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| **PROJECT OVERVIEW** | **Project Name:**  **AUTONOMOUS DRIVING OBJECT DETECTION AND CLASSIFICATION** | **Project Manager:**  **SAURABH TAKLE** |

**STATEMENT (POS)**

**Problem/Opportunity/Research Question(s):**

Can autonomous cars classify the different objects on the road to determine the action to be taken?

**Dataset:**

The dataset consists of images obtained from a front facing camera attached to a car. The car was driven around Hyderabad, Bengaluru (Bangalore) cities and their outskirts. The images are mostly of 1080p resolution, but there are also some images with 720p and other resolutions. The dataset is divided into train, validation and test splits as follows:

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| Type | Images |
| Full | 46,588 |
| Train | 31,569 |
| Val | 10,225 |
| Test | 4,794 |

**Goal:**

To identify different objects on the road like bicycle, bus, traffic signals, train, different types of vehicles (car, motorcycle, truck), roadside signs, animals, and person.

Represent different objects mentioned above using different colors.

**Objectives:**

Using image generator to flip, transform and rotate images while training dataset depending on the performance of model based on original dataset.

Checking for duplicate/repeated images to avoid data leakage problems.

Developing models with high accuracy to accurately classify different objects on the road.

**Success Criteria:**

Model achieves high accuracy on the detection dataset.

Identifying different objects and classifying objects using colors as defined.

Opportunity to present my work in a journal.

**Assumptions, Risks, Obstacles:**

High volumeof data requires high graphical memory. So, if my 6GB of graphical memory isn’t google collab should work.

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| **Prepared By** | **Date** | **Approved By** | **Date** |
| SAURABH TAKLE | Feb 14 2023 |  |  |