

EDUCATION

Masters of Computer Science **Sept 2022 – Dec 2023 (Expected)**
University of California, San Diego (UCSD) CGPA: 3.95/ 4

Relevant Courses: Advanced Computer Vision, Deep Generative Modelling, Advanced Data-Driven Text Mining (NLP), Computer Vision, Deep Learning, Scalable Data/ML Systems, Recommender Systems, AI: Probabilistic Reasoning and Decision-Making, Design and Analysis of 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, Big Data Analytics (Hadoop), Artificial Intelligence and Soft Computing, Software Development, Data Warehouse and Mining, Natural Language Processing, Distributed Systems and Computing, Data Structures, Object Oriented Programming, Analysis of Algorithms, Database Management System, Computer Networks, Cryptography/System Security, Web Development, Operating Systems, OOPM (Java) Lab, Cloud Computing Lab

INTERSHIP EXPERIENCE

Full Stack Developer, Stealth Startup **Feb 2023 – Present**
✓ Integrating Python-based DL architecture to a user-friendly Web Application utilizing AWS and React JS.
✓ Secured \$100K in funding in AWS credits from Adobe.

Full Stack Development Intern, Makos Infotech **June 2021 – July 2021**
✓ Developed Server-side rendering for their main website (Jobaskit.com) utilizing JQuery, PHP, and MySQL, which targets automating the On-campus placement process for various colleges.
✓ Managed existing and created relational databases using MySQL Workbench and deployed them on AWS.
✓ Worked on the website's front-end design using the prototyping tool Figma, followed by Bootstrap.
✓ Co-pitched the online job placement portal, Jobaskit, to 3 University professors alongside the founder.
✓ Mentored 2 intern recruits working on the digitalization of the teaching process.

Web Developer Intern, VESIT Renaissance Cell **June 2020 – July 2020**
✓ Led and managed a team of 6 during the entire duration of the internship.
✓ Worked on designing and implementing a Django-based [Paper Publication Easy-to-use Website](#) for my college, wherein teachers can easily add their newly published work for the students to see.
✓ Developed a [Portfolio Website](#) for our mentor.

Data Analyst Intern, Leadingindia.ai **May 2020 – June 2020**
✓ Worked in a team of four to build a Vaccine Prediction model on the H1N1 and seasonal flu vaccines to accurately predict the trends of the public acceptance rate (41%) of the Covid-19 vaccine.
✓ [Research Paper](#) was published in Springer & I wrote a [Blog](#) showcasing the correlation between the two pandemics.
✓ Secured first position for the mentioned research project amongst 85 peers intercollege.

App Developer, Dalvik Apps **Dec 2019 – Jan 2020**
✓ Designed and developed a Car Coin Collection game using C Sharp (C#) and created a UI-friendly library management system.
✓ Built an Android app using Android-Java as a substitute for default calling & messaging apps

Data Analyst Intern, Núclei Technologies **Dec 2018 – Jan 2019**
✓ Applied several supervised ML algorithms such as Linear regression & random forest in R & Python to predict sales of products at specific BigMart store locations based on previous sales data.

PROJECTS BULLET PNYS, VERBING

[Conversational QnA between Doctor-Patient](#) **March 2023 – Present**
✓ Experimenting by comparing Fine-tuned distilled generative text models like GPT2, Bloom with larger general models like GPT 3.5 and 4 for a Doctor Patient QnA conversation.
✓ Led team of 4 in fine-tuning diverse language models (e.g., bloom, t5, gpt2) on the MedQuad dataset, comparing them with larger models (gpt3.5, gpt4) using direct questions and prompt engineering.
✓ Collaborated with Microsoft researcher Dr. Asma Ben Abacha, creator of MedQuad dataset, for expert guidance.
✓ Utilized ROUGE, BLEU metrics, and conducted user surveys for doctors and patients to evaluate model performance.

[GrooveGenie: A copyright-free music generator](#) **March 2023 – Present**
✓ Created an open source music generation model, utilizing Facebook's EnCodec Transformer model to compress audio wav files to an embedding that can be understood by the model.
✓ Training a conditioned GAN network that generates music based on user-provided genre inputs embedded using the BERT model, with a goal of creating only copyright and royalty-free music, being trained on the FMA dataset.

