Venkatarao Rebba

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SUMMARY:

A Machine Learning Engineer with 5+ years' industry experience in machine learning and software technologies. I have a proven track record of building and deploying end-to-end machine learning systems for business applications. Now, seeking a challenging machine learning role where I can employ my expertise and skills for broader applications.

PROFESSIONAL EXPERIENCE

EdPlus - ASU, Tempe, AZ: *Machine Learning Engineer* 10/2021 – Present

- Create supervised machine learning models on extensive, structured data to enhance students' success rate in pursuing their dreamed careers by **10%.**
- Developed and deployed machine learning models using Scikit-Learning, Pycaret and MLFlow.
- Improved ML model's F1 score with a rate of **8%** by devising features and following best feature engineering practices

Cerium Systems, Bangalore, India: *Senior Machine Learning Engineer* 06/2018 - 08/2021

Achievements: Awarded Rising Star as a recognition for my performance during anniversary celebrations in Feb'2019

- Researched, designed, and built three novel and robust deep learning models to automate image, video, and audio quality assessments using 3D-CNN, LSTM, and AutoEncoder architectures, saving **30%** of the manual verification cost.
- Collaborated with multiple stack holders to integrate and deploy the ML system to more use cases.
- Created Auto-ML stack for training and tuning audio models that accelerated model training by **10x**
- Optimized input pipeline using parallel processing, which accelerated training performance by **250%** (5hrs to 2hrs)
- Accomplished a scalable ML deployment stack that served global customers using Flask, Gunicorn, Nginx, and Docker.

Vassar Labs, Hyderabad, India: *Software Engineer* 01/2016 - 04/2018

- Created an object detection model using Faster-RCNN to detect potholes in a road image with mAP of **0.85**
- Designed data imputation techniques using a linear regression model to fill missing data.
- Developed **30%** of the backend REST APIs for five web & mobile applications using Java, Spring, and MySQL stack

EDUCATION

Arizona State University – School of Computing and Augmented Intelligence, Tempe, AZ Expected Dec 2022

MS in Robotics and Autonomous Systems (Artificial Intelligence) GPA: 3.90/4

Courses: Artificial Intelligence, Reinforcement Learning, Perception in Robotics, Statistical Machine Learning, Intro to Deep Learning

Rajiv Gandhi University of Knowledge Technologies, Nuzvid, India June 2012 - May 2016

Bachelors in Electronics and Communication Engineering GPA : 3.5/4

Achievements: Won First Prize in National Autonomous Robot Competition in Tech Fest at RGUKT in April 2015.

TECHNICAL SKILLS

Programming Languages/Scripts	: Python, Java, C++, MATLAB
Machine Learning, AI	**:** TensorFlow, Keras, PyTorch, OpenCV, Scikit-learn, Pandas, Numpy, MatplotLib, NLTK, Spacy, HuggingFace, Power BI, MLOps, MLFlow, TFX, Pycaret
Domains	**:** Computer Vision, Audio, Natural Language Processing (NLP), Computer Science, Signal Processing, Data Structures & Algorithms
Frameworks/Tools/DevOps	: Flask, SQL, MySQL, Cassandra, BigQuery, AWS, GCP, Vertex AI, Docker, Git, CI/CD

PROJECTS

Students Performance Prediction 03/2022 – Present

- Devised a machine learning system that predicts the student success rate in the course, which assists in taking special interventions if needed.

Fire Detection and alarming using Deep Learning and Edge computing 02/2022 – 04/2022

- Extracted and segmented fire pixels from an image using OpenCV APIs, enabling distinguishable patterns in the pictures.
- Compressed model size by quantization technique and deployed it on RPi3 board.

Autonomous Drone using a monocular camera 01/2022 – 03/2022

- Created an intelligent vision system DJI Tello drone for autonomous navigation with Yolov4 object detection, human body pose estimation, face detection and tracking, object tracking, and collision avoidance functionalities.

Video Audio Anomaly Detection and Debugging (VAADD) using Deep learning 02/2019 – 02/2021

- Built 3DCNN + LSTM networks to detect anomalies in images, video, and audio datasets
- Simulated ~10GB image & audio dataset by generating anomaly patterns and applying augmentation techniques