Caleb Biddulph

972-369-9049 | cdb229@cornell.edu
CDBiddulph | caleb-biddulph

EDUCATION

Cornell University
Computer Science, BS
Expected May 2022
GPA: 3.8 / 4.0
Dean's List

COURSEWORK

Fall 2021
Natural Language Processing
Analysis of Algorithms
Systems Programming
Spring 2021
Reinforcement Learning
Functional Programming
Computer Vision
UNIX Tools and Scripting
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

SKILLS

Languages:
Python • Java • C • OCaml • Swift
JavaScript • HTML • CSS • Ruby

Tools:
Vim • Git/Gerrit • IntelliJ • UNIX
Unity 3D • Elasticsearch • Xcode

RESEARCH INTERESTS

Software Development
Machine Learning
Data Science
Full-Stack Development
Algorithms

EXPERIENCE

THORSTEN JOACHIMS LAB | AI Research Assistant
August 2021 – Present | Ithaca, NY
- Will assist in ideating, proving theorems, and writing papers related to RL
- Implemented Linear Bandit baseline in Python for a paper on KWIK framework

CORNELL EFFECTIVE ALTRUISM | President, Founder
July 2021 – Present | Ithaca, NY
- Gathered a team of 4 to persuade students to choose high-impact careers
- Coordinated registration, stickers, website, apparel, and $1,000s of funding, acting as point of contact for all aspects of the organization [website]
- Recruited 250 students to our email list in a single day, then led an info session
- Facilitating a weekly discussion fellowship with 3 sections of 6-7 students each

CAPE CRYSTAL | Research Assistant
September 2020 – June 2021 | Ithaca, NY
- Classified crystal structures in Python based on Stukowski paper [arXiv]
- Implemented BFS to partition nearby particles of the same classification
- Classified more varied and complex structures using K-Means
- Processed data on lab's Linux cluster and analyzed it with Matplotlib

THOUGHTSPOT | Software Engineer Intern (Search Team)
June 2021 – August 2021 | Sunnyvale, CA
- Built a graph in Elasticsearch linking past queries in our internal search engine to clicked results and accessed this data to enhance search rankings
- Clustered together sensibly-related queries and clicks in this graph with Python
- Affixed new types of messages and phased out old types with Elasticsearch/Java

CORNELL AUTONOMOUS BICYCLE | Project Team Member
February 2020 – Present | Ithaca, NY
- Implemented Pure Pursuit to make our robotic bike autonomously follow a path
- Integrated VFH [paper] with Pure Pursuit to avoid obstacles using Python
- Converted routes from Google Maps API into a format readable by the bike

PROJECTS

"PHOTOSYNTHESIS" SIMULATOR [GitHub]
- Created a user interface for a board game with a team of 3 in OCaml
- Fully designed a colored ASCII renderer with layers and complex functionality
- Identified a use case of the Ford-Fulkerson algorithm to validate player moves

POLYGON ART GENERATOR [GitHub]
- Developed Python program that synthesizes polygon art from photos
- Reduced jagged edges with an algorithm that decreases color variance per triangle by more than 50% compared to the naive solution

LEADERSHIP/AWARDS

- President of the Cornell Effective Altruism club, Fall 2021 - Present
- Academic Officer in the Association of CS Undergraduates at Cornell
- Course staff for Functional Programming at Cornell, Fall 2021
- Cornell Orientation Leader, Fall 2020/2021 - mentored incoming students
- Eagle Scout, one of ~300 Scouts in history to earn every merit badge
- 1st place in the world - Destination Imagination Scientific challenge