

Zichuan Xu

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EDUCATION

- **Huazhong University of Science and Technology** Wuhan, China
Bachelor of Engineering - Cyberspace Security GPA: 3.93/4 Sept. 2019 - June 2023
Courses: Linear Algebra: 100, Calculus(I)(A): 91, Calculus(I)(B): 97, Discrete Mathematics(I): 96, Discrete Mathematics(II): 100, Advanced Programming Language(C): 93, Computer Organization: 98, Probability Theory and Mathematical Statistics: 97

RESEARCH EXPERIENCE

- **Summer Internship in the Department of Computer Science at Virginia Tech** Remote
Undergraduate Research Assistant Apr. 2022 - Sept. 2022

I worked as a summer intern in Prof. Gao's security laboratory at Virginia Tech. My research field contains the provenance graph, Graph Neural Network(GNN), and threat hunting. My research project is to propose a general graph learning framework for system provenance-based security analysis that applies to kinds of downstream tasks. My contributions are as follows:

- **Preparing data sets for evaluation:** Used back-tracking and forward-tracking to locate system entities and events that are related to attacks in system provenance graphs to label the datasets.
- **Proposing the framework:** Proposed a clear graph learning framework, from problem definition to score function and loss function, also opened source our implementation code for four downstream tasks on GitHub.
- **Evaluating the framework:** Used a couple of datasets labeled by us to evaluate the framework and recorded the results.

PROJECTS

- **A Single-Disease Medical Path Management System** Wuhan, China
Java, Springboot, Mybatis, MySQL July 2021 - Sept. 2021

I worked as a back-end developer in the Blockchain Security Research Center under the supervision of Prof. Dai. It is a project that records the entire process of a patient with a specific disease from admission to completion of treatment. I was responsible for all the back-end development of the project. My contributions are as follows:

- **Building and connecting the database:** Designed all the tables in the database according to project requirements, designed interfaces that interact with the database and processed the core logic of interactions with the database.
- **Interacting with the front-end:** Designed interfaces that interact with the front-end and implemented functions like receiving forms, returning results, and log-in verification.

- **Computer Telecommunications & Network Lab Project** Wuhan, China
C++, Qt Sept. 2021 - Oct. 2021

It is a GUI client program based on the TFTP protocol implemented by C++ and Qt. TFTP protocol is a simple protocol for file transmission. And the program is capable of downloading files from and uploading files to the TFTP server, supporting two different transmission modes, text mode, and binary mode. It can also cope with special network environments, such as packet loss environments.

HONORS AND AWARDS

- Scholarship for Culture and Sports - September 2022
- Second Prize of Blue Bridge Cup of Java Software Development - April 2022
- Scholarship of Mingde for Academic Excellence (**top 10%** students) - September 2021
- Scholarship of Mingde for Social Service - September 2021
- Scholarship for Academic Excellence - September 2020
- Scholarship for Self-improvement - September 2020

SKILLS

- **Languages:** Java, SQL, C, Python, JavaScript
- **Frameworks:** Springboot, Mybatis, Mybatis-Plus, Qt, PyTorch
- **Tools:** LaTeX, Git, PostgreSQL, MySQL
- **Platforms:** Linux, Web, Windows

EXTRACURRICULAR EXPERIENCE

- **A Video Editor in the Department of Media of the Student Association Union** Wuhan, China
Video Editor Oct. 2019 - June. 2021
 - **Conducting training:** Conducted online and offline video edit technique training, specifically how to use PR and AE, which impacted over 50 students.
 - **Video Production:** Produced promotional videos for the Student Association Cultural Festival of Huazhong University of Science and Technology in 2019 and 2020.