

# Esther Wang

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## EDUCATION

### Cornell University, Ithaca, NY

Bachelor's of Science in Computer Science, Minor in Mathematics  
GPA: 4.15

Sep 2020 – May 2024

#### Relevant Coursework (<sup>†</sup> = teaching assistant)

CS 4120: Compilers	CS 6110: Programming Languages	CS 4830: Cryptography
CS 6820: Algorithms (Graduate)	CS 4820: Algorithms <sup>†</sup>	CS 4410: Operating Systems
CS 4810: Theory of Computing	CS 3410: Computer Systems	CS 3110: Functional Programming
CS 2800: Discrete Mathematics <sup>†</sup>	CS 2112: OOP & Data Structures <sup>†</sup>	MATH 4310: Linear Algebra
MATH 4130: Real Analysis I	MATH 4710: Probability	MATH 3320: Number Theory

## EXPERIENCE

### •Susquehanna International Group

Jun 2023 - Aug 2023

Software Engineering Intern

Bala Cynwyd, PA

- Subject to a nondisclosure agreement
- Developed applications in a fullstack role utilizing Mongo DB, C#, ASP.NET Core, and WPF

### •Censys

Jun 2022 - Aug 2022

Software Engineering Intern

Ann Arbor, MI

- Developed and debugged responsive frontend web pages (React - Typescript, Redux)
- Planned and created an internal gRPC service and integrated with public facing REST services in order to allow users to label items on their dashboard and filter information efficiently (Golang, PostgreSQL, Node.js)
- Updated public API to include Markdown and HTML as text formatting targets in order to improve user experience in common use cases

### •Cornell Cup Robotics

Sep. 2020 - Jun. 2022

Software Developer

Ithaca, NY

- Programmed web GUI using React.js, Flask, and SQLAlchemy for Minibot, a modular, cost-effective, learning platform robot
- Developed the Physical Blockly feature, an on-bot Raspberry Pi camera module (OpenCV) with Apriltag recognition capability, combined with an interpreter which processes observed tags and converts them to block based and Python programs to display on the frontend

### •AI-Learners

Mar. 2021 - Aug. 2021

Software Developer

Ithaca, NY

- Created responsive webpages based off Figma designs (React.js) as well as dynamic data visualizations (d3.js).
- Revamped UI and UX of all current webpages, developed a new customizable avatar feature webpage, and developed a guided experience website tour for new users
- Connected frontend systems to backend database (Node.js, Firebase)

## PROJECTS

### •Compiler

Kotlin

Optimizing compiler for the language Eta targeting x86 assembly, implemented from scratch, 13000 lines of code May. 2023

- Implemented nontrivial instruction selection, graph-coloring based register allocation, and a modified version of System V calling conventions.
- Implemented conversion into static single assignment form, and optimized with copy and conditional constant propagation, constant folding, dead code removal, and loop invariant code motion

### •Critic World

Java

An application which simulates the evolution of artificial life.

Dec. 2020

- Designed an abstract syntax tree structure, parser, and interpreter for 'critter lang', a programming language which is used to define the behavior of critters
- Developed a simulation and accompanying JavaFX GUI in which critters eat, attack, mate, and die over time. Performed fault injections on ASTs to simulate evolution

## SKILLS

**Languages:** Java, Kotlin, C#, JavaScript, TypeScript, OCaml, Golang, C

**Technologies:** React, Node.js, gRPC, Git, ASP.NET, WPF