

# Feiyang Jin

Atlanta, GA • 314-745-9356 • fjin35@gatech.edu

## Education

---

### Georgia Institute of Technology

Ph.D. candidate in Computer Science. GPA: 4.00/4.00

Atlanta, GA

Expected August 2025

### Washington University in St. Louis

B.S. in Computer Science. GPA: 3.79/4.00  
Second Major in Mathematics. Dean's List. Cum Laude

St. Louis, MO

Dec 2019

**Graduate Courses Completed:** Compiler Design, High Perform Computing, Theory of Parallel Systems, Programming Languages, Database Management Systems, Intro to Graduate Algorithms, Software Analysis and Test, Software Dev Process, Statistical Methods (In Progress)

**Research Field:** Dynamic Parallel/HPC Programs Analysis, Programming Language

## Research and Work Experience

---

### Georgia Institute of Technology

Ph.D. Researcher, directed by Prof. Vivek Sarkar

Atlanta, GA

Aug. 2020 - present

- Design a new dynamic race detection algorithm for parallel programs with promises. Implement the [race detector](#) with a slowdown under 50x, comparable to other more restricted race detectors
  - Construct a theoretical proof that data-race freedom leads to determinism
- Design, implement and evaluate [a computation graph visualizer](#) for OpenMP programs.
  - Conduct a research survey involving control/experimental groups. Improve users' understanding of data races by at least 15 percent.
- Design, implement and evaluate [a dynamic race detector](#) in OpenMP; performance comparable to ThreadSanitizer
- Help implement and evaluate [an OpenMP offloading issue detector](#)
- Formalize [Kokkos](#) parallel library in a core language (Collaboration with Sandia National Lab)

### Google

Ph.D. Software Engineer Intern, Google Cloud, Flex (Resource & Infrastructure Optimization Technology)

Kirkland, WA

Summer 2024

- Implement a framework to characterize job network traffic through different profiling techniques. This flow has enabled the comparison between different profiles to decide the best for different applications
- Develop a methodology to pinpoint profiles that best predict future job behavior
- Enhance resource utilization for resource management tools through the implemented methodology

### Uber

Ph.D. Software Engineer Intern, Infrastructure Team, Programming System Group

Sunnyvale, CA

Summer 2023

- Design, implement and evaluate a closed-loop application that uses LLM (Large Language Model) to repair Golang programs with concurrency bugs
- Learn and use internal infrastructure and AST (Abstract syntax tree) for Golang program compilation, analysis, deployment and bug report
- Fix data races found and reported to the internal issue database

### Strayos

Full Stack Developer Intern

St. Louis, MO

Summer 2019

- Design and develop backend & frontend systems using full-stack technologies AngularJS and Ruby
- Create and manage daily activity database for users in the backend

### Washington University in St. Louis

Undergraduate Researcher, directed by Prof. Xuan Zhang

St. Louis, MO

May 2018 – Apr 2020

- Build [PiCar platform](#); Develop communication protocols (SPI, I2C, Serial) between Raspberry Pi and Arduino (Python and C); Program sensors (Lidar, camera and Inertial measurement unit) by low-level protocols (Python and C); Create software platform to control PiCar (support data collection, transferring and visualization)
- Research on [Micro Aerial Vehicles simulation and benchmarking](#); build a closed-loop simulator and explore how scheduling algorithms on ROS (Robot Operating System) can affect drone's mission performance

## Publications

---

Visualizing Correctness Issues in OpenMP Programs. [Feiyang Jin](#), Alan Tao, Lechen Yu, Vivek Sarkar. *International Workshop on OpenMP*, Sep 2024.

Early notice: GenAI-based Datarace Fix for Real-World Golang Programs. [Feiyang Jin](#), Zhizhou Zhang, Rajkishore Barik, Gautam Kortam, Milind Chabbi. *Workshop on ML for Systems at NeurIPS 2023*, Dec 2023.

Dynamic Determinacy Race Detection for Task-Parallel Programs with Promises. Feiyang Jin, Lechen Yu, Tiago Cogumbreiro, Vivek Sarkar, Jun Shirako. *European Conference on Object-Oriented Programming (ECOOP)*, July 2023.

Leveraging the Dynamic Program Structure Tree to Detect Data Races in OpenMP Programs. Lechen Yu, Feiyang Jin, Joachim Protze, Vivek Sarkar. *International Workshop on Software Correctness for HPC Applications (Correctness)*, November 2022.

MiniKokkos: A Calculus of Portable Parallelism. Feiyang Jin, John Jacobson III, Samuel D. Pollard, Vivek Sarkar. *International Workshop on Software Correctness for HPC Applications (Correctness)*, November 2022.

## ACADEMIC ACTIVITIES

---

### VIVEKFEST 2024, SPLASH Workshop

Paper reviewer

### Georgia Institute of Technology

Teaching Assistant

- Class assisted: Intro to Graduate Algorithms, Software Dev Process
- Hold weekly TA hours, contribute to weekly practice questions, grade homework and provide comments

### Washington University in St. Louis

Teaching Fellow and Computer Science Tutor

- Class assisted: Introduction to Systems, Analysis of Network Data, Analysis of Algorithm
- Teach weekly recitation classes for 30 undergraduate students. Hold 1-to-1 tutor hours

## TECHNICAL SKILLS

---

**Advanced:** C++   **Intermediate:** OpenMP, Python, SQL   **Basic:** C, MATLAB, LLVM, Java, R, Kokkos, Golang