Shreyas Tulsi

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EDUCATION

University of California, Los Angeles

B.S. in Computer Science with Minor in Mathematics   *Expected Graduation, Dec 2026*

- **Related Coursework:** Object-oriented Programming (C++), Computer Organization (Architecture, Assembly Language, Memory Organization), Software Construction (Unix, Shell Scripting, Debugging, Client-server), Operating Systems, Logic Design of Digital Systems, Multivariable Calculus, Linear Algebra, Discrete Math, Probability and Statistics
- **Standardized Test Scores**: SAT-1550, ACT-36

EXPERIENCE

Deep Learning Researcher, UCLA G. Oppenheimer Center

ML / Statistical Analysis / Python & R scripting   *Oct 2023 – June 2024*

- Leveraged advanced Convolutional Neural Networks (CNNs) and Matlab's CONN imaging software, complemented by Structural Equation Modeling, to conduct analysis of fMRI brain scans
- Developed a 16S pipeline involving: trimming and refining FastQ files, assessing Alpha Diversity with Qiime1 software, conducting Principal Coordinate Analysis for beta diversity, and utilizing Maaslin software for bacterial abundance analysis (using R scripts)
- Conducted t-tests within a one-way ANOVA and utilized logistic regression models to ascertain the significance of factors in linking Food Cravings to Everyday Discrimination (using Python scripts)

Full Stack Development, My Alcohol Story (Social Network)

React JS / Large Language Model (LLM)   *July 2023 – Jan 2024*

- Designed an interactive messaging platform, facilitating hundreds of daily communications
- Implemented a profile system enabling users to favorite each other's posts, repost stories, visit each other's profiles, and send follow requests
- Employed classification models for rapid identification and removal of inappropriate user comments, and fine-tuned a ChatBot model using Hugging Face datasets to assist with alcohol prevention topics

Mobile App Development, Dublin Mayors' Council (Worked with Mayor Melissa Hernandez)

React Native / Project Manager / Community Service   *Aug 2022 – May 2023*

- Led an 8-member team to create a cost-free grocery delivery service for senior citizens through a mobile application
- Organized partnership with a local nonprofit for grocery delivery
- Executed 134 grocery deliveries

Web Development, Playdate Care (Online Daycare Marketplace)

React JS / Web Design   *Apr 2022 – Oct 2022*

- Enhanced parent-babysitter interaction approval ratings 32% by implementing a live-stream broadcast system using React JS | Video SDK
- Implemented Kubernetes for deploying a high-availability livestreaming service with rolling updates and dynamic pod autoscaling to optimize performance under variable load conditions

COMPETITIONS

- picoCTF International Individual Competition (164/18000 competitors), AFA CyberPatriot (31/2000 teams), Cisco Mayers Cup Winner for Network Infrastructure
- United States of America Coding Olympiad (USACO) Gold Division Qualification

PROJECTS

Advanced LLM-Integrated Educational Platform   *May 2024 – Sept 2024*

- Developed a Retrieval-Augmented Generation (RAG) system in Python using LangChain that processes user-provided PDFs and YouTube videos as learning material, generating sample questions and answers using a model fine-tuned on Hugging Face datasets
- Improved the learning experience by creating an adaptive application that automatically updates educational plans according to user performance and feedback, ensuring tailored learning progression

ML-Powered Network Traffic Analyzer   *June 2023 – October 2023*

- Developed a Python application using TensorFlow to analyze Wireshark network packets, integrating Convolutional Neural Networks (CNNs) specifically for extracting and classifying features from packet headers and payloads, and Isolation Forest for pinpointing network anomalies, enhancing overall detection capabilities