

Sandeep Mukherjee

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EDUCATION

University of California, Berkeley | Berkeley, CA

Bachelor of Arts in Computer Science & Mathematics

May 2023

Awards: National AP Scholar (2020); AMC 10, 12 (2017-2020); National Merit Commended Scholar (2020);

GPA: 4.00

Coursework: Linear Algebra, Discrete Mathematics and Probability Theory, Data Structures and Algorithms, Structure and Interpretation of Computer Programs, Multivariable Calculus, Designing Information Devices and Systems

Test Scores: 36 composite and 36 on each subsection of the ACT

PROFESSIONAL EXPERIENCE

Berkeley AI Research, AUTOLab | Berkeley, California

Undergraduate Researcher

Sep 2020 – Present

- Built computer vision model and semantic segmentation pipeline to track plants across development in order to enact pruning policy more effectively for a fully autonomous polyculture garden.
- Redesigned get-out-the-vote Django web application, garnering over 1500 users using mobile formatting and a custom task runner.

The Art of Problem Solving | San Diego, California

Grader & Moderator

Sep 2020 – Present

- Grade and engage with students to about 50 students weekly in subjects varying from Olympiad mathematics, counting and probability, number theory, and computer science, helping teach a myriad of problem-solving strategies.

Jane Street | Remote

First-Year Technology & Trading Program (FTTP)

Mar 2021

- One of 60 selected participants for the first ever FTTP hosted by Jane Street. Developed a trading bot in Java in a team of three, which placed 2nd overall by profit/loss on a mock exchange.

Google | Remote

Computer Science Summer Institute Online

Jun 2020 – Aug 2020

- Engaged with the fundamental principles of data structure and algorithms including greedy algorithms, dynamic programming, divide-and-conquer algorithms, and debugging techniques in a competitive Google CS program.

PUBLICATIONS

- Avigal et al, "Learning Seed Placements and Automation Policies for Polyculture Farming with Companion Plants," IEEE-ICRA 2021

LEADERSHIP AND EXTRACURRICULARS

Traders @ Berkeley | Berkeley, California

Founding Member

Dec 2020 – Present

- Building Berkeley Trading Competition interface using the JavaScript react framework to create interactive displays of bid-ask spreads, PnL tables, and user scores.
- Host office hours and engage with student questions for the Quant Finance DeCal as a Teaching Assistant.

Capital Investments @ Berkeley (CIB) | Berkeley, California

Quantitative Analyst

Sep 2020 – Present

- Performed an election study on the relationship between various sector ETFs (SPY, XLI, etc) and New York Times headline sentiment towards political parties and candidates.

PROJECTS

Build Your Own World

- Built a classic type engine game, which randomly generates a world where users race the A* pathfinding AI to collect objectives.

Image Classification

- Used the TensorFlow Keras.Sequential framework to train a convolutional neural network to classify various types of plants.

Citadel Datathon

- Created an ARIMA model to model trends in new COVID-19 cases to find unreported cases near the beginning of the 2020

Personal Website

- Designed and created a personal website in JavaScript, HTML, and CSS including features like an interactive project gallery.

SKILLS AND INTERESTS

Technical: Python (pandas, numpy, cv2), JavaScript (React, Firebase)/CSS/HTML, Java, R (dplyr, tidyverse)

Interests: Tennis, Saxophone (jazz), hiking, education