DETECTING TRAFFIC VIOLATION BY TWO WHEELER RIDERS USING ML

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OUTLINE

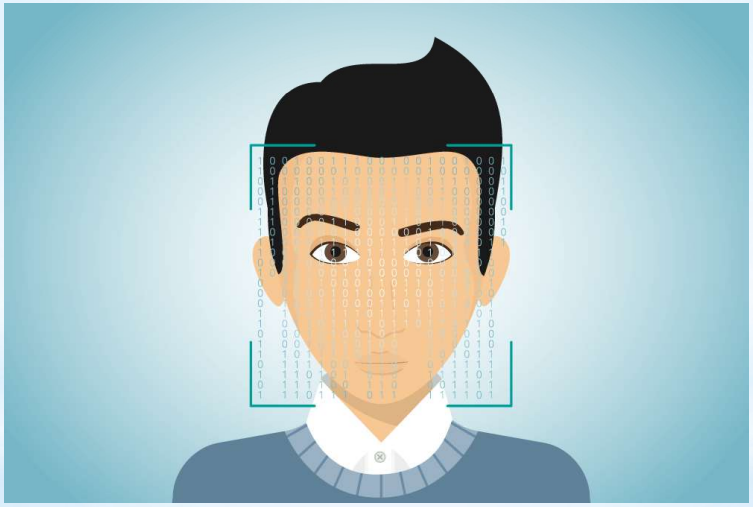
- Problem Statement
- Objective
- Methodology
- Technologies to be used
- Future Aspects

PROBLEM STATEMENT

- Two-wheelers involved in 95% road accidents.
- There were a total of 2,113 cases of accidents reported in Trivandrum in 2017, out of which 2054 involved two-wheelers. As many as 55 persons lost lives in these accidents too.
- 377 people die every day, equivalent to a jumbo jet crashing every day.

OBJECTIVE

Our aim is to penalize people riding their two wheelers without helmets using Machine Learning.



METHODOLOGY

- Real time image capturing of road traffic and processing to check whether the rider and pillion rider are wearing helmet or not.
- If either the rider or the pillion rider found not wearing the helmet then the real time decision making process starts.
- After finding the riders not wearing the helmets their vehicle number plate will be processed.

METHODOLOGY (cntd..)

- After extracting the vehicle registration number, a challan will be generated against respective vehicle and all the details of the challan will be sent via E-mail and SMS to the concerned person.
- Now its upto the owner whether he/she wants to pay the fine via our mobile app or via our website or by visiting the nearest RTO.

TECHNOLOGIES TO BE USED

- CCTV Camera
- OpenCV Library OR Convolutional Neural Networks (CNN)
- Optical Character Recognition (OCR)
- Android studio for application designing
- Java runtime environment of web
- Tomcat web server
- SQL Database

ABOUT TECHNOLOGIES

1. OpenCV

- OpenCV was started at Intel in 1999
- OpenCV is written in C++.
- OpenCV supports a lot of algorithms related to Machine Learning and it is expanding day-by-day.
- Currently OpenCV supports a wide variety of programming languages like C++, Python, Java etc and is available on different platforms including Windows, Linux, OS X, Android, iOS etc

2. OCR

Optical Character Recognition is
the mechanical or electronic conversion
of images of typed, handwritten or printed text into machine-encoded text, whether from a scanned document, a photo of a document, a scene-photo.

3. Android Studio

It is the IntelliJ based IDE, for building android applications. Its environment supports languages xml, java.

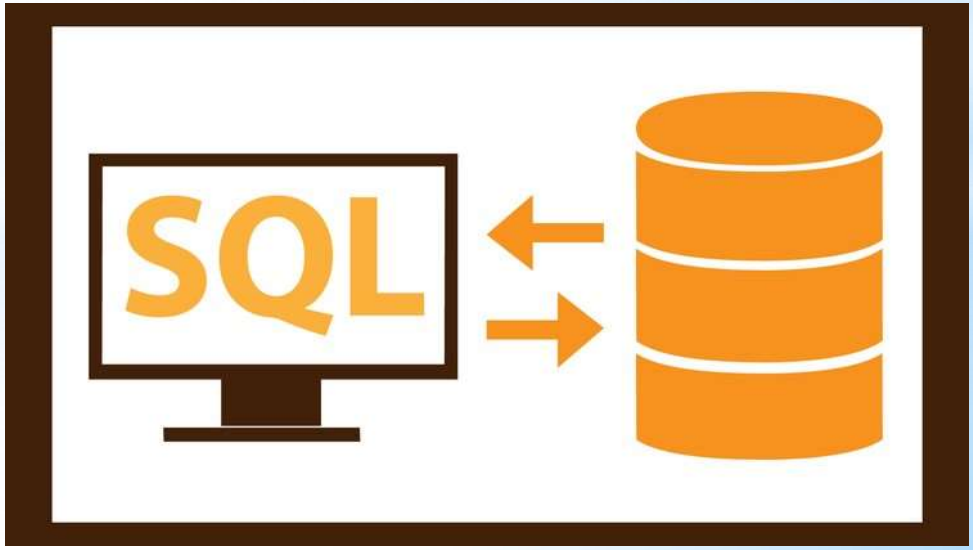
4. Java

- It’s an object oriented programming language.
- Used for scripting android application, Website & API’s.

5. SQL Database

- **SQL (Structured Query Language)**is a query language used for managing data held in a Relational database management system (RDBMS).

- Used for storing user & vehicle data.



Our Progress

- Detecting 2-wheeler & rider
- Detecting Rider with or without helmet

-
```
if(Ride is Without Helmet)
        DetectNumberPlate();
else
        continue;
endif;
```

Machine's Training

FUTURE ASPECTS

- After successful completion of our demo project, we will make it possible for every state RTO to adopt this method.
- Road accidents involving two-wheelers can be controlled to a great extent.
- Even the traffic cops generating false challans for bribe can be caught by this method.
- Giving Sikh's as an exceptional case for this project.

Alert Today.... Alive Tomorrow

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