**LICENSE PLATE IDENTIFCATION**

Even with the installation of RFID FASTAG on cars, movement of vehicles in TOLL lanes is not Fast at all. Fuel wastage and waiting time at TOLL queues is still a challenge

***Understanding of the problem***

With Advancement of Technology and greater exigency of seeking development ,time is playing a crucial role in people’s life . In a consensus of a quinquennial extending from 2016-2020 Compound Annual Growth Rate by Indian Brand Equity Foundation(IBEF) Domestic automobiles production increased at 2.36% Compound Annual Growth Rate Overall, domestic automobiles sales increased at 1.29% Compound Annual Growth Rate with 21.55 million vehicles being sold in FY20.

***Reason of Choosing the problem***

The stride towards the automation in Ministry for Road, Transport & Highways in India has seen an ascend in past few years but it is not proportional to the ever growing demand .Moreover the system lacks efficiency which fitters away people’s time. According to bullEye Technologies ,India could save up to Rs 12,000 crore every year in terms of fuel and man-hours with the switch to 100% FASTag-based toll collection on national highways. Another area of utilisation of lpi can be smoothening Interceptor police operations

**MOST CHALLENGING ASPECT**

* ***Lack of data***

We still don’t have the amount of data required to involve AI and Machine learning efficiently into this domain

* ***No standardised form of numberplate system.***

India has regional languages those affect the numberplates over the font in which they might be created recognising such a vast language pool is also a challenging aspect

**APPROACH**

Since efficiency of human and manual existing technology is far meagre than Artificial Intelligence we plan to utilise Machine Learning algorithms to implement this. First of all we will collect the data followed by cleaning the data in order to make it relevant according to our needs that in-turn would be used to train our object detection model to detect the object which here is a License plate .Lastly we will use easy OCR to extract the text file to perform the operations over the collected data.

APPROACH DIAGRAM

**1.**Cloning Baseline Code.

**2.**Creating a Virtual Environment.

**3.**Installing Dependencies

**4.**Installing Tensor flow

**5.**Object Detection Cloning Pre-Trained Models

**1.**Installing Tensor flow Object Detection

**2.**Cloning Pre-Trained Models

PART - 1

**1.**Data Cloning Images from Kaggle

**2.**Creating a Training and Testing Partition

PART - 2

**1.**Training and Updating the Label Map

**2.**Creating TF Records

**3.**Updating Transfer Learning Config

**4.**Training the Model

**5.**Detecting Plates

PART - 3

PART - 4

**PLATFORM** / **CODING LANGUAGE** / **FRAMEWORK**

* Jupyter
* Python
* OCR (Optical character recognition) for text extraction
* Tensor Flow for object detection
* Kaggle for image cloning
* CUDA and cuDNN
* Open Cv etc.

***\*Note : Some other choices of algorithm and frameworks might be dynamic that depends upon the exact approach and requirements.***

**DATABASE**

* Mongo Database

**FORTNIGHTLY TARGETS**

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**PREVIOUS PROJECTS UNDERTAKEN**

**Multibank Account Passbook**

**Description:** This project is aimed to create a bank passbook that can be used in multiple banks for transaction.

**Learning Outcomes:** UI designing in python, Basics of speech recognition in python and database creating.

**TEAM STRENGTHS**

We are studying together in the same university under same department from very beginning therefore we share a higher compatibility with each other .Moreover we have done projects together that makes us prepared for any kind of situation that we may get into during the successful completion of the project we are well acquainted in python programming and have already done a project in python together.

**TEAM ACHIEVEMENTS**

We have created a project in python that made us win Autumn Hacks Hackathon 2020. During the project we learnt speech recognition using python ,Tkinter based UI designs and handling offline SQL database using python.

**PERSONAL MOTIVATION**

We always wanted to quench some real life problem with our solutions given such a big opportunity to fabricate a solution on the recent technology in the market gives us a drive to successfully complete this project .