

Zichuan Xu

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Education

Huazhong University of Science and Technology

2019.9 – 2023.6

Bachelor of Engineering in Cyberspace Security

Wuhan, China

- GPA: **3.94/4.0**
- Core Courses & Grades: Linear Algebra: 100, Discrete Mathematics(II): 100, Computer Organization: 98, Calculus(I)(B): 97, Probability Theory and Mathematical Statistics: 97, Discrete Mathematics(I): 96, Advanced Programming Language(C): 93, Calculus(I)(A): 91

Work Experience

Shanghai Dameng Database Co., Ltd

2023.7 – Present

Java Development Engineer

Shanghai, China

- Participated in designing and developing database product interfaces, ensuring optimal user experience and system performance, especially focusing on the creation of a universal installer to simplify the installer creation process for all products.
- Participated in developing a suite of client-side tools, such as a database management system, especially focusing on optimization techniques to efficiently render vast volumes of database query results to enhance user interactions with big data visualizations.

NSFOCUS Technologies Group Co., Ltd

2023.2 – 2023.4

Research & Development Intern

Wuhan, China

- Collaborated on the development of the company's security solutions, specializing in leveraging Python Scrapy to gather intelligence on fraudulent apps into a database and utilized Python Django framework for backend development of a network probing system.
- Conducted initial technological assessments of products, managed routine maintenance, resolved customer concerns, and provided technical support, including devising encryption algorithms to anonymize data for customers to use in machine learning training.

Research Experience

Department of Computer Science at Virginia Tech

2022.4 – 2022.9

Research Assistant

Remote

- Conducted in-depth research on the provenance graph, Graph Neural Network (GNN), and threat hunting.
- Prepared and curated data sets for the evaluation part.
- Proposed and developed a graph learning framework based on GNN in Python for system provenance-based security analysis with potential applications in various downstream tasks like system entity classification and event prediction.
- Conducted rigorous evaluations to validate the efficacy of the proposed framework.

Honors & Awards

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| • 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% of students) | September 2021 |
| • Scholarship of Mingde for Social Service | September 2021 |
| • Scholarship for Academic Excellence | September 2020 |
| • Scholarship for Self-improvement | September 2020 |

Extracurricular Experience

Department of Media of the Student Association Union

2019.10 – 2021.6

Video Editor

Wuhan, China

- Conducted both online and offline training sessions on video editing techniques on instruction in the use of Premiere Pro and After Effects, benefiting over 50 students through tailored training.
- Produced promotional videos for the Student Association Cultural Festival in 2019 and 2020.

Projects

Threshold Variance Based DDoS Attack Detection

2022.9 – 2023.6

- Project Overview: A project that proposes a DDoS detection system based on three modules, including an RNN-based network traffic prediction module, a threshold variance-based anomaly detection module, and an in-depth machine learning-based research module.
- Technologies Used: Python, LSTM, GRU, and Deep Learning
- Key Contributions:
 - Developed a recurrent neural network (RNN) model to forecast network traffic patterns. Introduced a threshold variance-based algorithm to effectively pinpoint anomalies rooted in network traffic projections.
 - Executed a comprehensive comparison between traditional machine learning and deep learning techniques for DDoS detection. Integrated deep learning methodologies into the existing system, enhancing its detection capabilities.
 - Undertook rigorous evaluation exercises, both at module-level and system-wide scales, using classic DDoS detection datasets to validate and underscore the efficiency and robustness of the newly proposed system.

A Single-Disease Medical Path Management System

2021.7 – 2021.9

- Project Overview: A project that records the entire journey of patients with a specific disease, from admission to completion of treatment.
- Technologies Used: Java, Springboot, Mybatis, and MySQL.
- Key Contributions:
 - Designed nine bespoke database tables in alignment with project requirements, including specialized tables for administration, patient data, and more.
 - Oversaw and refined critical operations logic for comprehensive database tasks such as CRUD (Create, Retrieve, Update, Delete) functions, ensuring efficient data handling for patient information.
 - Engineered and realized robust interfaces for seamless interaction between the back end and the front end. Utilized Spring Boot for crafting controllers that facilitate data exchange, both receiving from and transmitting to the front end.