SHANGYIN TAN

(+1) 765 - 427 - 2861 ◇ **tan279@purdue.edu** ◇ `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** !

W^2: 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*

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

SKILLS

Familiar with	C, Scala, Python, C++
Have worked with	Haskell, Coq, X86-64, Java, Javascript, Scheme, LaTeX, LLVM, MatLab
Tools	GDB, Linux, Bash, Git, SAT/SMT solvers (Minisat, STP, Z3)

(Skills in the same row are in random order)