

## SUMMARY

Cornell student with 5 years of experience creating innovative programming projects, interested in further developing skills through a challenging internship

## EDUCATION

### CORNELL UNIVERSITY

Computer Science, BS

Expected May 2023 | Ithaca, NY

College of Engineering

Dean's List

GPA: 3.706 / 4.0

## COURSEWORK

### Fall 2020

Machine Learning

Computer Organization

Probability and Statistics

### Spring 2020

Object-Oriented Programming

Linear Algebra

Differential Equations

### Fall 2019

Discrete Structures

Multivariable Calculus

Operations Research

### High School

Data Structures

Mobile App Development

Video Game Design

## SKILLS

### Languages:

Java • Python • C# • Ruby • Swift

HTML5 • CSS • JavaScript

### Tools:

Visual Studio • Ruby on Rails

Unity Game Engine • Xcode

Windows Command Line

## CAREER INTERESTS

Software Engineering

Artificial Intelligence

Algorithm Design

Modelling/Simulation

## EXPERIENCE

### ECHOAR | SOFTWARE ENGINEER INTERN

September 2020 – November 2020

- Assist in the development of a cross-platform real-time cloud engine
- Create tools and infrastructure to help developers build AR/VR applications
- Wrote backend functionality to download and zip associated files with Java

### CAPE CRYSTAL | RESEARCH ASSISTANT

September 2020 – Present | Ithaca, NY

- Implemented Common Neighbor Analysis to classify 3D crystal structures
- Used BFS to partition bonded particles of the same class with Python
- Will apply machine learning techniques to classify more complex structures

### CORNELL AUTONOMOUS BICYCLE | PROJECT TEAM MEMBER

February 2020 – Present | Ithaca, NY

- Implemented the pure pursuit path-following algorithm in Python, allowing the team's robotic bike to drive without human intervention
- Wrote code to convert routes from Google Maps API into a list of coordinates

### THREE BEARS | SOFTWARE ENGINEER, ENTREPRENEUR

May 2020 - August 2020

- Developed a website in Ruby on Rails that allows users to record events
- Designed an interactive timeline interface in HTML/CSS/JavaScript
- Presented a business plan in a pitch competition as part of ORIGIN Bootcamp, a summer program for startups

## PROJECTS

### POLYGON ART GENERATOR [link]

- Developed a program in Python that automatically synthesizes visually-pleasing polygon art from photos
- Program reduces unappealing jagged edges by decreasing color variance per triangle to under 50%, compared to the naive solution

### NEURAL NETWORK / ADVERSARIAL ATTACKER [link]

- Implemented a neural network in Python that recognizes handwritten digits using the MNIST dataset with up to 95% accuracy
- Designed a white-box algorithm that adds noise to an MNIST image to fool the neural network into identifying it as the wrong digit
- Adversarial images differ from original by only 2%

### "CAMEL UP" AI PLAYER [link]

- Hand-coded an AI in Java to play a strategy board game
- Solution uses Monte Carlo analysis to choose ideal moves given board layout and past behavior of other players

## LEADERSHIP/AWARDS

- Academic Officer in the Association of CS Undergraduates at Cornell
- Cornell Orientation Leader, Fall 2020 - mentored incoming students
- 1<sup>st</sup> place in the world - Destination Imagination Scientific challenge
- Eagle Scout, one of ~300 Scouts in history to earn every merit badge
- Rookie All-Star and Highest Seed Award - FIRST Robotics Competition
- 4<sup>th</sup> place of 22 - Games Factory Jam 5