

# 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 • Pandas

## AWARDS

2<sup>nd</sup> 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 75 interns and over 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 one of two backend programmers on our team of 6, I evenly divided our work with my teammate to quickly create effective code that met all of the backend requirements for this program and satisfied our team's needs.

### 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.