

Wen Fan

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EDUCATION

Purdue University

West Lafayette, USA

Major: Electrical and Computer Engineering

Aug. 2022 – Present

Degree: PhD

Advisor: Prof. [Jenna DiVincenzo](#)

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, Software Engineering, Artificial Intelligence

PUBLICATIONS

Evaluating the Ability of Large Language Models to Generate Verifiable Specifications in VeriFast
[\[paper\]](#)[\[code\]](#)

Marilyn Rego*, Wen Fan*, Xin Hu, Sanya Dod, Zhaorui Ni, Danning Xie, Jenna DiVincenzo, Lin Tan. The 2nd ACM international conference on AI Foundation Models and Software Engineering (FORGE 2025).

RESEARCH PROJECTS

Evaluating LLMs on Generating Specifications for Separation Logic

Purdue University

Advisor: Prof. Jenna DiVincenzo

Sept. 2024 – Now

Program verification checks whether a program satisfies a specification. Given a program and partial specification, we evaluate how well LLMs can generate full specifications based on separation logic, including the number of verification errors and the preservation of functional behavior of the specifications and source code.

Optimizing Gradual Program Verifier with Parallelism

Purdue University

Advisor: Prof. Jenna DiVincenzo

Jun. 2024 – Aug. 2024

The Gradual C0 verifier uses symbolic execution to gradually verify programs written in a subset of C. However, its execution on branches is sequential, which limits its performance on large programs. In this work, I parallelized Gradual C0's symbolic execution and reduced static verification time by 41%. [\[poster\]](#)

- Discovered that the performance of Gradual C0 is bottlenecked in sequentially executing branches
- Designed and implemented parallel execution of branches
- Discovered that static verification is accelerated by enabling parallelism

Optimizing Cflow (a Static Taint Analysis on Java Application)

Remote intern at UIUC

Advisor: Prof. Tianyin Xu

Jul. – Oct. 2021

Cflow has two limitations: non-deterministic output and many false-positives, and I tried to solve them.

- Added flow information for each statement to solve the non-deterministic path reconstruction
- Implemented points-to analysis and field-use analysis to handle false positives

COURSE PROJECTS

DSLAB (Sharded and Fault Tolerant Distributed Key-Value Store) CS505 project at Purdue University

DSLAB is a lab project for building and debugging distributed systems.

- Implemented Primary-Backup, Paxos and Two Phase Commit protocols.
- Debugged to pass more than 90% of tests (including searching tests on corner cases).

Tiny MIPS Pipelined CPU

Computer Organization and Design Project at USTC

This lab builds a 5-staged pipelining CPU of simplified MIPS instruction set on FPGA, which runs a Fibonacci Number calculator as a simple application.

- Implemented the circuit in VeriLog
- Tested both on waveform and FPGA

TALKS

Wen Fan, “Evaluating the Ability of Large Language Models to Generate Verifiable Specifications in VeriFast.”
The 2nd ACM International Conference on AI Foundation Models and Software Engineering (FORGE 2025, co-located with ICSE 2025), April 2025.

Wen Fan, “Optimizing Gradual C0 Program Verifier by Adding Parallelism.”
Poster presentation at the Purdue ECE Symposium, October 2024.

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 *Jun. 2022*

SKILLS

Programming Languages: C, C++, Java, Python, Go

Tools: VeriFast, Git, Linux, Docker, JetBrains IDE, LaTeX, Google Docs/Slides/Sheets

Algorithms: Leetcode 100+

Languages: English, Chinese