Xicheng **Wan**

Research Interest: *Applied cryptography, Machine learning security & privacy*

(+86) 180-1336-7741 | xicheng.wan@outlook.com

Education

The Chinese University of Hong Kong   *Shatin, Hong Kong*

M.Sc in Information Engineering   *Sept. 2021 - Jun. 2022*

- GPA 3.71/4.00

Nanjing University of Science and Technology   *Nanjing, Jiangsu*

B.S. in Automation   *Sept. 2017 - Jun. 2021*

- GPA 86.3/100

Publication

Towards Privacy-Preserving and Verifiable Federated Matrix Factorization   *Knowledge-Based Systems 2022*

Xicheng Wan, Yifeng Zheng, Qun Li, Anmin Fu, Mang Su, and Yansong Gao

Research Experience

Data science security and privacy   *Research Intern*

Advisor: **Prof. Tianhao Wang** (The University of Virginia)   *Sept. 2022 - Present*

- Designing local differential privacy protocol in data mining and machine learning problems.

Privacy-preserving for machine learning   *Research Intern*

Advisor: **Prof. Yifeng Zheng** (Harbin Institution of Technology, Shenzhen), **Prof. Yansong Gao**

(Nanjing University of Science and Technology)   *Nov. 2020 - July. 2022*

- Utilizing light-weight cryptography technology secure aggregation and commitment scheme for privacy-preserving federated matrix factorization, preventing sensitive information leakage and verifying the model result.
- Combining with different privacy-preserving schemes such as differential privacy and cryptography techniques, which achieves both privacy and accuracy from these hybrid protocols.

Graph neural network for network representation   *Research Intern*

Advisor: **Prof. Xiaobo Shen** (Nanjing University of Science and Technology)   *Jun. 2019 - Sept. 2020*

- Implementing graph convolution network on network representing learning task.

Selected Honors & Awards

Outstanding Student Scholarship   *MScIE Academic Achievement*

The Chinese University of Hong Kong   *Mar. 2022*

- Department of Information and Engineering

Outstanding Student Scholarship   *First & Second Prize*

Nanjing University of Science and Technology   *2018, 2019, 2020*

The 8th Huawei Code Craft Software Competition   *Second Prize*

Rank: 16/32, Guangdong-Hong Kong-Macao Greater Bay Area   *Apr. 2022*

- Designing a scheme to allocate the network traffic with minimum bandwidth cost. The total bandwidth cost of each edge node is constrained by limited computation resource.

The 8th TipDM Cup Data Mining Competition   *Third Prize*

Jiangsu Province   *May. 2020*

- Text mining task for "Intelligent government"
- Being responsible for the classification of LSTM first-level tags, TF-IDF keyword extraction results, and the establishment of interpretability, correlation, and completeness models

MCM & APMCM Mathematical Contest in Modeling   *Third Prize*

NATIONWIDE COMPETITION   *Jan. 2020, Mar. 2020*

- Working as a group leader.
- APMCM: Being responsible for the establishment of forecasting economic growth trend model using the principal components analysis method.
- MCM: Utilizing LSTM sentiment classification and partial least squares model to analyze online comments from Amazon website.

National Advanced Mathematics Competition   *First Prize, Second Prize*

JIANGSU PROVINCE   *Jun. 2018, Oct. 2019*

Extracurricular Activities

Table Tennis Team, School of Automation   *Leader*

LEADING TEAM MEMBERS TO PARTICIPATE IN COMPETITIONS   *Nov. 2020*

Table Tennis Association of Nanjing University of Science and Technology   *Vice President*

ORGANIZING COMPETITIONS WITH OTHER MEMBERS   *Sept. 2018- June. 2019*

Technical Skills

Programming, C/C++, Python, Matlab

Tool, Linux, LaTeX, Multisim

Language, Chinese, English (IELTS 6.5)