SIVA RAJ

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SUMMARY:

- Self-driven and data savvy graduate proficient in Internet of things and Machine Learning
- Passionate about delivering meaningful insights to enable better decision making
- Having good knowledge on both theoretical and practical exposure in Artificial Neural Networks (ANN) and Convolutional Neural Networks (CNN)
- Working knowledge on building prediction models using Linear Regression and Logistic Regression Analysis
- Experience in Data Analysis, Data Migration, Data Cleansing, Transformation, Integration, Data Import and Data Export
- Good Hands-on experience working with large datasets and Deep Learning class using Tensor Flow
- Adapt and adhere to industry standards while working with multicultural teams
- Excellent communicator with strong leadership skills and ability to work independently

TECHNICAL SKILLS

- **Machine Learning Frameworks**
  - Tensorflow, keras, scikit-learn, OpenCV, numpy, seaborn, pandas
- **Machine Learning Algorithms & Techniques**
  - Classification, clustering (k-means), SVM, Naive Bayes, K-Nearest Neighbours, KNN, Kernel SVM, Random Forest, Dimension Reduction, Decision Tree, Neural Networks, Bottleneck, Transfer learning, Image classification, Image localization, Object detection
- **Machine Learning Neural network stick**
  - Intel Movidius (Vision processing unit)
- **IoT communication protocols**
  - MQTT(publish/subscribe), AMQP (publish/subscribe) (Azure Event hub)
- **IoT Gateways and devices**
  - Raspberry Pi/zero, Beaglebone, Banana Pi, Orange Pi, Arduino family boards
- **IoT tracking devices**
  - RFID (Passive and Active), UWB Beacons, A-GPS
- **IoT sensors**
  - Pressure, Temperature, Motion, Proximity, Chemical, water, Gas, Smoke, IR sensor, Accelerometer
- **PCB Board design**
- **Robotics**
- **Web Scraping**

PROGRAMMING & SCRIPTING LANGUAGES

- Python, Node.js, Embedded C, SQL, HTML, CSS, JS, jQuery

WEB FRAMEWORK

- Flask, Flask-socketIo, Express Js

PLATFORMS

- **IBM Bluemix**
  - Watson IoT, Node-Red, IBM Cloud functions, Cloudant, Bluemix object storage, App service (Python and Node.js), cognitive services
- **Amazon Web Services**
  - AWS IoT, Lambda functions, Dynamodb, Amazon s3, Amazon SageMaker
- **Microsoft Azure**
  - Azure IoT, Azure App service (Python & Node.js), MS-SQL, Azure Functions, Azure Custom vision.ai
- **SAP**
  - SAP Hana IoT

PROJECTS

- **FACE AND EMOTION DETECTION**
  - Build a CNN model by using Transfer learning model(Pre-trained) Faster-RCNN, which get more than 80% accuracy.
  - Total Loss value reduced under 0.008 with 25k training steps.

- **Real-time Object detection**
  - Build a model with SSDLite (single short detection) pre-trained model with up to 20 different classes. It detects very fast when compared to RCNN models. Implemented multi-threading for both prediction and web camera threads, to minimize camera lag and able to get more than 1 FPS in Raspberry Pi

- **DONKEY CAR**
  - Worked on self-driving car POC, implemented by using keras with backend Tensorflow and OpenCV module. Able to collect images on track and trained the model. So, that it can take throttle and steering angles automatically

- **CAR DAMAGE PREDICTION**
  - Collected nearly 10k damaged car images and trained the model to detect whether it damage or not and also It will show bounding box on the specific damaged part.

- **Container Tracking in Yard**
  - Implemented end-to-end IoT project for coca cola bottling company. We attached beacon (Estimote Beacons) to every container So, that it will exhibit low energy Bluetooth frequency with distance and Lat/Long parameters. we designed one Xamarin iOS application to listen to the data and publish data to Azure IoT platform. There azure serverless functions triggered by IoT data and visualize data on the dashboard which is built on top of Angularjs

- **Robotic picking arm with machine learning**
  - We build one CNN model on top of TensorFlow to detect objects. Once it detects required object arm robot pic specific object by applying Electromagnetic Induction

- **Water tank level monitoring and controlling solenoid valve by ML Prediction data**
  - We captured some right amount of data of 10K records and build ML model on top of the scikit-learn module to control Motor valve (Solenoid valve)

WORK EXPERIENCE

- **IoT and Machine Learning Developer** **2 Years 4 months**
  - I am from the R&D department and our main motto is to work on new trending technologies related to IoT and Machine Learning.
  - Has done many POC to clients and received appreciation emails for the quality of delivering work and code architecting
  - Participated in IoT and ML code hackathons and won some prizes

EDUCATION

- **Bachelor of Engineering, Electronics and Communication Engineering** **2012-2016**

  - Godavari Institute of Engineering & technology, Rajahmundry,
    Andhra Pradesh, India