# Zhiyuan Pan

https://pan2013e.github.io

### **EDUCATION**

## College of Computer Science and Technology, Zhejiang University

Hangzhou, China

Ph.D Student in Computer Science and Technology

Sep. 2023 – Present

Email: zy\_pan@zju.edu.cn

- o Affiliation: The State Key Laboratory of Blockchain and Data Security
- Research Topic: AI for Software Engineering
- Supervisor: Xing Hu (Associate Professor at Zhejiang University); Xiaohu Yang (Professor at Zhejiang University; Associate Director of the State Key Laboratory of Blockchain and Data Security)
- o Advisor: Xin Xia (ACM Distinguished Member; Qiushi Distinguished Professor at Zhejiang University)

## Chu Kochen Honors College, Zhejiang University

Hangzhou, China

B.E. in Computer Science and Technology

Sep. 2019 – Jun. 2023

#### RESEARCH

## Reasoning Runtime Behavior of a Program with LLM: How Far Are We?

ICSE 2025

Junkai Chen\*, **Zhiyuan Pan**\* (\* Equal Contribution), Xing Hu, Zhenhao Li, Ge Li, Xin Xia

Ottawa, Canada

• This paper introduces REval, a benchmark that evaluates LLMs' code reasoning abilities using runtime execution information. The study reveals that existing models perform poorly in reasoning about runtime behavior and maintaining consistency, indicating a need for further improvement in their code reasoning capabilities.

### PPT4J: Patch Presence Test for Java Binaries

ICSE 2024

Zhiyuan Pan, Xing Hu, Xin Xia, Xian Zhan, David Lo, Xiaohu Yang

Lisbon, Portugal

 This paper proposes PPT4J for patch presence test in Java binaries. By extracting semantic information and leveraging feature matching techniques, it addresses the limitations of existing methods in capturing subtle code changes and semantic redundancies. Experimental results demonstrate its strong performance in real-world scenarios.

## Re-Evaluating Code LLM Benchmarks Under Semantic Mutation

Under Review

Zhiyuan Pan, Xing Hu, Xin Xia, Xiaohu Yang

• This paper conducts an empirical study on prompt sensitivity in code benchmarks, revealing that slight prompt variations can significantly affect model performance and rankings. It introduces a framework for generating semantically consistent prompt variants and evaluates their impact across multiple tasks and open-source LLMs.

# Enhancing Repository-Level Code Generation with Integrated Contextual

Under Review

• Information

Zhiyuan Pan, Xing Hu, Xin Xia, Xiaohu Yang

 This paper presents CatCoder, a framework that enhances repository-level code generation for statically typed languages by integrating code retrieval and type context information. It outperforms existing methods on Java and Rust datasets.

#### AWARDS

## National Scholarship

Nov. 2024

Ministry of Education, P.R.C

# Outstanding Graduate of Zhejiang University

Jun. 2023

Zhejiang University

#### SERVICES

### Student Volunteer

Internetware 2023

#### PROGRAMMING SKILLS

• Languages: C/C++, Java, Python, Rust