

# Tianyi (Sam) Zhou

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## Education

### Cornell University

#### M.Eng in Computer Science

Dec 2021 | Ithaca, NY  
College of Engineering  
Dean's List

## Links

Personal Website: [developersam.com](https://developersam.com)  
Blog: [blog.developersam.com](https://blog.developersam.com)  
GitHub: [SamChou19815](https://github.com/SamChou19815)

## CS Courses

OO Design Data Structs Honors  
Discrete Structures  
Data Structs & Functional Programming  
Intro to Analysis of Algorithms  
Systems Programming  
Programming Languages & Logics  
Machine Learning Intelligent Systems  
Intro to Compilers  
Operating Systems  
Intro to Database Systems  
Distributed Systems  
Formal Verification

## Skills

### Programming

Over 50000 lines:  
TypeScript • Kotlin • Java

Over 10000 lines:  
JavaScript • OCaml • Hacklang •  $\LaTeX$

Over 5000 lines:  
Rust • Python • PHP • CSS

Familiar:  
Swift • Go • Coq • Bash • MySQL

### DevOps

GitHub Actions, Circle CI, Travis CI,  
Kubernetes

## Open Source Contributions

[facebook/docusaurus](#)  
[facebook/flow](#)  
[facebook/react](#)  
[facebook/jest](#)  
[facebook/pyre-check](#)  
[yarnpkg/berry](#)

## Experience

### Facebook | Software Engineer Intern

June 2021 – Aug 2021 | Menlo Park, CA (Remote)

- Designed and implemented extract to functions/methods/constants/class fields/type aliases refactor code action for Flow's language server.
- Released the feature to 100% of Facebook engineers and open source users.
- Implemented type checking support for JavaScript private class methods.

### Facebook | Software Engineer Intern

June 2020 – Aug 2020 | Ithaca, NY (Remote)

- Migrated legacy Java code for Facebook Lite into a new internal framework in Hacklang.
- Implemented news feed related internal tools to help engineers debug production issues.
- Ported election integrity modules to Facebook Lite, increasing the global coverage by 20%.

### Facebook | Software Engineer Intern

May 2019 – Aug 2019 | Menlo Park, CA

- Designed and implemented an alternative build system that speeds up Python dependency building by 10x
- Implemented Python auto-completion for Pyre language service
- Fixed several parsing and type checking bugs in Pyre

## Projects

### samlang | TypeScript, ANTLR4

December 2018 - Present

- An optimizing compiler for my own functional programming language samlang.
- The statically type-checked language supports generics, first-class functions, and type inference, with a Kotlin-like syntax and OCaml-like semantics.
- The CLI includes a language server that powers various VSCode extension features, including type query, auto-completion and auto-formatting.

### CoursePlan | TypeScript, Vue

March 2020 - Present

- A web app built for Cornell students to automatically compute their satisfied requirements given their courses.
- Designed and implemented the core algorithm that can handle user strategy choices and detect double-counted courses.

### mini-react | TypeScript

April 2020

- A simplified React runtime with support for `useState` and `useEffect` hooks.

### TEN | Golang

July 2017 - June 2018

- A board game that extends the tic-tac-toe to  $9 \times 9$  board, with an AI-powered by Monte-Carlo Tree Search algorithm.
- The AI can achieve super-human performance with 1.5 seconds of thinking time for each move.