YUFEI WU

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EDUCATION

University of Science and Technology of China (USTC) **Sept. 2021 – Jun. 2024**

Master of Engineering in Software Engineering

Courses: Formal Method (90), System Programming (95), Principles of Programming Languages (90), Information Security (85)

Nanjing Normal University (NNU) **Sept. 2017 – Jun. 2021**

Bachelor of Engineering in Computer Science

Courses: Compilation principle (95), Computer System Security (83), Artificial Intelligence (96)

RESEARCH INTERESTS

Programming Language, Software Security, Software Engineering

PUBLICATIONS

RUSPATCH: Towards Timely and Effectively Patching Rust Applications (QRS 2023) **Accepted**

Yufei Wu, and Baojian Hua

RESEARCH EXPERIENCE

RUSPATCH: Towards Timely and Effectively Patching Rust Applications **Jun. 2023 – Sept. 2023**

Research Assistant, CSS Lab, USTC

- Proposed a syntax-indexed delegatecall proxy pattern translation function and an unsafe patch candidate analysis algorithm.
- Designed and implemented a software prototype that solved the dynamic software updating problem in Rust.
- Conducted extensive experiments on real-world Rust CVEs and project vulnerabilities.

C to Rust automatic conversion principle and implementation technology **Jan. 2023 – May. 2023**

Research Assistant, CSS Lab, USTC

- Developed a software prototype to solve the problems of code explosion and insecurity based on tool c2rust.
- Remove duplicate types by traversing the syntax tree, and reduce at least 25% of unsafe functions caused by raw pointers by using rustc as an oracle.
- Collaborated with team members using version control systems such as Git to organize modifications and assign tasks.

An empirical study of Rust ecosystem documentation **Jul. 2022 – Dec. 2022**

Research Assistant, CSS Lab, USTC

- Developed a software prototype for analyzing Rust documents and detecting code-documentation inconsistencies.
- Crawled all libraries in the Rust community, analyzed the completeness, size, and consistency of documents, and used SQLite to store the results.
- Detected and reported to developers dozens of code-documentation inconsistencies, including the Rust standard library.

Research and implementation of using pre-training to improve code summary generation model **Jan. 2021 – May. 2021**

Undergraduate thesis

- Pre-trained a code summary generation model on automatically extracted datasets and fine-tuned on manually annotated datasets.

TEACHING EXPERIENCE

System Programming in C **Fall 2022**

Teaching Assistant

- Designed and graded lab assignments, review lessons and answered questions on the Piazza forum.

TECHNICAL SKILLS

Languages: Mandarin (Native), English (IELTS 6.5)

Programming / Tools: Rust, C, Python, Shell, SQL, LaTeX, Linux, Git, Docker

AWARDS AND SCHOLARSHIPS

Postgraduate Academic Scholarship 2022 & 2023

National Encouragement Scholarship 2017 & 2018