PRABHAKAR SIVANESAN

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CAREER OBJECTIVE

Aspiring for a challenging career in an organization which provides an opportunity for continuous learning and implementation of newer technologies to cater to the varying industry needs and which in turn makes a positive difference in personal and Organizational growth.

PROFESSIONAL SUMMARY:

- 4+ years of experience in the field of Research, Innovation and Development.
- Expertise in Computer vision and Deep Learning / Machine Learning frameworks.
- Proficient in building deep learning models for images, videos and point cloud data.
- Strong knowledge on deploying Computer vision applications on mobile and edge devices.
- Excellent work experience in application development using Python, C/C++, Java and Android.
- Hands on experience in building Google actions for Google assistant.
- Good understanding of Algorithms, Data Structures and Design Patterns.

PROFESSIONAL EXPERIENCE

- Deep Learning Engineer in Tata Consultancy Services - Research and Innovation from July 2015 to present.

TECHNICAL EXPERTISE:

Programming Languages	: Python, C++, Java, Android, Arduino, MicroPython
Deep Learning frameworks	: Tensorflow, Keras, PyTorch
Computer Vision Frameworks	: OpenCV, Matlab
Android Frameworks	:ARCore, Retrofit, Google Mlkit, Firebase, Tensorflow lite
Cloud Infrastructure	: Azure, AWS, Google Cloud Platform, Heroku
Database	: MySQL, MongoDB
Version Control	: Git, Svm
IDE	: Spyder, Pycharm, Eclipse, Android Studio, Unity, Sublime text
Edge devices	: Nvidia Jetson TX2 and Nano, Raspberry pi, Snapdragon Dragonboard
Operating Systems	: Windows, Linux, Raspbian, Android, Android Things

COURSES AND CERTIFICATIONS:

- Deep Learning Nanodegree (in progress)
- Introduction to deep learning using PyTorch
- Machine Learning by Andrew Ng
- Tensorflow from Basic to Mastery
- Oracle Certified SE6 Java Professional

ACHIEVEMENTS

- Recipient of Facebook developer circle scholarship.
- "Innovation Super Star" award for creating a cutting edge solution.
- "Innovation Pride" award for winning a hackathon – CHINNA.
- "Best Innovation" award in a hackathon conducted by SAS airlines.
- "On the Spot" award for creating a high impact solution on a short notice.
- "CLP Faculty" award for successfully conducting workshop on various technology.
- "Champion of ILP" award for outstanding performance during Initial training programme.

PROJECT DETAILS

Project   : Bay Management
Environment   : Python, Tensorflow, OpenCV, Flask, Android and Firebase Cloud Messaging
Description:

The objective of this project is to effectively manage the bay area inside a parcel sorting industry. Incoming trucks and parcel vans to be recognized and automatically route it to the nearby relevant drop-off area. And also alert the ground staff to enforce the work in that drop-off area. The activity at each drop-off area is closely monitored for any anomaly.

Project Responsibilities:

- Create a model to detect license plate and recognise the license number to track the in and out time of the truck.
- Create an activity recognition model to track and recognise the activity of each truck at the bay area.
- Create client applications based on Actor model (Thespian) which consumes incoming video feed from 30+ cameras and run inference on the deep learning models.
- Build API endpoints using Flask server to process the features and anomaly data from the client application.

Project   : Railroad Inspection
Environment   : Python, Tensorflow, Keras and OpenCV
Description:

The objective of this project is to inspect and monitor the railroad installed inside a steel manufacturing unit. A mission planned drone attached with a camera hovers over the railroads and relays the camera's real time feed to the server, where the machine learning algorithm analysis the health of the railroad and notify if any anomaly recognised.

Project Responsibilities:

- To create a semantic segmentation model which segments Sleepers, Ballast and Track.
- To create an object detection model to detect fasteners and screws are in the place on the tracks.
- Develop an algorithm to detect cracks and rust formation on the track using thermal image.
- Analyse the intensity of the slit and cracks on tracks.

Project   : Congestion Analysis on conveyor belt and chutes
Environment   : Python, PyTorch, Keras, OpenCV, AWS Simple notification service
Description:

The objective of the project is to predict the congestion on the conveyor belt and prevent it from happening in a parcel sorting facility. This problem addresses the time lost due to inactivity of the conveyor, man power required to clear those congestion and prevent the parcel from getting damaged.

Project Responsibilities:

- Identify the dimension of the package using Stereo Camera.
- Create a computer vision model to identify the congestion on the chutes and localize it.
- Algorithm to monitor the congestion and avoid further jam on conveyor belt.
- Create a computer vision model to identify the fill index on conveyor belt to prevent it from overflowing or causing congestion.
- Create a procedure to send corresponding command to the conveyor control centre with respect to the congestion probability.

EDUCATIONAL QUALIFICATION:

- BE, Computer Science – Sri Sairam Engineering College 2011 -2015

Project   **:** Hand Gesture Recognition
Environment   **:** C++, OpenCV, Haar and Cascade classifier

Description:

The objective of this project is to help visual and hearing impaired people to effectively communicate with each other and normal people who do not know sign language. The signs communicated by the impaired people are captured by a web camera and feed into the machine learning algorithm which convert that sign language into text and voice output.

Project Responsibilities:

- Had to collect sign language actions from different people and label them
- Created a cascade classifier to detect hand gestures
- The actions are then fed into an algorithm to recognize the word.
- Created a text to voice algorithm to convert the given action into real time voice output.