Vishal Canumalla

Contact Information

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www.linkedin.com/in/vishal-canumalla/

Research Interests

Programming Languages, Compilers, Hardware Software Co-design, Program Synthesis

Education

Univeristy of Washington, Seattle Sep. 2020 – June 2024

B.S., Computer Science (GPA: 3.8/4.0)

Coursework: Graduate Programming Languages, Hardware Software Interface, Algorithms, Systems Programming, Databases

Research Experience

Undergraduate Researcher Mar. 2021 – Present
PLSE Lab, University of Washington
Advisor: Prof. Zachary Tatlock

Research Intern Mar. 2022 - Jun. 2022
Certora Inc.
Advisor: Dr. Chandrakana Nandi

Publications

1. (Pre-print) Huang, B.-Y.*, Lyubomirsky, S.*, Li, Y., He, M., Tambe, T., Smith, G. H., Gaonkar, A., **Canumalla, V.**, Wei, G.-Y., Gupta, A., Tatlock, Z., & Malik, S. (2022). *Specialized Accelerators and Compiler Flows: Replacing Accelerator APIs with a Formal Software/Hardware Interface.* arXiv link.

Presentations and Posters

3LA: Addressing the Mapping Gap Nov. 2022
Allen School Annual Research Showcase

Research Projects

3LA: Compiler Flows for Specialized Hardware Sep. 2021 – Present

- Research in developing a formal hardware/software interface for end-to-end testing in hardware development.

Lakeroad: Automated FPGA Synthesis January 2023 – Present

- Research in synthesis of FPGA implementations via Solver-aided programming

Gambit: Mutant Generation for Formal Specifications Mar. 2022 – June 2022

- Research in mutation testing for formal verification specifications of Ethereum smart contracts.

Glenside: Pure Tensor Program Rewriting

- Research in optimization of low-level tensor programs via equality saturation

Work Experience

Software Engineer Intern, Toyota Connected June. 2020 – August. 2020

Skills

- **Programming Languages**: Java, C, C++, Rust, Racket, Coq
- **Tools**: GDB, Make, Git, Vim, Docker, Linux LaTeX