Kunal Agarwal

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Education

University of California, Berkeley   **December 2021**

B.A. Computer Science, B.A. Applied Mathematics (Emphasis: Data Science)

Honors to Date

Major GPA: 3.92/4 | Cumulative GPA: 3.89/4

- <u>Computer Science Coursework</u>: Data Structures, Computer Architecture, Algorithms/Intractable Problems, Principles/Techniques of Data Science, Artificial Intelligence, Operating Systems (*enrolled*)
- <u>Mathematics Coursework</u>: Multivariable Calculus, Linear Algebra, Discrete Mathematics, Probability Theory (*enrolled*)
- <u>Student Groups</u>: Computer Science Mentors

Skills

Proficient: Python, C, Java, Pandas, MySQL, Git, RISC-V, Scheme, gdb, Data Science Libraries (Scikit Learn, SciPy, Seaborn)

Familiar: GoLang, C++, HTML/CSS, Flask, Django, Javascript, Android SDK, PyTorch

Experience

Lawrence Berkeley National Laboratory (Berkeley, CA)   **June 2019 - August 2019**

Computer Science Research Intern

- 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 two lab wide poster sessions.

UC Berkeley EECS Department (Berkeley, CA)   **August 2019 - Present**

Data 100: Undergraduate Student Instructor (TA)

- Head TA for Principles/Techniques of Data Science with over 1300 students (one of the largest upper division classes at UC Berkeley)
- 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.
- Responsible for various logistical duties including grading and proctoring exams, grading projects, and running review sessions.
- Reviewed, tested, and released weekly homework, lab, and project assignments to students.

Projects

Coursestamp   **February 2020**

- Deployed using Flask, the web application allows users to pick an online course on Youtube and search for all occurrences of a certain keyword or phrase in the online course.
- Caption data from Youtube is placed into JSON files which are then parsed through upon a request.

Guardian   **October 2019**

CalHacks Prize Winner

- Used the RideOS API and Android SDK to create an app that allows one to request a 'guardian' to walk them home in realtime.
- The app uses Berkeley crime data (parsed using Pandas tools) to find the route that avoids areas where a crime recently occured.

Amazons: Computer Board Game   **November 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.