Bharanidharan Thirumaran

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Profile

I am able to solve real-life business problem with modern machine learning and data science techniques. I am a creative person who always think for model improvement. I am able to adapt new changes and i have a good communication skills to know how to keep other persons engaged. I wish to learn new technologies and skills to full fill the organization goals. I have good proficient in predictive modelling, data preprocessing and Machine learning algorithms. I am able to built complex architectures and good at scripting languages.

Professional Experience

DMI Innovations (Digital Management LLC) 11.2021 – present
Chennai

Projects:

1.DFW(Object Detection):
*In this object detection having 3 classes (Sinkhole, pig, Birds) model will detect these objects in airport runway.
*For data collection part have to analyse data from various datasets, then will start collecting data from various websites using webscraping (Python automation script using selenium library).
*Then have to start segregating data depends upon class wise, after that will do data preprocessing steps like data cleaning,duplicate removal Data Labelling, Data Balancing and dealing with missing values using Python scripts.
*In data leabelling have to annotate data using labelimg tool and extract annotated output in XML format.
*In Model training part used Tensorflow and SSD Mobilenet V2 architecture with 100 epochs,it will give pth file as output and gives 80% accuracy for all classes.
SSD Mobilenet V2 -single convolution network that learns to predict bounding box locations and classify these locations in one pass.
*After model training we have intergrated this model into API and deployment part.

2.Tesla Accident Detection (Video Classification):
*In this video classification having 3 classes (Tesla fault, Non tesla fault, Non accident) model will identify whose fault in this accident.
* Data collection part We have used to collect datas from own tesla website and various videos from youtube as well. For tesla fault data we used to extract datas from video games for balancing data.
*In data prepration part we will do data cleaning, data balancing and equal length of data cropping for all videos Then will segregate datas into each class.
* In model training we used Deep Learning technologies such as Lstm and Convolutional Neural Network(CNN) architecture with good number of epochs, it will give 85% accuracy for all classes.

3. Liability Prediction (Text Classification):
*This text classification having 3 classes (Accepted, Denied, Undetermined) model will predict classes depends upon the tokens of text.
*Data wise Collected datas from AWS cloud storage using limits.
*In model training we have used Keras,Sklearn libraries and LSTM architecture for predict the tokens of the text using tokenizer.
*Model will give 90% accuracy on training and give 85% accuracy for benchmark test data.

4.Liability Prediction - sentiment Analysis (Text Classification):
*This text classification having 2 classes (Accepted, Denied) using NLP (Natural Language Processing) model will predict classes depends upon the text ratings.
* Data wise Collected datas from AWS cloud storage using limits.
*In Sentiment Analysis used Bert(Bidirectional Encoder Representations from Transformers) classification and Hugging face transformers forunderstand the ratings of text language and give the predictions for text.
*Model will give 80% accuracy for test data.

5. Damage Detection for GM Motors (Object Detection):
* In this Object detection having 5 classes (Scratch, Scuff, Dent, Chip, Broken part) model will detect these objects in damaged cars.
* For Data collection part we generate datas from Various Datasets and websites from internet source, almost we have collected 15K datas for training and done with data augmentation for balancing datasets.
* Data Prepration Side we have struggled a lot to annotating datas for these 5 classes. For data annotation we used VGG Image Annotator tool for polygon shaped annotation and got output as csv and json format.
*Data preprocessing steps will be more complex for Data segregation, cleaning datas, Annotation review for all 15k images, Duplicate removal and Balancing datasets with respect to each class.
*In Model Training part we used Detectron 2 for getting instance sgementation output for object detction.
* Model will give 85% accuracy for bencark test datas.

6. AI Interior Classification (Object detection):
* In this object detection model having 9 classes (Cargo, Centerconsole, Dashboard, Odometer, Glove box, Interior, Rear interior, Driver door, Engine) model will detect these classes in car interior.
* For Data collection part we used to collect datas from various datasets and Webscraping(python automation script for collecting datas using selenium library) for carfax website.
*Data labelling side we have used VGG Image Annotator for annotating the images in polygon shape and got output as csv and json.
*Data preprocessing steps we used data cleaning, duplicate removal, balancing data for good accuracy.
* Model will train with good number of images and used mobilnet v2 ssd lite architecture. It will give 90% accuracy for all classes.

7. Damage classification (Image Classification):
* In this image classification model having 2 classes (Damage car and Non damage car) model will classify these two classes.
*Data collection part we used to collect datas from Various datasets from internet source.
*Data Preprocessing side used duplicate removal, data cleaning and segregating the datas with respect to each class.
* In model training part we used 2 architectures. First model trained with CNN architecture it will give 85% accuracy and second model is trained with Mobilenet v2 architecture it will give 90% accuracy for test datas.

Skills

Programming Language - Python, Sql, C, Microsoft Azure, Azure Devops,
Artificial Intelligence, Machine Learning, Deep Learning, Natural Language Processing,
Data Analysis, Data Collection, Data Pipeline

Education

B.E - Mechanical Engineering 06.2017 – 07.2021
St.Joseph's Institute Of Technology Chennai
CGPA - 8.1

12th Standard 05.2016 – 04.2017
Silver Jubilee Matric Higher Secondary School Mayiladuthurai
Percentage - 89.4

10th Standard 02.2014 – 03.2015
, *Raj Matric Higher Secondary School* Mayiladuthurai
Percentage - 92.4

Certificates

Cambridge English Level 1 Certificate in ESOL International
(Business Vantage)

Python
Level 1

Languages

English, Tamil

Interests

- Cricket
- Badminton
- Music
- AI Technolgy

Declaration

I hereby declare that the above-mentioned information is correct up to my knowledge and i bear the responsibility for the correctness of the above-mentioned particulars.

Bharanidharan Thirumaran