Mingrui Ma

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Education

Sep 2022 – Present
M.S. in Computer Science, Network Security, *Huazhong University of Science and Technology (HUST)*, Wuhan, Hubei, China
Expected Graduation: June 2025

Sep 2018 – June 2022
B.S. in Computer Science, Information Security, *HUST*, Wuhan, Hubei, China, *GPA 3.87/4.00*
Outstanding Graduate, Outstanding Undergraduate Graduation Design Award

Publications & Preprints

[1] **Mingrui Ma**, Lansheng Han, and Chunjie Zhou. Research and application of artificial intelligence based webshell detection model: A literature review, 2024. https://arxiv.org/abs/2405.00066

[2] **Mingrui Ma**, Lansheng Han, and Chunjie Zhou. Large language models are few-shot generators: Proposing hybrid prompt algorithm to generate webshell escape samples, 2024. https://arxiv.org/abs/2402.07408

[3] **Mingrui Ma**, Lansheng Han, and Chunjie Zhou. Research and application of transformer based anomaly detection model: A literature review, 2024. https://arxiv.org/abs/2402.08975

[4] **Mingrui Ma**, Lansheng Han, and Chunjie Zhou. Btad: A binary transformer deep neural network model for anomaly detection in multivariate time series data. Advanced Engineering Informatics, 56:101949, 2023. https://doi.org/10.1016/j.aei.2023.101949

[5] ZHU Lina, **MA Mingrui**, and ZHU Dongzhao. Detection method for c language family based on graph neural network and generic vulnerability analysis framework. Netinfo Security, 22(10):59, 2022. http://netinfo-security.org/CN/Y2022/V22/I10/59

[6] **Ma, Mingrui**, Lansheng Han, and Yekui Qian. Cvdf dynamic—a dynamic fuzzy testing sample generation framework based on bi-lstm and genetic algorithm. Sensors, 22(3), 2022. https://www.mdpi.com/1424-8220/22/3/1265

Review Experience

Jul 2023 – Present
Official Reviewer for the TOP SCI Journal "IEEE Transactions on Intelligent Transportation Systems" (JCR Q1, IF 8.5), *IEEE*
Main review directions include, but are not limited to, neural network architecture and multivariate time series analysis. Relevant review works have been indexed by international databases (e.g. Web of Science, ORCID, etc.).

May 2023 – Present **Official Reviewer for the SCI Journal "Applied Intelligence" (JCR Q2, IF 5.3)**, *Springer*

Main review directions include, but are not limited to, deep learning, neural network, curriculum learning, contrastive learning. Nearly 20 reviews have been completed and have been highly evaluated by journal chairs.

Research Experience

Jun 2023 – Present **The Fundamental Research Funds for the Central Universities, Grant: YCJJ20230464, Project Leader**, *HUST*

Hosted the scientific research project "IntelliSense - Cross-Domain Implicit Space-Oriented Malicious Code Adversarial Detection and Source Tracking System", passed the mid-term evaluation with full marks (Grade A), and has reached the standard of outstanding project completion.

Apr 2023 – Present **RUSTSBI Open-Source Community, Major Contributor, Core Member**, *RUST Community*

Contirbuted to 2 Pull-Requests as a major contributor, both of which have been reviewed and merged.

Sep 2022 – Present **The National Key Research and Development Program of China, Key Project Member**, *HUST*

As a core member of the project, responsible for neural network algorithm development, language model performance optimization, etc.

Invention Patents & Software Copyrights

Patent 1 A Method, Device, and System for Evidence Generation Based on Multivariate Collaborative Analysis, NO: 2024031901604420, **Primary Inventor**

Patent 2 A Normalized Log Generation Method Based on the Entropy Increase Principle, NO: 2023112102142270, **Primary Inventor**

Patent 3 A Method for Multidimensional Graph Tensor Fusion Representation and Embedding of Codes, NO: 2023052300567880, **Primary Inventor**

Patent 4 A Method and System for Implicit Intelligence Tracking of Malicious Code under Polymorphic Concealment, NO: 2023052300572110, Fourth Co-inventor

Copyright 1 IntelliSense - Cross-Domain Implicit Space-Oriented Malicious Code Adversarial Detection and Source Tracking System, NO: 11285657, **Primary Designer**

Copyright 2 Automated Attack Path Generation System for Non-Control Flow Hijacking of Binary Programs V1.0, NO: 13116013, Fifth Designer

Honors & Awards

Dec 2023 **(National Level)** The 18th "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition, **Grand Prize**, **Captain & Project Leader**

Nov 2023 **(National Level)** The 2nd China Graduate Network Security Innovation Competition, **First Prize**, **Captain & Project Leader**

Jun 2023 The 14th Hubei Province "Challenge Cup" College Student Curricular Academic Science and Technology Works Competition, **First Prize**, **Captain & Project Leader**

Apr 2023 The 9th "QiuShi Cup" College Student Curricular Academic Science and Technology Works Competition, **Grand Prize**, **Captain & Project Leader**

Dec 2022 **(International Level)** AMWD 2022: Alibaba Cloud Security WEBSHELL Text Detection Algorithm Competition, **World Ranking: TOP 10%**

Nov 2022 **(National Level)** The 1st China Graduate Network Security Innovation Competition, **National Champion & National Record Holder**

Sep 2022 – Present **National Scholarship** for the 2023 Academic Year (Ranked Top 0.2% among all graduates), **HUAWEI Scholarship** for the 2024 Academic Year (Ranked Top 1 among all candidates), **Merit Postgraduate** for the 2023 Academic Year, **The Top Prize Scholarship** for the 2023, 2022 Academic Year, **GENGSHU PRIZE** for the 2023 Academic Year, **Zhixing Scholarship** for the 2023 Academic Year, **Outstanding Undergraduate Graduation Design Award** for the 2022 Academic Year

Teaching Experience

Sep 2022 – Mar 2023 **Teaching Assistant** for the Graduate Course "Computer Virus Propagation Models"

Mar 2023 – June 2023 **Teaching Assistant** for the Undergraduate Course "Comprehensive Practice of Network Security"

Skills

Language English (fluent), Cantonese Chinese (native), Mandarin Chinese (native)

Programming Python, C/C++, Go, PHP, PyTorch, Tensorflow