Laya Pullela

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Experience

Alignment Healthcare | CA, Orange
Machine Learning (NLP) Summer Intern | 06/2023 - 09/2023

- Launched a beta machine learning application with a user interface to extract relevant information from incoming medical faxes to alleviate manual data entry demands.
- Achieved a model accuracy of 85% in entity recognition, and almost 100% in matching patients to the database.
- Created a fine-tuned LLM feature using QLora on BiomedLM and Meta Llama to assign ICD10 codes to patients, beating existing recommendation engine by over 3x.

Children's Hospital Orange County (CHOC) | CA, Orange
Lead Data Science Intern (Summer) | 06/2022 - 08/2023

- In 2022, created a supervised machine learning learning model for pediatric diagnostic prediction using over 13K samples of vital sign and demographic data in pediatric patients (MIMIC-3 database).
- Presented the above project at Pediatric Academic Societies conference in bioinformatics representing CHOC.
- Selected as Lead Researcher to mentor 5 undergraduate interns, handpicked from a pool of 50+ candidates, for a cutting-edge ML project on pediatric anxiety diagnosis.
- Engineered the project's core algorithm, utilizing an unsupervised learning approach to uncover patterns and correlations within 6 key socioeconomic and demographic features.

UCSB Bionic Vision Lab | CA, Goleta
Undergraduate Research Assistant | 09/2022 - Present

- Developed a new temporal function for the pulse2percept python library (available on GitHub) with three additional parameters to accurately predict the brightness of visual percepts in prosthetic retinal device users.
- Designed and implemented optimization methods for these functions which reduced error between predicted and actual precepts by over 15x.

UC Santa Barbara | CA, Goleta
Computer Science Learning Assistant | 03/2023 - Present

- Starting my second year, was selected by the CS department as a paid learning assistant for the advanced course in C++.
- Dedicated 10 hours per week to hold office hours, grade exams, and answer students' questions on Piazza.

Education

UC Santa Barbara | Goleta , CA
B.S. Computer Science | 06/2025
GPA: 3.88

Relevant Course Work

- Data Structures and Algorithms (A, B)
- Computer Arcitecture, Computer Organization
- C++ Object Oriented Programming (A, B, C)
- Signals and Systems (A, B)
- Deep Learning (ECE180) and Computer Vision (CS181)
- Upper-div Linear Algebra (A, B)

Projects

AutoDoc Web App (08/2023 -): https://github.com/layapullela/autodoc1.0:
- Streamlined patient case processing by accurately extracting key information and assigning the most probable diagnoses
- Leveraged a combo of two NLP algorithms, fine-tuned Word2Vec and TF-IDF, for symptom and diagnosis matching
- Engineered a seamless user experience with a React frontend and Node.js backend
- Deployed the application using Heroku for scalable and robust cloud hosting

- Automated data acquisition by web scraping from Mayo Clinic using BeautifulSoup4 (bs4), enriching the database about 200 verified common medical conditions.