Venkatarao Rebba

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SUMMARY

A Master student in Robotics and Artificial Intelligence specialization with 5 years of professional experience in deep learning, machine learning, and software development. Built e2e embedded solutions on video and audio domains. Seeking summer internship opportunities to employ my expertise and skills.

EDUCATION

M.S in Robotics and Autonomous Systems (AI) Expected Dec 2022
Arizona State University, Tempe, AZ 3.9 GPA
Related Courses: Artificial Intelligence, Reinforcement Learning, Perception in Robotics, Autonomous Exploration Systems

Bachelors in Electronics and Communication Engineering June 2012 - May 2016
Rajiv Gandhi University of Knowledge Technologies, Nuzvid, AP, India 8.8/10 GPA

TECHNICAL SKILLS

Machine Learning, AI : TensorFlow, Keras, PyTorch, openCV, NLTK, Spacy, Sklearn, Numpy, Pandas, Scipy, Matplotlib, librosa, openAIGym, OpenVINO
Technology domains : Compute Vision, Audio processing, Signal processing, Robotics, Engineering, NLP
Programming, Script Languages : Python, C, C++, Java, HTML, CSS, AngularJS, MATLAB, Shell
Frameworks : ROS, Gazebo, Rviz, Carla
Database, DevOps, Tools : SQL, MySQL, Docker, AWS, git, Jira, ffmpeg, Audacity

PROFESSIONAL EXPERIENCE

AI/Machine Learning Specialist, EdPlus – ASU, Tempe, AZ 02/2022 - Present

- Working on student analytics with the goal of improving their academic performance.

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

- Built AI & embedded solutions to automate system validation process.
- Developed three reliable and seamless deep learning models and two robust signal processing algorithms for validating multimedia content.
- Created Auto ML stack for training and tuning audio model that facilitated to build a model 10x faster
- Optimized data pipeline using parallel processing, reduced overall training time for a model from 5hrs to 2hrs (250%)
- Implemented auto camera calibration system to estimate intrinsic and extrinsic parameters of the camera.
- Simulated ~10GB image & audio dataset by generating anomaly patterns and applying augmentation techniques

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

- Worked in full-stack development for creating three dashboards and two android applications
- Created 20 REST APIs Java and Spring framework by fetching data from the MySQL database using Java.
- Effectively managed data mining, processing, insertion and updates in the database

PROJECTS

DepthSegNet – Monocular Depth Estimation and Semantic Segmentation - Academic Project 10/2021 – 01/2022

- Created a multi-task deep learning model for inferring both depth and segmentation from a single RGB image.

Autonomous Driving Car Using Generative Adversarial Imitation learning (GAIL) – Academic Project 08/2021 – 12/2021

- Developed an autonomous driving agent using inverse reinforcement learning technique called GAIL in OpenAIGym environment. The agent achieved as equal rewards of the expert's rewards and the expert was trained using Proximal Proxy Optimization algorithm.

System test automation using Machine Learning and non-ML techniques – Industrial Project 06/2019 – 12/2020

- Devised 3D-CNN+LSTM models to verify audio and video content for automating system validation
- Developed a complete software cycle to tap input from the audio/video interfaces using recording devices, and communicate through REST APIs to the production server, analyze it using deep learning models & standard algorithms. Designed a robust deployment stack to stand with the load using Flask, Gunicorn, Nginx and Docker stack.

Audio Noise Suppression using Deep learning techniques – Industrial Project 01/2019–05/2019

- Built a deep learning model inspired by Speech Enhancement Generative Adversarial Network (SEGAN) to reduce the background noise that comes out from the audio interfaces of a PC.

Image Anomaly detection using GAN 06/2018 – 12/2018

- Created an anomaly detection model to detect the corruptions frames in a video using Generative Adversarial Network. Achieved F1-score of 0.90.