JAY JHAVERI

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- ✓ Trying out different, more efficient Diffusion/Transformer architecture to generate audio.

Self-Driving Car

Feb 2023 – March 2023

- ✓ Built a self-driving car using QLearning and Deep Q-Network on the PyGame GUI.

Semantic Segmentation using Transfer-Learning and U-Net

Jan 2023 – Feb 2023

- ✓ Implemented pixel-level segmentation using a pretrained and Resnet and U-Net architecture including a weighted loss on the PASCAL VOC-2007 dataset. Evaluated using pixel accuracy and intersection over union (IoU) metrics.
- ✓ Achieved a pixel accuracy of 74.4% and an IoU of 15% by utilizing transfer learning with a modified ResNet18 model.

Game Genre and Recommendation Classification using Steam Reviews

Nov 2022 – Dec 2022

- ✓ Designed data pipelines to preprocess and apply machine learning techniques to classify game genres and also personalize game recommendations using the user's reviews and hours played.
- ✓ Out of N-gram, Multinomial NB, and Linear SVC, RF with Balanced data & TF-IDF gave the highest accuracy of 90.53%.

VisionNumpy: Computer Vision Applications

Sept 2022 – Dec 2022

- ✓ Implemented edge detection and Shi-Tomasi corner detection from scratch with NMS and Hysteresis thresholding.
- ✓ Bettered SIFT feature matching using the fundamental matrix, homogeneous geometry combined with RANSAC.
- ✓ Performed partially and completely bounded camera rectification with epipolar geometry used in 3D reconstruction.
- ✓ Implemented SLP, MLP, and CNN using Pytorch to perform classification on the MNIST dataset.
- ✓ Designed an image captioning deep learning algorithm using a CNN-LSTM architecture using the COCO dataset.
- ✓ Re-Implemented U-Net to perform semantic segmentation and compared it with transfer learning on ResNet16.

Aatmanirbhar Sanchar: Secure Self-Sufficient Communications

June 2021 – May 2022

- ✓ Led a team of 4 to design and develop an off-the-grid, cross-platform secure multimedia-supported chat application.
- ✓ Followed a CI/CD approach to build a client-server architecture with the server based on python and React JS.
- ✓ Made in collaboration with the Tata Institute of Fundamental Research (TIFR) to be used within the organization.
- ✓ Implemented SHA-256 and AES-256 overlapped inside an HMAC envelope to fight off any kind of cyber attacks.

Aatmanirbhar Samakraman: Auto File Synchronization Android Application

June 2021 – May 2022

- ✓ Led a team of 4 to develop an android application that monitors a selected directory and uses multi-part upload methodologies to encrypt and securely upload to the dedicated remote server.
- ✓ Uses a client-server architecture with the server based on python and Node JS backend.
- ✓ Worked on 1 of 3 in collaboration with the Tata Institute of Fundamental Research (TIFR).
- ✓ Utilized Google Maps and Sheets API to build a Bootstrap based website for live tracking feature of the uploader.

Divya-Drishti: An Independent Aid for the Visually Impaired

Aug 2020 – May 2021

- ✓ Created a Voice-activated standalone AIOT android application using Raspberry Pi4 to help Visually Impaired People (VIPs) accurately and efficiently detect Indian Currency notes, colors, and everyday objects.
- ✓ Funded by the Mumbai University Minor Research Grant Program.
- ✓ Received feedback, on the android-Java app developed, by National Association for the Blind (NAB)'s members.
- ✓ Achieved a 400% net cost reduction compared to products made by OrCam.
- ✓ Achieved a 400% net cost reduction by creating a Voice-activated AI-IoT android application to help Visually Impaired People (VIPs) that is similar to OrCam but cheaper.
- ✓ Published a research paper highlighting the needs of VIPs.

Code for Change Hackathon: A Data Extraction project

Nov 2020

- ✓ Developed Django based data extracting software for Global Parli Foundation NGO to automate the translation of Land ownership papers' pdf originally in Devanagari Script into an editable Excel sheet using Google Cloud OCR.
- ✓ Secured First position for the web application amongst the 72 teams participating.

