Photo - Illegal Parking in India

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Submission by **Team Fortius**

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Problem Statement :

Create an affordable solution of a mobile application and a camera system through image processing to identify and monitor entering and leaving a residential society passing through the entry/exit gate.

Vision :

To minimize the impending problem of illegal vehicle parking and to tackle problem of vehicle thefts and security concerns.

Idea :

The central motive is to create a camera-mobile app integrated system, in which the camera continuously feeds data to the app and the app does the work of vehicle detection and vehicle recognition through the license number.

Note here that the work is divided into two parts:

- Detection ,
- Identification.

Detection, in this context, takes advantage of Image Processing and here it means detecting the license number from the number plates.

IDENTIFICATION :

For identification we need to maintain a database of the vehicles and their corresponding registration numbers, present in the society. This work is to be carried out manually and a dedicated database will be created for members of the society. The license plates thus stored will be used for identification. The detected license will then be scanned in the database.

CASES :

- First case : If the detected license number exists in the database :

  A notification will be sent to the vehicle's owner .

- Second Case : If the detected license number does not exist in the database :

  A notification regarding illegal parking will be sent to all members of the society.

SUPPLEMENTARY IDEA :

In order to enhance further security , the app could also use the features of face detection and face recognition, through face landmarks .

TECHNOLOGIES USED :

- Android Studio
- Database, preferable Firebase
- OpenALDR for android - subset of the OpenCV Project (for license plate detection)
- Optional (For face recognition) :

  -> Google Mobile Vision Library (for face detection)

  -> OpenCV Library (for face recognition)

Sample Workflow