HERAMB VIJAY DEVBHANKAR

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EDUCATION

University of Southern California, Los Angeles **JAN 2021- DEC 2022**
Master of Science, Computer Science, **GPA: 3.67/4**
Courses: Analysis of Algorithms, Database Systems, Web Technologies, Machine Learning, Foundations of AI.
Dr. Babasaheb Ambedkar Technological University, Maharashtra, India **MAY 2019**
Bachelor of Technology, Computer Engineering **GPA: 8.64/10**

SKILLS

Languages: Python, C, C++, R, PHP.
Machine Learning: Regression Techniques, Neural Networks, CNN, GAN, ResNet, VAE, RNN-LSTM.
Libraries/ Frameworks: OpenCV, Matplotlib, Numpy, Scikit-learn, Pytorch, Tensorflow, Keras, Flask.
Web Technologies/ Database Systems: HTML, CSS, JavaScript, MySQL, SQL, AngularJS, NodeJS, Bootstrap, Swift.
Competency: Computer Vision, Object Detection, Object Recognition, Hyperparameter tuning.

EXPERIENCE

Information Sciences Institute, *University of Southern California* — Graduate Research Assistant **SEP 2021- Present**

- Research different ways to train a state of the art recognition system using pure synthetic data (without using a single real image).
- Generate and compare images of Various class objects using Generative Adversarial Networks and Variational Autoencoders.

Tower lab, *University of Southern California* — Graduate Research Assistant **APR 2021- SEP 2021**

- Devised algorithms/ programming approaches for tracking movements and gene expression in free-moving flies in GFP video. Trained and compared LSTM and CNN models to identify and classify movement trajectory of Drosophila fly.
- Investigated various accuracy metrics based on conditional probability to assess the accuracy of trained models.

IOTric, *India* — Software Development Engineer (Machine Learning) **JUN 2020- DEC 2020**

- Created POC web application that allows users to upload distorted invoice or receipt images and extracts the text from it. Developed user interface using HTML, CSS, and JavaScript. Deployed a REST API to host a three-stage pipeline consisting Object detection and OCR on AWS EC2 G4 instances using Python-Flask.
- Implemented transfer learning to train Faster RCNN for detecting various sections within invoices, tesseract for text detection.

Verb Studio, *Indian Institute of Management Bangalore* — Deep Learning Intern **FEB 2020- MAY 2020**

- Built an AI web application using TensorFlow.js that analyzes user dance videos to generate expert feedback automatically. Achieved on average 4.7 stars on user ratings. Used JavaScript Async function to complete the task.
- Programmed one-shot image recognition with Siamese Neural Networks to compare and contrast multiple dance poses.

PROJECTS

Stanford University project: Tactile Image Generation for blind| *Python, OpenCV, Pillow, Tensorflow, Flask*

- Developed a technique that can automatically generate tactile images for visually disabled from general RGB input images.
- Examined the collective use of Instance Segmentation, Deep Learning based edge detection (Dense extreme Inception network model), and morphological transformation operations to achieve the above goal.

'Spoken2written' Python Package Publication| *Python, SpaCy* - Project Link

- Programmed an open source library that converts texts of spoken styles to its equivalent written form.
- Combined Name Entity Recognition, token matcher and programming methods to develop and publish a package on PyPI.

Gram Panchayat Adoption Advisor: Smart India Hackathon | ***Python, DJango, OpenCV, scikit learn*** - Project Link

- Created a portal that helps Parliament members to recognize underdeveloped rural counties in India.
- Processed night satellite images and census data to identify such counties, stored the data in MySQL database for retrieval.
- Ranked in top 10 by Indian Space Research Organization (ISRO) at Hackathon.

Undergraduate research: 'Mortgage Risk Analysis' | *Python, scikit learn, Matplotlib* - Link

- Discovered the effect of personal data, microeconomic, and macroeconomic factors on mortgage risk.
- Recommended data-driven approach and executed Principle Component Analysis for dimension reduction, Oversampling to reduce skewness of the dataset, etc to find conclusive insights from the data.

CO-CURRICULAR ACTIVITIES

- Towards Data Science, Medium — Contributing writer: Write A.I articles in a simple and digestible way.
- Student Body President, Association of Computer Engineering Students, Dr. B. A. T. University