

Benjamin Carlson

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EDUCATION

UC BERKELEY | BERKELEY, CA
ELECTRICAL ENGINEERING AND
COMPUTER SCIENCE, B.S.
Expected Graduation: May 2020
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 • Android Studio
• IPython Notebook • Google Firebase
• Sublime Text • Overleaf

AWARDS

2nd Place - CSPA Tech Competition
@ UC Berkeley

INTERESTS

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

LINKS

🌐 <https://github.com/bencarlson01>
in <https://linkedin.com/in/bcarlson01>

INDUSTRY EXPERIENCE

THE BOEING COMPANY | SOFTWARE ENGINEERING INTERN

June 2015 – August 2015 | Huntington Beach, CA

- Developed the Java backend for an object collision tester which received sensor inputs for moving shapes and efficiently detected all collisions.
- Created a Python script which converted HTML webpages to MHTML files, a website archive format.
- Worked with a team of 8 to organize, supply, cater, and advertise for an internship fair for over 60 interns and 300 visitors.

EXTRACURRICULAR EXPERIENCE

UC BERKELEY | CS61B ACADEMIC INTERN

August 2017 – Present | Berkeley, CA

- Work with students during labs and office hours to teach them programming and debugging techniques.
- Tutor students with challenging material, algorithms, and data structures.

UC BERKELEY | EE16B TUTOR

August 2017 – Present | Berkeley, CA

- Help a lab of 40 students with building and debugging breadboard circuits.
- Explain the concepts and practical applications of these circuits to students.

RELEVANT PROJECTS

OBJECT COLLISION TESTER - Interactive GUI for 3-D Objects

- Used algorithms including oriented bounding box trees and separating axis theorem to optimize the backend for immediate and accurate responses.
- As the sole backend programmer on a team of 6, I catered my design to their needs and worked with their interactive GUI to visualize and test my code.

MEMER - Tinder for Memes

- Android application that allows users to upload images and like/dislike and comment on other user'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 that utilizes object oriented programming for efficiency and smooth gameplay.

BEARMAPS - Interactive Map of Berkeley, CA

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

SQL DATABASE - Database Management System

- Developed a domain specific language that supported all of the core functionalities of SQL to allow interaction with the database.
- Designed a line-by-line interpreter for command inputs.
- Saved data tables on disk for persistent storage and use over many sessions.