

JAY JHAVERI

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EDUCATION

Masters of Computer Science

University of California, San Diego (UCSD)

Sept 2022 – Dec 2023 (Expected)

CGPA: 3.95/ 4

Relevant Courses: Advanced Computer Vision, Deep Gen Modelling, Deep Learning, Scalable Data/ML Systems

Bachelor Of Engineering (Computer Engineering)

Vivekanand Education Society's Institute of Technology (VESIT)

August 2018 – July 2022

CGPA: 9.013/ 10

Relevant Courses: Machine Learning, Artificial Intelligence, Computer Graphics, Natural Language Processing

INTERNSHIP 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.
- 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.

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.

PROJECTS

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

Self-Driving Car: Reinforcement Learning

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.

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.

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.
- Published a [research paper](#) highlighting the needs of VIPs.

RESEARCH PUBLICATIONS

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)

Technical Skills: Python, PyTorch, TensorFlow, OpenCV2, Computer Vision, AI/ML, C, AWS, Google Cloud, Firebase