"Mental Health Messiah" Twitter Bot

June 2020 – Aug 2020

Leveraged sentiment analysis to build a bot to help people suffering from mental health issues related to COVID-19.

Tech Used: IBM-Cloud API, Twitter API, Python, React JS, Angular JS

Automated Number Plate Recognition and Parking System

Dec 2019 – Feb 2020

Built android application connected to a Firebase server, to automate security and space availability in car parking systems by monitoring the number plates detected at the exits, utilizing already installed CCTVs at the entry and exit gates of parking lots. *Tech Used: Tesseract OCR, Firebase, Android-Java, Python*

International Flutter Hackathon: Healthy While Distant

June 2020

Devised a user-friendly Flutter app that leveraged smartphones' existing Bluetooth Low Energy (BLE) technology to help users maintain social distancing during the COVID-19 pandemic. The app alerts the user if they come within six feet of another smartphone and includes an additional feature of teaching yoga moves to stay fit while quarantining.

Tech Used: Flutter, Dart, BLE. Achievement: Secured top 150 positions amongst all the teams participating worldwide.

RESEARCH PUBLICATIONS

Jhaveri, J., Gupta, A., Chhabria, P., Ochani, N. and Sengupta, S., Dugad, S., (In Press). Aatmanirbhar Sanchar: Self-Sufficient Communications. International Conference on Intelligent Cyber Physical Systems and Internet of Things. IColCI 2022. Engineering Cyber-Physical Systems and Critical Infrastructures, ECPSCI vol 3. Springer (https://doi.org/10.1007/978-3-031-18497-0_41)

Jhaveri, J., Gupta, A., Chhabria, P., Ochani, N. and Sengupta, S., 2021. Divya-Drishti: An Independent Aid for the Visually Impaired. SSRN Electronic Journal. (<https://dx.doi.org/10.2139/ssrn.3867707>)

Inampudi S., **Jhaveri J.** et al., (2021) **Machine Learning Based Prediction of H1N1 and Seasonal Flu Vaccination.** In: Garg D., Wong K., Sarangapani J., Gupta S.K. (eds) Advanced Computing. IACC 2020. Communications in Computer and Information Science, vol 1367. Springer, Singapore. (https://doi.org/10.1007/978-981-16-0401-0_11)

ADDITIONAL INFORMATION

Leadership & Achievements:

- **VESIT Renaissance Cell (2020):** Led a team of 6 peers working on the design & implementation of a Django-based [Paper Publication Easy-to-use Website](#) to facilitate sharing the faculty's research work with students.
- Secured 1st place in [Code for Change](#) Hackathon held amongst 72 participants across the university.
- **Technical Skills:** Python, PyTorch, TensorFlow, OpenCV2, SQL, Java, Javascript, C, AWS, Google Cloud, Firebase, HTML/CSS, Android-Java, React JS, Django, PostgreSQL, Linux, Android Studio, Flutter, Object Oriented Programming, Git

TEMP:

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

June 2021 – May 2022

In collaboration with the [Tata Institute of Fundamental Research \(TIFR\)](#), developed an off-the-grid, cross-platform, secure (SHA-256) client-server chat application without depending on third-party APIs in the light of recent data privacy issues. I guided my team to adopt a CI/CD outlook on the project, and we kept redeploying our app after integrating features and solving bugs based on the feedback we received from our mentors. *Tech Used: Python, Node JS, Docker.*

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

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

Aug 2020 – May 2021

Created a Voice-activated standalone AIOT application using Raspberry Pi4 to help [Visually Impaired People](#) accurately detect Indian Currency notes, colors, and everyday objects. The project was funded under the [Mumbai University Minor Research Grant Program](#). Received feedback from the members of [National Association for the Blind \(NAB\)](#). Achieved a 400% in net [cost reduction](#) compared to products made by OrCam. *Tech Used: TensorFlow, OpenCV2, Google Cloud, Raspberry Pi, Android-Java, Linux, Python. Achievement: Published a [research paper](#) highlighting the needs of VIPs.*