**Education**

**Masters of Computer Science Sept 2022 – June 2024**

University of California San Diego (UCSD) CGPA: 3.979/ 4

*Relevant Courses*: Deep Learning, Scalable ML Systems, Recommender Systems, Computer Vision, NLP – LLMs, Algorithms

**Bachelor Of Engineering (Computer Engineering) August 2018 – July 2022**

Vivekanand Education Society’s Institute of Technology (VESIT) CGPA: 9.013/ 10

*Relevant Courses*: Machine Learning, Software Development, Natural Language Processing, Cloud Compute, Big Data Analytics

**Experience**

*Machine Learning NLP and CV,* **Ujima S&P Lab, UCSD**  **March 2023 – Present**

* Led 3 freshers through the Early Research Program in curating a database using LLMs, Clustering, and NER for HCI Research.
* Built a “Smart Mirror” on Raspberry Pi using the VGG-Face TF-Lite Model, trained on 100,000 images, to detect ethnicity, highlight the existing biases in CV datasets, and contribute to the public domain via user feedback.

*Data Analyst & Cyber Security Intern,* **Legendary Entertainment**  **June 2023 – Dec 2023**

* Created a Python automation script to generate a dashboard that reduced the total time taken by the SOC analyst from 80 minutes to about 4 minutes daily in tracking user-anomaly events by integrating Splunk Dashboard and Azure MSGraphs APIs.
* Maintained a high level of security while streamlining a user’s authentication process by integrating a FIDO Alliance product into the existing SAML/OIDC SSO workflow.
* Assisted the VP of security in laying the foundation of a next-gen universal anomaly and user-behavior detection platform based on LLMs in collaboration with Sky High Security by building a prototype in Splunk.

*Full Stack Development Intern,* **Makos Infotech (Startup)**  **June 2021 – August 2021**

* Integrated and developed server-side code using JQuery, PHP, and MySQL for an early startup targeting the automation of the On-campus placement process using Agile Methodologies.
* Created and merged relational databases using MySQL workbench and deployed it on AWS RDS to develop a college-student-company social network inspired by Facebook’s friend system.
* Established a mentorship-onboarding program for new undergraduate interns, aligning them with the existing codebase and design choices using UML, saving the company at least 1 week of time and effort.

*Data Analyst Intern*, **Leadingindia.ai** **May 2020 – July 2020**

* Collaborated with a team of four to develop a vaccine prediction model for H1N1 and seasonal flu vaccines, accurately predicting public acceptance trends (41%) for the COVID-19 vaccine, securing first place among 85 intercollege peer groups.
* Published a [research paper](https://doi.org/10.1007/978-981-16-0401-0_11) in Springer & authored a [blog](https://medium.com/@jjhaveri1906/pandemics-a-harsh-reality-7c05254e907b) highlighting the correlation between H1N1 and COVID-19 pandemics.

**Projects**

**[Inquirable Models: Increasing Explainability in Health-AI using LLM](https://docs.google.com/presentation/d/1naydNzz6F8W51bA40Phez4-Pj2b-vJRJmUHkOp5rO1M/edit?usp=sharing) Sep 2023 – Jan 2024**

* Conducted a two-phase exploratory study using prompt engineering techniques on leading Large Language Models (LLMs) with SHAP values to improve the interpretability of traditional medical risk models and reduce patient risk.
* Facilitated surveys with doctors and patients to assess answer quality, focusing on metrics such as confabulation rate.
* Paper’s poster accepted for presentation at the AMIA 2024 Annual Symposium.

[**MedLM: Exploring Language Models for Medical QnA Systems**](https://github.com/JayJhaveri1906/CSE291_MedLM)[(Paper)](https://arxiv.org/abs/2401.11389) **March 2023 – Aug 2023**

* Led a team of 4 to fine tuning language models (Bloom, T5, GPT-2) on the MedQuad dataset in collaboration with Microsoft researcher Dr. Asma Ben Abacha.
* Compared performance against GPT-3.5 and GPT-4 using Dynamic Prompting with Retrieval Augmented Documentation (RAG) via medical InstructOR Embeddings on the patient questions.
* Increased the ROUGE and BLEU scores by 10% using a Bert Classifier to give extra contextual awareness to the models.

[**GrooveGenie: A copyright-free music generator**](https://github.com/JayJhaveri1906/GrooveGenie-A-copyright-free-music-generator) **March 2023 – June 2023**

* Created an open-source music generation model, using Facebook’s EnCodec Transformer to compress audio into embeddings.
* Trained a conditioned Multimodal GAN network to generate music based on user-provided genre inputs embedded using the BERT model, aimed at producing only copyright and royalty-free music, trained on the FMA dataset.

[**Game Genre and Recommendation Classification using Steam Reviews**](https://github.com/JayJhaveri1906/Game-Genre-and-Recommendation-Prediction) **Nov 2022 – Dec 2022**

* Designed ETL data pipelines to preprocess and apply machine learning techniques for classifying game genres, analyzing user sentiment, and curating a personalized game recommendation system using user reviews.
* Achieved 90.53% accuracy with Decision Trees, balanced data & TF-IDF, outperforming N-Gram, Multinomial NB, Linear SVC.

**[Divya-Drishti: An Independent Aid for the Visually Impaired](https://github.com/JayJhaveri1906/Divya-Drishti)** [(Paper)](https://dx.doi.org/10.2139/ssrn.3867707) **Aug 2020 – May 2021**

* Achieved a 400% net cost reduction by creating a real-time Voice-activated AI IoT android application to help Visually Impaired People (VIPs) comparable to state-of-the-art OrCam in multimodal classification of currency, objects utilizing GCP’s Vertex AI.
* Published a [research paper](https://dx.doi.org/10.2139/ssrn.3867707) highlighting the needs of VIPs, funded by the Mumbai University Minor Research Grant.

**Selected Certifications and Publications**

- *AWS Certified Cloud Practitioner (CCP)*, Amazon Web Services, [Credly Link](https://www.credly.com/badges/45871348-ade7-4b07-89ee-6eeb7e85b72f/linked_in_profile)

- *Machine Learning Based Prediction of H1N1 and Seasonal Flu Vaccination*. Advanced Computing. IACC 2020. Springer. [DOI.org Link](https://doi.org/10.1007/978-981-16-0401-0_11)

**Skills:** Python, PyTorch, Tensorflow, OpenCV, HTML, CSS, Javascript, Splunk, SQL, C, Linux, Git, AWS, Azure, Google Cloud, Firebase