MAYUR PATEL

MACHINE LEARNING ENGINEER

PROFILE

CONTACT DETAILS

Maninagar ,Ahmedabad,
Gujarat ,India
(+91) 740-558-0347
mayurpatel2992@gmail.com

AREA OF INTEREST

- Artificial Intelligence
- Computer Vision
- Edge Computing
- Data Science
- Embedded System

STRENGTH

- Hardworking, Honest, Willingness to learn, Ability to cope up with the changing environment.
- Problem solving, Communication, Time management, Adaptability, Teamwork.

SKILLS

- **Languages** : Python-(libraries like OS, Sys, Math, Time, Json, Lxml, Flask, Threading, Pandas, Scikit-learn, Scipy, Numpy, Tensorflow, OpenCV), C.
- **Tools** : Spyder, GIT, Pycharm, Jupyter-Notebook,Google-colab,OrangeCanvas, LabelImg.
- **Frameworks**:Darknet, Tensorflow API, Darkflow, Hadoop(HDFS and Spark)
- **WebTechnologies** : HTML, CSS, JavaScript.
- **Database** : MySQL
- **Operating Systems** : Linux and Windows.

EXPERIENCE

MACHINE LEARNING ENGINEER

Company : SNDK Corp (July, 2020) – till now

- Responsible for developing Machine learning/Deep learning algorithms and integrating with the existing product of firm.
- Implement Web Applications using frameworks like Flask in Python.
- Implement a APIs on AWS cloud and integration with the local systems.
- Hands-on experience with different AWS Machine Learning services such as Textract, Transcribe, Rekognition, Sagemaker. Other AWS services like Lambda and EC2 for compute, AWS storage service S3, AWS cloudwatch, AWS API Gateway, AWS SNS and SQS for notification.
- Hands-on experience with deployment of product on embedded device (Jetson nano) from scratch.
- Good proficiency with linux environment, bash scripting, FFMPEG , Cronjob.

TRAINEE EMBEDDED ENGINEER

*Company : **PerfectVIPs** (June, 2019)-(July, 2020)*

- At PerfectVIPs mainly responsible for developing machine learning/Deep learning algorithms.
- Implement pipelines and Deploy end-to-end products on cloud or edge.
- Research, Develop, and Optimise various computer vision algorithms.
- Development of various automation scripts using python.
- Hands-on experience with different embedded boards such as Jetson Nano,Raspberry Pi.
- Good work experience in DL framework Darknet, Pytorch, Darkflow(YOLO), keras(Resnet, VGG16, Mobilenet, Inception etc)and Tensorflow object detection API(SSD).

EDUCATIONAL GRADES

M.Tech.	Dharmsinh Desai University, Computer Engineering, Year 2020	7.03 CPI
B.E.	Gandhinagar Institute of Technology, Information Technology, Year 2018	7.67 CGPA
Diploma	Institute of diploma studies Nirma University, Information Technology, Year 2015	8.05 CGPA

OTHER CURRICULUM ACTIVITIES

• **Udacity** nanodegree Computer Vision.

• **Udemy** course on A Complete Guide on TensorFlow 2.0 using Keras API, Python A-Z™: Python For Data Science With Real Exercises!, Deep Learning A-Z™: Hands-On Artificial Neural Networks, Machine Learning A-Z™: Hands-On Python & R In Data Science, System Programming with linux.

• **DataScience356** courses on The Python Programmer Bootcamp, Deep Learning With Tensorflow, SQL, Git and Github.

PROJECT WORK SUMMARY

1) SECURITY SURVEILLANCE SYSTEM

- **Tools & Technologies :** Python, Numpy, Darknet, TensorRT, OpenCV, CUDA
- **Platform & OS** : Ubuntu, Jetson nano.
- The goal is to provide end to end solution for person detection and tracking using video analysis and machine learning techniques.
- The system process the 8 different camera streams real time and detects the person from it.
- The system notifies the user as if the person detected from unauthorised area.

ROLES & RESPONSIBILITIES

- Involved in preparing dataset to train the model. Tried with available MS COCO dataset, Google OPENIMAGE dataset. Also collected from different CCTV streams.
- Used different versions of YOLO, to achieve better accuracy and optimize with TensorRT.
- Train the YOLO-SPP with different parameters and observed the results, selected the best model.
- Developed automation python script which loads the trained model and detect object from 8 streams and sends the notification to the android or ios app.

2) OCR FOR MAIL AND CHAT APP ATTACHMENTS

- **Tools & Technologies** : Python, AWS Textract, AWS Transcribe, AWS EC2, AWS lambda, Pillow, Flask, Requests, Elastic Search
- **Platform & OS** : Ubuntu Server, AWS EC2
- The main objective focuses on extracting text from images, documents, audio & video files and also extract the tables and KEY/VALUE pairs from it.
- The extracted text pushed into elastic search db with attachment.
- End user able to search the every attachment using its text through search engine.

ROLES & RESPONSIBILITIES

- Implement OCR with different cloud platforms like AWS, Cloudmersive, GCP and choose from the best.
- Implement the scripts to use AWS textract api and insert data into elastic search on serverless architecture lambda and AWS EC2 for MAIL System.
- Developed automation python script which converts the unsupported image file like HEIC to JPEG, and unsupported audio file like m4a to mp3.
- Developed a API on EC2 which accepts the attachment and return the text data to client for CHAT app.

3) VIDEO ANALYTICS FOR CAR

- **Tools & Technologies :** Python, Numpy, Tensorflow, Darkflow, Darknet, ONNX, TensorRT, OpenCV
- **Platform & OS** : Ubuntu, Jetson nano.
- The goal is to provide end to end solution for tracking of car using video analysis and machine learning techniques.
- The system can determine car trajectory, whether the car crossed the lane lines or not, and car settled in the predefined lane box or not.
- The system gives the result as trajectory of car captured from fixed position camera.

ROLES & RESPONSIBILITIES

- Involved in preparing dataset to train the model and prepared a python script to increase existing dataset by image augmentation (flipping, color enhancement, PCA, zooming, shearing).
- Modified Architecture of Mobile-SSDv2 and tiny YOLO, to optimize with TensorRT.
- Train the Mobile-SSDv2 with different parameters and observed the results, selected the best model.
- Developed automation python script which loads the trained model and detect object from live stream and sends the availability of object and center point of object in thread to the GUI server.

4) OBJECT DETECTION AND RECOGNITION

- **Tools & Technologies** : Python, Numpy, Tensorflow, OpenCV, Keras, Darkflow, Pytorch
- **Platform & OS** : Ubuntu
- The main objective focuses on object and voice recognition to detect object instances of semantic objects of a certain class(such as lane, potholes, traffic sign, humans) in digital images and videos so that it can be useful in real time to be deployed on edge device.

ROLES & RESPONSIBILITIES

- Involved in collecting datasets for 43 different classes for that developed automation python script to download images from google images.
- Train a tiny YOLO model with different parameters and observed the results, selected the best model.
- Integration of object and voice recognition instances using Deep Learning Framework.
- Developed a model which can detect traffic sign and pothole using Darkflow, Keras Framework and Tensorflow object detection API.

TRAINING DETAILS

JAVA DEVELOPER

- Training for web application at **Way2webPvtLtd**.

SOFTWARE DEVELOPER

- Training for web based application at **RoyalInfotech**.

DECLARATION

I hereby declare that the above information's are true to best of my knowledge.

DATE:

(MAYUR PATEL)