Ma](#), Youwen Zhu*, Xingxin Li: An efficient and secure ridge regression outsourcing scheme in wearable devices. Computers & Electrical Engineering. **CEE** 2017, 63: 246-256.
- 2 [Xinshu Ma](#), Xiaojun Zhu*, Bing Chen: Exact Algorithms for Maximizing Lifetime of WSNs Using Integer Linear Programming. Wireless Communications and Networking Conference. **WCNC**. 2017.
- 3 [Xinshu Ma](#), Chunpeng Ge, Zhe Liu: Blockchain-enabled Privacy-preserving Internet of Vehicles: Decentralized and Reputation-based Network Architecture. International Conference on Network and System Security. **NSS** 2019. **Best Paper Award** (To appear)
- 4 [Xinshu Ma](#), Chunpeng Ge, Zhe Liu: Semi-autonomous Distributed Blockchain-based Framework for UAVs Communication Systems. Journal of Systems Architecture. **JSA** 2020. (Major revision)
- 5 [Xinshu Ma](#), Chunpeng Ge, Zhe Liu: Blockchain-enabled Privacy-preserving Internet of Vehicles with QoS guarantee (extended version). IEEE Transactions on Dependable and Secure Computing. **TDSC** 2020 (Submitted)

Curriculum Vitae

- + PRC Patent Application No.: 201610659332.X, Publication No. :CN106131878A, A kind of data collection method for energy heterogeneous wireless sensor network, Xiaojun Zhu, [Xinshu Ma](#) and Jing Zhang, 2016.08.11

RESEARCH EXPERIENCE

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| JAN-MAY 2019 | <p>Research Assistant, Institute of Information Systems Technology and Design, Singapore University of Technology and Design (SUTD) <u>Supervisor: Prof. Pawel Szalachowski</u></p> <ul style="list-style-type: none">• Provided security analysis of a novel Proof of Work (PoW) consensus algorithm named StrongChain (Usenix'19), utilizing the Matlab toolbox of Markov Decision Process (MDP) to model the attack process running on the Amazon EC2 and contributing to find the optimal Selfish Mining Attack Strategy, also simulating the optimal strategy in the Java blockchain simulator. |
| 2016-2017 | <p>Undergraduate Research, College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics (NUAA) <u>Supervisor: Prof. Youwen Zhu</u></p> <ul style="list-style-type: none">• Conducted the experiment of a ridge regression outsourcing scheme (MATLAB) which used random vectors and dense matrices to perturb input dataset and regression output, provided the theoretical analysis and wrote the paper. |
| 2015-2016 | <p>Undergraduate Research, College of Computer Science and Technology, Nanjing University of Aeronautics and Astronautics (NUAA) <u>Supervisor: Prof. Xiaojun Zhu</u></p> <ul style="list-style-type: none">• Conducted the simulation experiment (JAVA) of an exact algorithm proposed by Prof. Zhu that performs binary search over possible lifetimes, and uses integer linear programming to check the feasibility of a candidate lifetime to obtain the maximum lifetime of a data gathering tree in wireless sensor networks. Besides, contributed to collecting, processing and analyzing the simulation experimental results, as well as writing the draft. |

LANGUAGES COMPETENCIES

IELTS®: 6.5. (LISTENING:6.5; READING:7.5; SPEAKING:5.5; WRITING: 6)