Wen Fan

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EDUCATION

Purdue University — West Lafayette, USA
Major: Computer Science — *Aug. 2022 – Present*
Degree: Ph.D. (expected)
Advisor: Prof. Yongle Zhang

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

Distributed Protocol, Formal Method

RESEARCH EXPERIENCE & PROJECTS

Consensus Protocol Synthesis — Ph.D. student at Purdue University
Advisor: Prof. Yongle Zhang — *May. 2023 – Present*

Vicious Cycles in Distributed Systems — Ph.D. student at 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
Dec. 2023
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).

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*

TECHNICAL KNOWLEDGE

Programming Languages: C, C++, Java, Python, Go, Verilog, MATLAB
Algorithm: Leetcode 100+
Languages: English, Chinese