

# YUNBO NI

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## EDUCATION

**B.E. in Software Engineering**, Nanjing University  
GPA: 4.53/5.00, Rank: 17/257 (6.61%)

Sep, 2021 - Present

## PUBLICATIONS

### Interleaving Large Language Models for Compiler Testing

[OOPSLA'25 (to appear)]

Yunbo Ni, Shaohua Li

- Proposed an **LLM-based compiler testing framework** that separates program generation into offline and online phases, enabling efficient generation of high-quality test programs.
- Applied the framework to C compiler testing by constructing a database of **over 500,000** LLM-generated functions and performing large-scale fuzzing, which led to the discovery of **66 bugs** in GCC and LLVM, nearly half of which were miscompilation bugs.

### PanicFI: An Infrastructure for Fixing Panic Bugs in Real-World Rust Programs

[TOSEM Under Review]

Yunbo Ni, Zixi Liu, Yang Feng, Runtao Chen, Baowen Xu.

#### Contributions:

- Independently implemented the APR tool, consisting of **5K+ lines of Rust code** and constructed a benchmark of **102 real-world panic bugs**.
- Demonstrated practical impact by applying the APR tool to real-world Rust crates, effectively resolving **28 critical panics**, all of which have been **approved by the maintainer and merged into codebases**.

### An Empirical Study of Rust-Specific Bugs in the rustc Compiler

[OOPSLA'25 Under Review]

Zixi Liu, Yang Feng, Yunbo Ni, Shaohua Li, Xizhe Yin, Qingkai Shi, Baowen Xu, Zhendong Su.

#### Contributions:

- Collected **10K+ data** from the Rust development community using a tool developed by myself, which formed the basis of this empirical study.
- Conducted a manual review and analysis, in collaboration with others, on **2547 Rust bugs**.

## PROJECTS

### Apache Shardingsphere [Contributions] [Interview]

Jul, 2023

As a contributor to **Apache ShardingSphere** - an esteemed Apache top-level project with **over 19K stars**, I played a pivotal role in enhancing the SQLNodeConverterEngine to encompass a broader spectrum of MySQL, PostgreSQL, and OpenGauss SQL statements. Throughout this endeavor, I adeptly tackled **31 exceptional cases** spanning **3 SQL dialects**, resulting in the successful merging of **18 pull requests**.

### CompilerBagel [Code]

Aug, 2023

As a participant in the **BiSheng Cup 2023**, I was responsible for building a compiler for a subset of the C language from scratch, with a focus on the compiler backend, tailored for **the RISC-V instruction set**. Our team achieved a **high score of 98.8** in the National Competition and was awarded **the National Excellence Award**.

## HONORS

**National Scholarship**, Chinese Ministry of Education, 2022

Nanjing, China

**BiSheng Cup National Excellence Award**, CERACU, 2023

Guangzhou, China

**Outstanding Student**, Nanjing University, 2022

Nanjing, China