

Wen Fan

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EDUCATION

Purdue University

West Lafayette, USA

Major: Computer Science

Aug. 2022 – Present

Degree: Master

University of Science and Technology of China (USTC)

Hefei, China

Major: Computer Science and Technology

Sept. 2018 – Jun. 2022

Degree: Bachelor

GPA: 3.75/4.3

RESEARCH INTEREST

Program Verification

RESEARCH EXPERIENCE & PROJECTS

Consensus Protocol Synthesis

Purdue University

Advisor: Prof. Yongle Zhang

May. 2023 – Mar. 2024

Vicious Cycles in Distributed Systems

Purdue University

Advisor: Prof. Yongle Zhang

June. 2022 – Apr. 2023

We investigated a type of failure in distributed systems, where an event causes a system degradation and it further causes more events. I joined half-way in this project.

- Collected some cases of those failures on Apache Jira.
- Tried implementing a static analyzer on retry pattern in distributed systems such as Hadoop.

Cflow: Static Taint Analysis on Java Application

Remote summer intern at UIUC

Advisor: Prof. Tianyin Xu

Jul. – Oct. 2021

Cflow is a static taint analysis tool with two limitations: non-deterministic output and many false-positives, and I tried to solve these problems as my first attempt in research.

- Analyzed the source code and output of Cflow to find out the reasons for these two problems.
- Added flow information for each statement to solve the non-deterministic path reconstruction.
- Implemented points-to analysis and field-use analysis to reduce false positives.

DSLAB (Sharded and Fault Tolerant Distributed Key-Value Store)

CS505 project at Purdue University

Developed from University of Washington, DSLAB is a framework for building and debugging distributed systems for educational purposes. I did this lab with my friend and passed most of the tests.

- Implemented Primary-Backup, Paxos and Two Phase Commit protocols.

- Debugged to pass more than 90% of tests (including searching tests on corner cases).

Compiler Lab

Extra work at USTC

I wrote the compiler lab from other classes in USTC, in order to have a better understanding of basic compilers. The project generates the Intermediate Representation for a simplified C programming language.

String Analysis in Java

Bachelor thesis at USTC

I adopted the program analysis tool cpcachecker to do some simple analysis on Java String. For example, tracking the value and relation of strings after doing concatenation operations.

TEACHING ASSISTANT EXPERIENCE

Mathematical Logic, USTC

Spring 2021

CS252 Systems Programming, Purdue University

Fall 2022, Spring 2023, Spring 2024

CS251 Data Structures, Purdue University

Fall 2023

AWARDS

Huawei Scholarship

Nov. 2020

Huaxia Talent Program at USTC

June 2022

SKILLS

Programming Languages: C, C++, Java, Python, Go, Verilog, SQL, Latex

Frameworks: Django, Soot

Algorithms: [Leetcode](#) 100+, CS584 (Computation complexity)

Languages: English, Chinese