Introduction

- Driverless car are autonomous driving system.
- These autonomous systems are less error prone, as they are bound to rules, and time bound.
- Faster in processing than human, to perform actions.
- Major Accidents due to human errors, and among those accidents, major are caused due to
  - Not following proper lane
  - Not observing vehicles opposite or behind
- Which also can aid in reducing traffic.

Who are working on?

UBER

And more...

Features

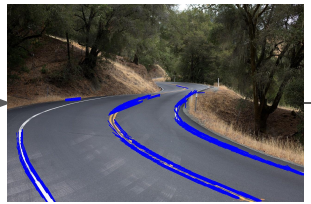
- Identifying lanes
- Identifying if user is changing lanes, then warning the user.

Tool

- Python
- Opencv
- Numpy

Architecture

Identify Lane



Identify Lane Change

Lane Changed
Yes / No

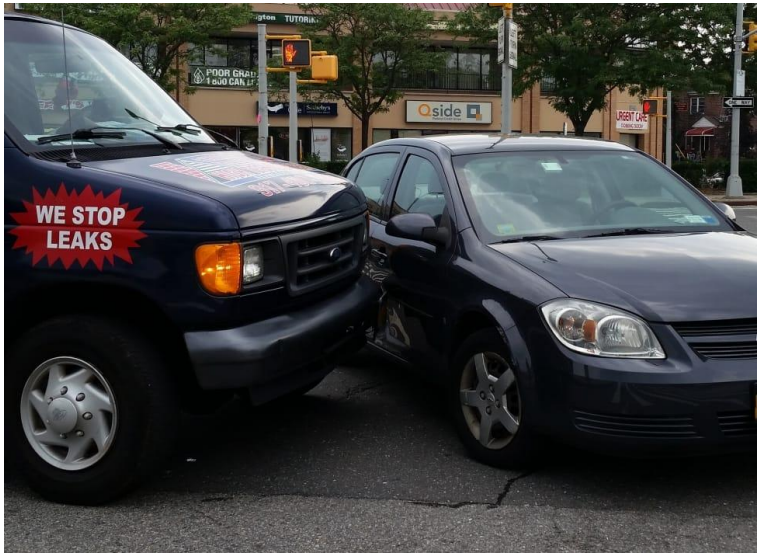
Proposed Models

Filters used for Lane Detection

- Blur - Median Blur
- Canny Edge Detection
- Morphology
- Hough Transformation

Future Work

- Obstacle detection
- Out of road identification



Driverless Car

Lane Change Detection System

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Deepak Rao
Asst. Professor

By:
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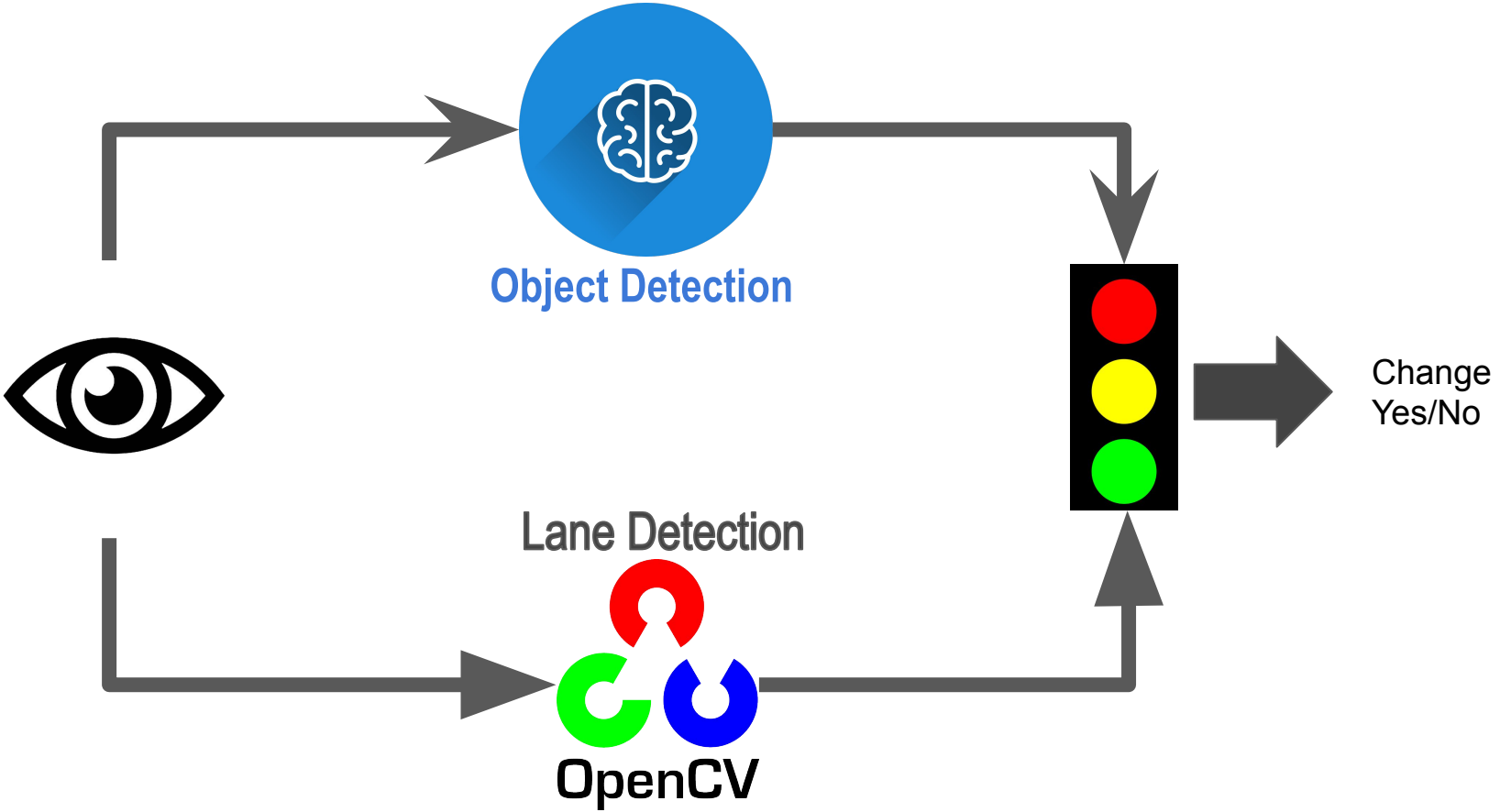
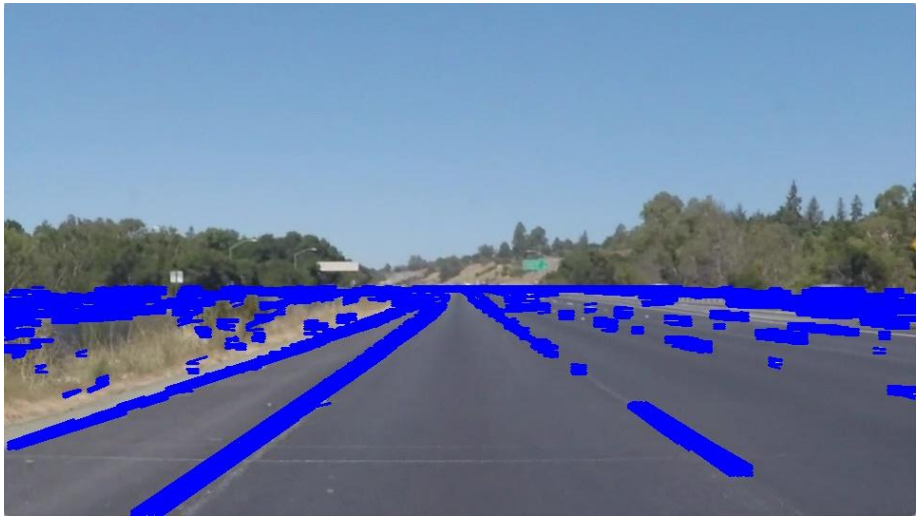
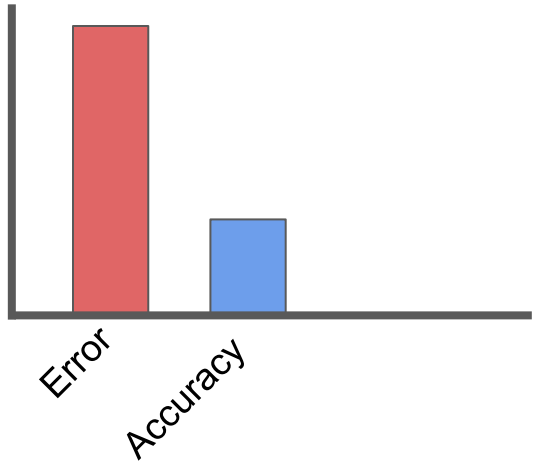
Overview



