

Vivian Ding

📞 (203) 919 4846

✉ vyd2@cornell.edu

Github: vivianyyd

Education

2020 – **Cornell University**, *Bachelor of Arts*, Computer Science and Mathematics **Expected 2024.**

Present GPA 3.797/4.3 – Dean's List.

Relevant coursework: Program Synthesis, Advanced Programming Languages, Advanced Compilers, Cryptography, Kleene Algebra, Advanced Analysis of Algorithms, Machine Learning, Numerical Analysis

Workshop Publications

2023 **An Array Intermediate Language for Mixed Cryptography**, Presented at the *Workshop on Foundations of Computer Security*.

Experience

Jun 2022 – **Undergraduate Researcher**, *Cornell University*.

- Present
- Under mentorship of Professor Andrew C. Myers.
 - Working on Viaduct, a compiler that automatically employs cryptography to enforce security specifications for distributed programs. Designing and integrating a new IR to support efficient code generation.

May – Aug **Software Engineering Intern**, *Jane Street*.

- 2023
- Added a new feature to the OCaml programming language: “implicit source position parameters”, useful for debugging and expressive error messages.
 - Use of this feature may eliminate several hundreds of lines of boilerplate in production code.
 - Plans are in place to roll this feature upstream to the official OCaml compiler.
 - Extended internal logic for ETF settlements to support new flows. This improvement has been deployed.

Teaching Experience

Aug 2021 – **Teaching Assistant**, *Cornell University*.

- Present
- Leading lab and discussion sections of up to 50 students, supporting students in weekly office hours, grading over 300 projects and exams.
 - *Courses taught:* Compilers, Programming Languages, Honors OOP, Functional Programming

Sep 2017 – **Math and Computer Science Tutor**.

- Present
- Independently educating over 25 students grades 3-12 in math, science, and computer programming.

June – Aug **Instructor**, *Connecticut College Corps*.

- 2021
- Oversaw an enrichment program supporting over 120 students through Connecticut's AccelerateCT initiative, mitigating school disengagement in the wake of the COVID-19 pandemic.

Projects

2022 **Xi Compiler.**

- Implemented an optimizing compiler targeting x86 for an imperative, procedural language called Xi.
- Won “**Best Compiler**” award for correctness and performance, with 18.4x speedup of generated code.
- Written in Kotlin alongside three team members.

Technical Skills

Java, Kotlin, OCaml, Python (NumPy, pandas), Julia, Linux, Bash, Git, LaTeX