

Vivian Ding

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Education

- 2020 – **Cornell University**, *Bachelor of Arts, Computer Science and Mathematics* **Expected 2024.**
Present GPA 3.846/4.3 – Dean's List.
Relevant coursework: Analysis of Algorithms (Graduate), Compilers, Advanced Programming Languages, Cryptography, Numerical Analysis, Honors Linear Algebra

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.
 - Optimizations include register allocation, copy and constant propagation, dead code elimination, and more. Written in Kotlin alongside three team members.
- 2020 **CritterWorld.**
- Utilized JavaFX and JUnit testing to build a simulation of critters that traverse a world, reproduce, and evolve, alongside two team members.

Experience

- Summer **Incoming Software Engineering Intern**, *Jane Street.*
2023 Jane Street is a proprietary trading firm.
- Jun 2022 – **Undergraduate Researcher**, *Cornell University.*
Present
 - Working on Viaduct, a compiler that automatically employs cryptography to enforce security specifications for distributed programs, under mentorship of Professor Andrew C. Myers.
 - Designing and integrating a new IR to support vector operations and homomorphic encryption.
- Jun – Aug **Accelerate Program Participant**, *IBM.*
2022
 - Trained in client engineering and technical sales. Delivered a sales pitch and technical demonstration of a chat bot to a mock client.

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.
 - CS 4120: Introduction to Compilers (Spring 2023)
 - CS 2112: Honors Object-Oriented Design & Data Structures (Fall 2021, 2022)
 - CS 3110: Functional Programming (Spring 2022)

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

- Present
- Independently educating over 25 students grades 3-12 in math, science, and computer programming.
 - Guiding students in building problem solving strategies; inspiring further pursuit of CS and mathematics.

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.

June – Aug **Instructor**, *codeConnects*.

- 2021
- Taught introductory programming concepts and algorithmic thinking to individual students.

Aug 2019 – **Teaching Assistant**, *New Canaan High School*.

- Jun 2020
- Delivered instruction for the AP Computer Science A course.

Technical Skills

Proficient Java, Kotlin, Python (NumPy, pandas), Julia, OCaml, Linux, Bash, Git, LaTeX
Basic C, C++, HTML/CSS