HARSHIL DODIYA

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EDUCATION

University of California, San Diego   Sep 2021 - Jun 2025
Major: Mathematics - Computer Science (BS); Minor: Finance, Provost Honors

SKILLS AND RELEVANT COURSEWORK

Programming and Prototyping Skills: Java, HTML,CSS,node.js, Flask, js, C/C++, Pandas, SQL, Android, Git, Github
Relevant Coursework: Advanced Software Engineering, Web Design Principles, DBMS Principles, Object Oriented Programming, Systems Programming, Advanced Data Structures, Discrete Math and Graph Theory, Statistical Methods

WORK EXPERIENCE

Incoming Artificial Intelligence Intern, MeasureOne, San Francisco   Aug 2024 - Oct 2024
- Scraping data through Puppeteer to train AI models.

Instructional Assistant, University of California, San Diego   Oct 2023 - Present
- Tutor and grader in the math department for Vector Calculus and Precalculus for over 1000 students.
- Performed individual and group tutoring, held one-on-one office hours and assisted discussion sections.

Software Engineering Intern, The One Technologies, Ahmedabad, India   Jun 2023 - Sep 2023
- Researched and drafted a business requirements document, and figma wireframes for a social media agency, presented in front of a group of five company executives
- Helped create a web crawler utilizing Python with asyncio and HTTPX to asynchronously scrape property data from multiple URLs for a property management system.
- Implemented backend of adding and removing employees functionality, and profile section through js and SQL for an employee DBMS.
- Helped in redesigning the employee search feature using hash tables, increasing space efficiency and boosting query performance by 20%.

PROJECTS

Tarot, but a game - Multiplayer Game WebApp   Apr 2024 - Jun 2024
- Led a team of 10 to develop a multiplayer game using WebSockets and React, utilizing cookies and local storage to manage user data and history.
- Managed both server-side and client-side development, focusing on backend infrastructure, implemented game features, including world events and settings page, and user profiles.
- Implemented core chat features: Developed and maintained chat capabilities, including initializing chat behavior, handling outbound messages, and displaying messages within the game.

Successorator - ToDo List Android Application   Jan 2024 - Mar 2024
- Collaborated in a team of 6 and used Agile to develop an android application focused on enhancing user productivity.
- Utilized Java and Android Studio for application development, implemented backend using room database, ensuring robust code quality through JUnit and Robolectric unit testing.

Asteroid Diameter and Classification Model   Jun 2023 - Jul 2023
- Utilized a comprehensive dataset from the Jet Propulsion Laboratory, California Institute of Technology, encompassing 31 features for 839,714 objects.
- Applied advanced machine learning techniques, including feature engineering, linear and polynomial regression models, and clustering algorithms, to enhance asteroid classification and prediction accuracy.
- Developed a deep neural network with hyperparameter tuning and k-fold crossval, achieving a significant improvement in diameter prediction MSE of 0.00068175. Achieved classification accuracy of 97%.

Huffman Compression Tool   Aug 2022 - Sept 2022
- Developed in C++, achieving significant reduction in storage needs for large data files, including those over 100 GB.
- Engineered and tested compression and decompression processes in the tool, ensuring lossless data integrity and exact recovery of original files.