Idea/Approach Details

Technology Bucket : Security & Surveillance   Category   :   Software

Company Name   : Infosys   Problem Code : IN1

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Solution Proposed:

People in India are very careless regarding following traffic rules which lead to a lot of road accidents every year resulting in a large number of casualties. India roads are thus viewed as graveyards. Common practices include riding two-wheelers without a helmet, jumping off red lights, overtaking from the wrong side etc. Such activities often go unnoticed due to manual monitoring.

Thus to curb such malpractices and building more safer roads we suggest the following model:

- Use of object detection algorithms such as YOLO to capture offenders such as ones without helmets by classifying the image from CCTV, jumping off red lights etc. and noting their vehicle registration numbers and imposing hefty fines.

- Counting no. of vehicles via object detection and imposing machine learning to control traffic lights rather than having static timer based ones. Also, maintain a record of traffic on cloud servers.

- Any vehicle can be searched in database of RTO once their vehicle no. is captured using CCTV cameras. This will in turn help in catching runaway offenders.

Technology Stack:

- Google Maps API
- SQL and PHP for database management
- Cloud Server
- Python and some of its libraries;

       1. Pandas, NumPy.

       2. TensorFlow

       3. Matplotlib

       4. Scikit Learn

       5. Django

Use Case Diagram
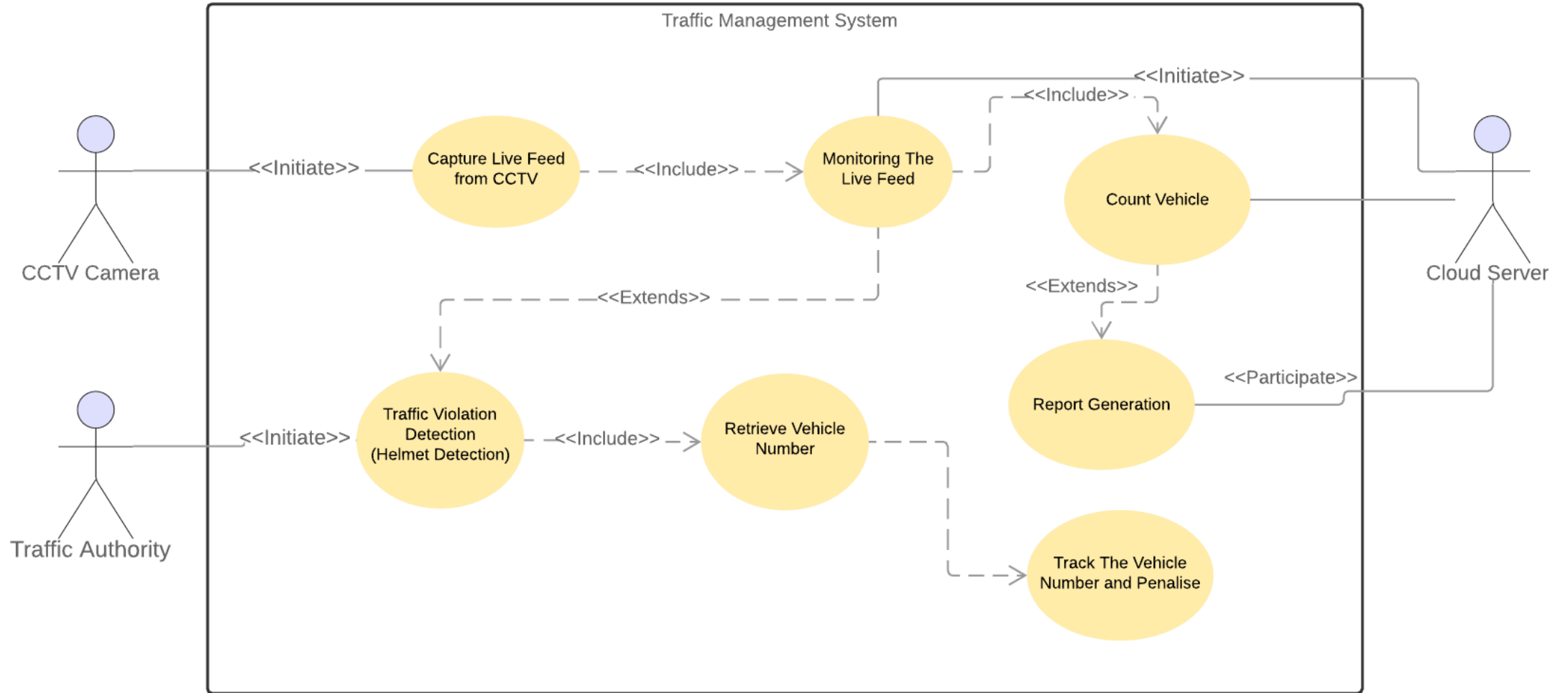
Dependencies / Show Stopper

- CCTV Cameras at intersections and other major points.

- Centralised Cloud Server.

- Labelled Dataset in the form of images of bikers who are wearing helmets and who are not.

- Database of vehicle registrations from RTO.

- Speed Detection Cameras for capturing over speeding vehicles.