# Kunal Agarwal

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## EDUCATION

### UNIVERSITY OF CALIFORNIA, BERKELEY

BA in Computer Science
BA in Applied Mathematics
(Emphasis: Data Science)
May 2021 | Berkeley, CA
Honors to Date
Cum. GPA: 3.91/4
Major GPA: 3.92/4
Student Groups:
Computer Science Mentors

### MISSION SAN JOSE HIGH SCHOOL

High School Diploma
June 2017 | Fremont, CA
Student Groups:
Wind Ensemble & Marching Band (Trumpet), Debate,
Model United Nations

## SKILLS

### PROFICIENT:

Python • Java • C • Scheme
Pandas • MySQL • RISC-V
Git • gdb • Valgrind

### FAMILIAR:

GoLang • C++ • HTML/CSS
Javascript • Django

## COURSEWORK

### COMPUTER SCIENCE

Program Structures & Interpretations
Data Structures
Computer Architecture
Principles/Techniques of Data Science
Algorithms/Intractable Problems ***(enrolled)***
Artificial Intelligence ***(enrolled)***

### MATHEMATICS

Linear Algebra
Multi-variable Calculus
Discrete Math & Probability Theory
Upper Division Linear Algebra ***(enrolled)***

## LINKS

LinkedIn:// **kagarwal2**
Github:// **westernguy2**

## REFERENCES

Alex Sim: asim@lbl.gov

## EXPERIENCE

### LAWRENCE BERKELEY NATIONAL LAB

Computer Science Research Intern
June 2019 - August 2019 | Berkeley, CA

- Re-engineered, packaged, and released a novel data compression algorithm in C where I used debugging software including Valgrind and gdb.
- Used the compression algorithm to find anomalies in inputted data using a variety of clustering algorithms in Scikit-learn packages.
- Presented progress every other week to the Scientific Data Management group and presented research findings at lab wide poster session.

### UC BERKELEY: COMPUTER SCIENCE DEPARTMENT

Data 100 Course Staff: Undergraduate Student Instructor
August 2019 – Present | Berkeley, CA

- Teach weekly lab and discussion sections of 30 students using Pandas and SQL.
- Lead lessons on topics including data visualization and analysis, data cleaning, regressions, classifiers, cross-validation, and more.
- Host office hours to answer questions and debug assignments and projects.

CS 61A Course Staff: Tutor
June 2019 – August 2019 | Berkeley, CA

- Teaching three sections of six to seven students bi-weekly on computer science topics including recursion, trees, linked lists, and more.
- Responsible for various logistical duties including grading and proctoring exams, grading projects, and running review sessions.

### PIONEERS IN ENGINEERING

Web Developer
Aug 2017 – May 2018 | Berkeley, CA

- Recreated the website [pioneers.berkeley.edu] using human centered design by changing the organization of information, replacing the layout of the front page, and reformatting the way in which the website looped through XML files.

## PROJECTS

### GRAPH API, MAKE, AND TRIP FINDER

Dec 2018

- Created an API using Java that allowed users to create a graph data structure for their own use.
- Included a general traversal algorithm as well as breadth-first & depth-first traversal algorithms in addition to A* and Dijkstra's.
- Built a trip finder and a basic *make* compilation tool using the API.

### AMAZONS: COMPUTER BOARD GAME

Nov 2018

- Used Java and object oriented concepts to develop an AI utilizing a minimax algorithm improved by alpha-beta pruning and iterative deepening.
- AI was ranked *top five* in a class of around a thousand students.

### CS 61A: TEACHING MATERIALS: WEB APP USING DJANGO

Aug 2018

- Utilized Django framework to allow users to view worksheets and their corresponding solutions that are specific to their topic(s) of preference.
- Implemented on personal website [kunal-agarwal.com] using HTML and CSS.