

## EDUCATION

**Masters of Computer Science**

Sept 2022 – June 2024

University of California San Diego (UCSD)

CGPA: 3.972/ 4

*Relevant Courses:* Deep Learning, Scalable Data/ML Systems, Recommender Systems, Adv Computer Vision, Adv NLP - LLMs**Bachelor Of Engineering (Computer Engineering)**

August 2018 – July 2022

Vivekanand Education Society's Institute of Technology (VESIT)

CGPA: 9.013/ 10

*Relevant Courses:* Software Development, Database Management, Algorithms, Machine Learning, Cloud Computing, OOPs

## 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, Web scraping, and NER for HCI Research.
- Built a "Smart Mirror" on Raspberry Pi using REST API and 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 shortcut 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 via Python Scripting.
- 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 CRUD 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 processes, saving the company at least 1 week of time and effort.

**Web Developer Intern, VESIT Renaissance Cell**

June 2020 – July 2020

- Led the design and development of a Django-based [Paper Publication Web service](#), implementing essential CRUD operations for 50 professors hosted on [Heroku](#), serving approximately 250 CSE students.
- Developed a [Portfolio Website template](#) using HTML/CSS/JS and Bootstrap, deployed on Google's Firebase.

## PROJECTS

**[Inquirable Models: Increasing Explainability in Health-AI using LLM](#)**

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 was accepted for presentation at the AMIA 2024 Annual Symposium.

**[Alt Bot for Mastadon: An automatic image alt generation bot \(Github\)](#)**

Sep 2023 – Dec 2023

- ✓ Developed a REST API based Chrome extension in JS to help visually impaired people browse decentralized social media feeds by leveraging hugging face image captioning models to generate alternative image descriptions.
- ✓ Deployed 3 levels of custom cache system to ensure efficient performance with minimal lag complemented with testing scripts.

**[MedLM: Exploring Language Models for Medical QnA Systems \(Github\)](#)**

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.

**[Aatmanirbhar Sanchar: Secure Self-Sufficient Communications \(Github\)](#)**

June 2021 – May 2022

- ✓ Led a team of 4 to develop a secure, end-to-end encrypted chat application with off-the-grid functionality for the Tata Institute of Fundamental Research Institute (TIFR), utilizing CI/CD practices to establish a streamlined client-server architecture.
- ✓ Collaborated in implementing SHA-256 and AES-256 overlapped inside an HMAC envelope to protect against cyber attacks.

**[Divya-Drishiti: An Independent Aid for the Visually Impaired](#)**

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](#) 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](#)- Machine Learning Based Prediction of H1N1 and Seasonal Flu Vaccination. Advanced Computing. IACC 2020. Springer. [DOI.org Link](#)**Technical Skills:** Python, SQL, SPL, PostgreSQL, REST, PyTorch, ORM, Splunk, SQL, C, Java, Git, AWS, Azure, Google Cloud, Firebase