JAY JHAVERI

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EDUCATION

Masters of Computer Science **Sept 2022 – Dec 2023 (Expected)**
University of California, San Diego (UCSD) CGPA: 3.96/4
Relevant Courses: Advanced Computer Vision, Deep Learning, Scalable ML Systems, Recommendation Systems

Bachelor Of Engineering (Computer Engineering) **August 2018 – July 2022**
Vivekanand Education Society's Institute of Technology (VESIT) CGPA: 3.75/4
Relevant Courses: Machine Learning, Object Oriented Programming, Analysis of Algorithms, Data Structures

INTERNSHIP EXPERIENCE

Cyber Security & Machine Learning Engineer, **Legendary Entertainment** **June 2023 – Present**
- Working on aggregating multiple related and unrelated data sources into a single place using SPLUNK.
- Designing an ML solution to create a universal user behavioral and anomaly detector across multiple applications.

Graduate Student Researcher, **Ujima Security and Privacy Research Lab** **June 2023 – Present**
- Mentoring 4 Undergraduates via the Early Research Student Program on a Computer Security and Privacy project related to upcoming AR/VR technology.
- Helping in developing a security-based generative and rule based chatbot

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.

PROJECTS

Conversational QnA between Doctor-Patient **March 2023 – Present**
- ✓ 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.
- ✓ Trying out different, more efficient Diffusion/Transformer architecture to generate audio.

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**
- ✓ 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 ResNet18.

Divya-Drishti: An Independent Aid for the Visually Impaired **Aug 2020 – May 2021**
- ✓ Created a Voice-activated standalone A-IOT 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)

ADDITIONAL INFORMATION

Technical Skills: Python, PyTorch, Tensorflow, OpenCV2, Computer Vision, AI/ML, NLP, OOPs, IOT, AWS, Google Cloud