

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

Software Engineer (Data and AI), Ujima S&P Lab, UCSD

March 2023 – Present

- Building auto scaling **AWS Cloud architecture** to host an LLM User Study on **AWS Beanstalk** with a **Mongo DB** storage system.
- Led the **product development** and strategy for an LLM orchestration platform, managing a team of 3 to curate a structured, analysis-ready dataset for HCI research on hate crimes; utilized **LLMs, clustering, and NER to web-scrape**, merge, and process articles from sources like the Web, Lexis Nexis, and TDM Studio, employing LLMs for filtering, **classification**, and **data extraction**.
- 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.

Cloud Cyber Security & Data Analyst Intern, Legendary Entertainment

June 2023 – Dec 2023

- Create a **Python script** automating data flow to generate dashboards, **reducing time taken by the SOC analyst from 80 minutes to about 4 minutes daily** in classifying user-anomaly events by integrating **Splunk, Active Directory, and Azure MSGraphs APIs**.
- Part of **cross-functional** collaborative team to maintain a high level of security while streamlining users' **authentication** process by integrating a **FIDO Alliance** product into the existing **SAML/OIDC SSO** workflow.
- Assisted the **executive leadership** in laying the foundation of a next-gen universal **anomaly** and user-behavior detection platform based on integrating LLMs with existing cloud brokers in collaboration with **Sky High Security** by building a prototype in **Splunk**.

Full Stack Development Intern, Makos Infotech (Startup)

June 2021 – August 2021

- Managed the **end-to-end development** of an internal platform **automating** on-campus placement processes for universities.
- Applied **Agile** methodologies, coordinating with stakeholders to deliver features that improved **UX** and **operational efficiency**.
- Maintained and optimized **relational database** storage using **MySQL** workbench and deployed it on **AWS RDS** to develop a college-student-company social network inspired by Facebook's friend system.

Undergraduate Research Assistant, Tata Institute of Fundamental Research (TIFR)

June 2021 – May 2022

- Led a team of 4 to develop an **Android Java** application that monitors a selected directory and uses **multi-part upload** methodologies to **encrypt** and **securely** upload to a dedicated private remote cloud server.
- Published a [paper](#) explaining our Node JS based **Fault Tolerant client server architecture** connected to remote stations.
- Utilized **GCP's Maps and Sheets API** to design a real time **HTML/CSS** based live **Geo tracking** website from the collected data.

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](#) in Springer & authored a [blog](#) highlighting the **correlation** between H1N1 and COVID-19 pandemics.

PROJECTS

Alt Bot for Mastadon: An automatic image alt generation bot (Presentation)

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 and **injecting** them in **HTML**.
- ✓ 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 (Paper)

March 2023 – Aug 2023

- ✓ Led a team of 4 to **fine tuning** language models (**Bloom, T5, GPT-2**) on the MedQuad Healthcare Doctor-Patient QnA 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 Generation (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.

Divya-Drishti: An Independent Aid for the Visually Impaired (Paper)

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**.

Automated Number Plate Recognition and Parking System

Dec 2019 – Feb 2020

- ✓ Used **CI/CD** to build an **Android Java** based application connected to a **Firestore server** to automate security and space availability in car parking systems by monitoring the number plates **detected** at the entry and exit using **Tesseract OCR** and **YoloV3**.
- ✓ **Containerized** the software to ensure **seamless deployment** on existing CCTV systems at parking lots, **minimizing** upfront costs.

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](#)**Skills:** Python, SQL, PyTorch, Tensorflow, Pandas, HTML, CSS, Javascript, Java, C, Docker, Splunk, Linux, Git, AWS, GCP, Firebase