

SHANGYIN TAN

(+1) 765 - 427 - 2861 \diamond tan279@purdue.edu \diamond <https://github.com/Shangyint>

EDUCATION

Purdue University

2018 - 2022

Bachelor of Science in Computer Science Honors

Overall GPA: 3.97/4.0, Major GPA: 4.0

Corporate Partner Scholarship, PurPL Undergraduate Researcher

Graduate Courses: Algorithm, Programming Languages, Program Reasoning, Numerical Analysis

RECENT PROJECTS

Compiling Symbolic Execution

May 2020 - Present

Undergraduate Researcher (advised by Guannan Wei and Tiark Rompf)

West Lafayette, US

- <https://github.com/Kraks/sai>
- Build backend to generate SMT solver calls via metaprogramming.
- Develop *LLVM* symbolic compilation with free monads from scratch.
- Our paper *Compiling Symbolic Execution with Staging and Algebraic Effects* is accepted at **OOPSLA 2020 !**

W²: Synthesising Webpage from Wireframe

March 2020 - Present

Undergraduate Researcher (advised by Roopsha Samanta)

West Lafayette, US

- <https://github.com/TigerHix/W2>
- Design an algorithm to infer hierarchical layout from static structure.
- Transform static graph to responsive webpage (HTML).

MiniScala: a Small Scala Compiler

Jan 2020 - May 2020

Developer

West Lafayette, US

- Parse and compile **Scala** source code to X86-64 assembly
- Infer and check types of the input program
- Optimize via Dead Code Elimination, Constant Folding, CPS Transformation, etc.

EXPERIENCE

Undergraduate Teaching Assistant

Jan 2019 - Present

Discrete Math, System Programming, Algorithms Analysis, ...

West Lafayette, US

- Conduct recitations to help students with problem solving
- Advise students in lab debugging

Selected Coding Contests

2018 - 2020

Higher Ranked Participant

Midwest, US

- 3rd in Tech Challenge Google 2019, Chicago
- 2nd in Sandia Coding Challenge 2018, West Lafayette

SKILLS

Familiar with

C, Scala, Python, C++

Have worked with

Haskell, Coq, X86-64, Java, Javascript, Scheme, L^AT_EX, LLVM, MatLab

Tools

GDB, Linux, Bash, Git, SAT/SMT solvers (Minisat, STP, Z3)

(Skills in the same row are in random order)