Benjamin Carlson

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EDUCATION

UC BERKELEY

Electrical Engineering and Computer Science, B.S.
Expected May 2020 | Berkeley, CA
Academic GPA: 3.71

COURSEWORK

CURRENT

Operating Systems
Internet Architecture & Protocols
Database Systems

COMPLETED

Computer Security
Artificial Intelligence
Principles & Techniques of Data Science
Computer Architecture
Efficient Algorithms & Intractable Problems
Data Structures
Discrete Mathematics & Probability
Information Devices & Systems I, II

SKILLS

PROGRAMMING

Java • Python • LaTeX • Android • C • SQL • HTML

TECHNOLOGY

Git • Eclipse • IntelliJ • IPython Notebook • Android Studio • Google Firebase

AWARDS

2^{nd} Place - CSPA Tech Competition @ UC Berkeley

INTERESTS

Programming (HackerRank, LeetCode, Google Code Jam) • Teaching • Dance • Video Games • Basketball

LINKS

GitHub: www.github.com/bencarlson01
LinkedIn: www.linkedin.com/in/bencarlson01

INDUSTRY EXPERIENCE

THE BOEING COMPANY | Software Engineering Intern

June 2015 – August 2015 | Huntington Beach, CA

- Developed a Java model of moving input shapes that checks for collisions to simulate spacecraft sensor inputs and collision awareness in spacecrafts.
- Created a Python script to convert HTML webpages to MHTML, a website archive format.
- Worked with a team to organize an internship fair that accommodated 60 interns and over 300 visitors.

EXTRACURRICULAR EXPERIENCE

UC BERKELEY | CS61B Academic Intern

August 2017 – Present | Berkeley, CA

- Work with approximately 40 students during lab and office hours to help debug code and explain challenging concepts.
- Teach students fundamental data structures and algorithms outside of class.

UC BERKELEY | EE16B Tutor

August 2017 – Present | Berkeley, CA

- Help about 30 students during lab with building and debugging circuits.
- Explain concepts behind and applications of these circuits to students.

RELEVANT PROJECTS

OBJECT COLLISION TESTER - Interactive GUI for 2-D Objects

- Used Java to design a simplistic GUI where objects could be created and moved for visualization and testing purposes.
- Applied oriented bounding box trees and separating axis theorem for optimal efficiency.

MEMER - Tinder for Memes

- Mobile Android application that allows users to upload images and like/dislike and comment on other's images through a tasteful GUI.
- Uses Google Firebase for a 24/7 backend server that supports user authentication, user data management, and image storage.

BESTRIS - Self Developed Tetris

- Fully functioning Tetris game developed in Java with all the basic functionality of Tetris and algorithms for efficiency and smooth gameplay.

BEARMAPS - Interactive Map of Berkeley, CA

- Included scaling, pathfinding, searching, and autocompletion features.
- Implemented using QuadTrees, the A* shortest paths algorithm, and Tries.

SIXT33N - Voice Controlled Electric Car

- Accurately interpreted specific voice commands to perform distinct actions including stopping, speeding up, and turning.
- Made use of techniques such as Principal Component Analysis, Singular Value Decomposition, and K-Means Clustering to interpret commands.