Sandeep Mukherjee

Berkeley, CA 94704 • (732) 689-0173 • sandeep.m@berkeley.edu • linkedin.com/in/sandeepmukh • sandeepmukh.github.io

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 for a fully autonomous polyculture garden. Currently building a model using the CycleGAN architecture to unify overhead image style.
- 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 & Teaching Assistant **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 tile 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

Pigcasso
- Designed electron app which used a style transfer network to project the style of Picasso's *Weeping Woman* onto an uploaded image

SKILLS AND INTERESTS

Technical: Python (pandas, numpy, cv2), JavaScript (React, Firebase)/CSS/HTML, Java, R (tidyverse)
Interests: Tennis, Saxophone (jazz), hiking, education, politics/satire