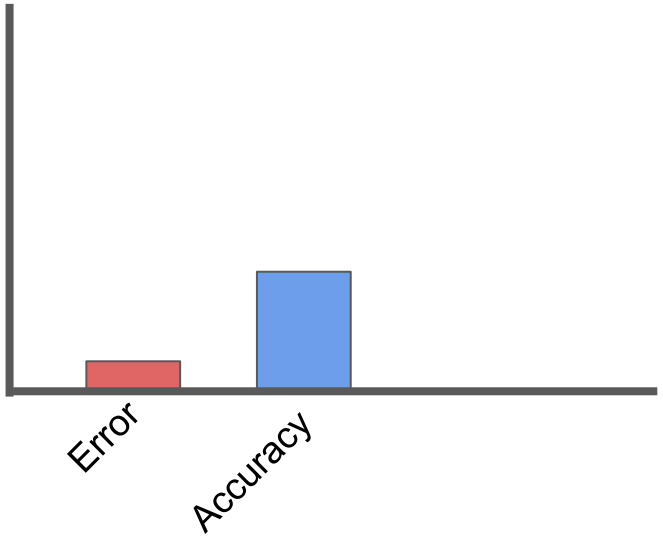
Until Mid Term Evaluation

Lane Detection

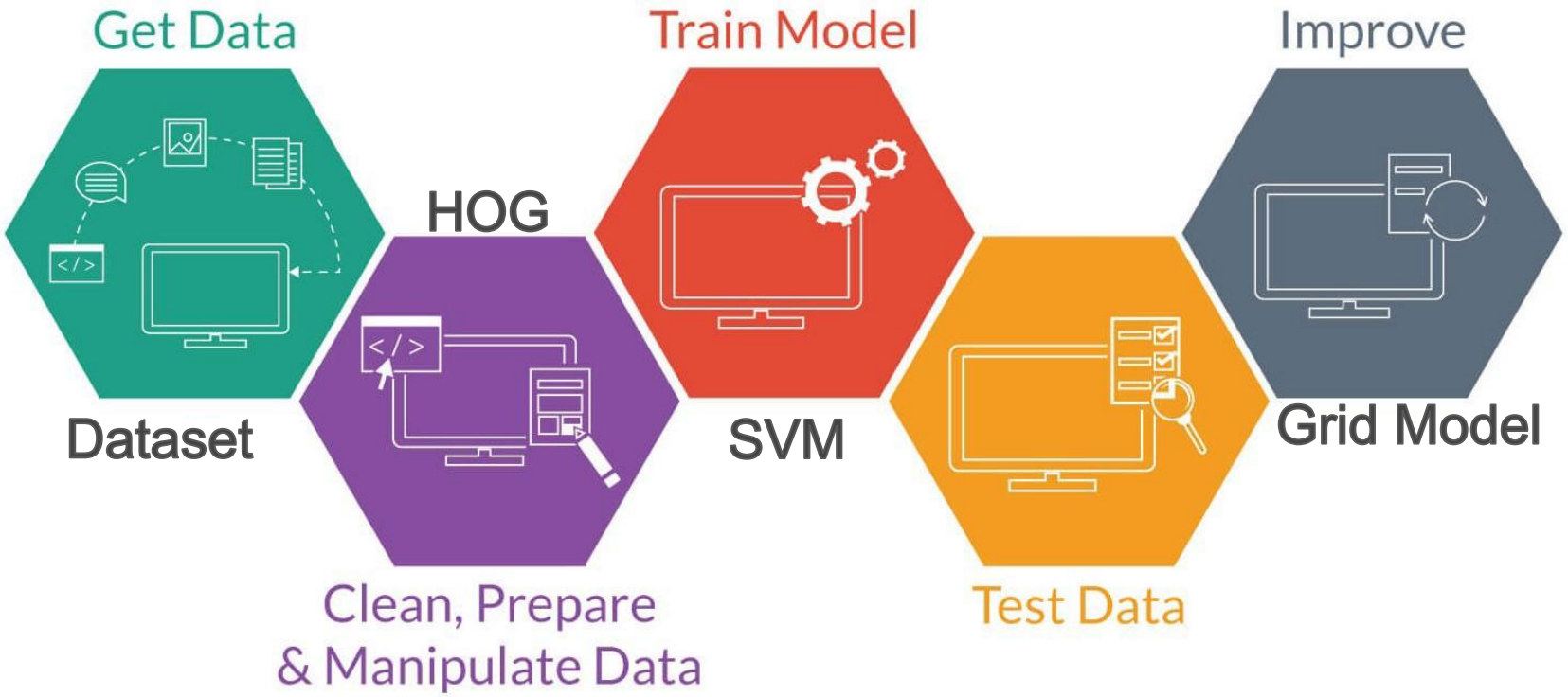




Now



Object Detection



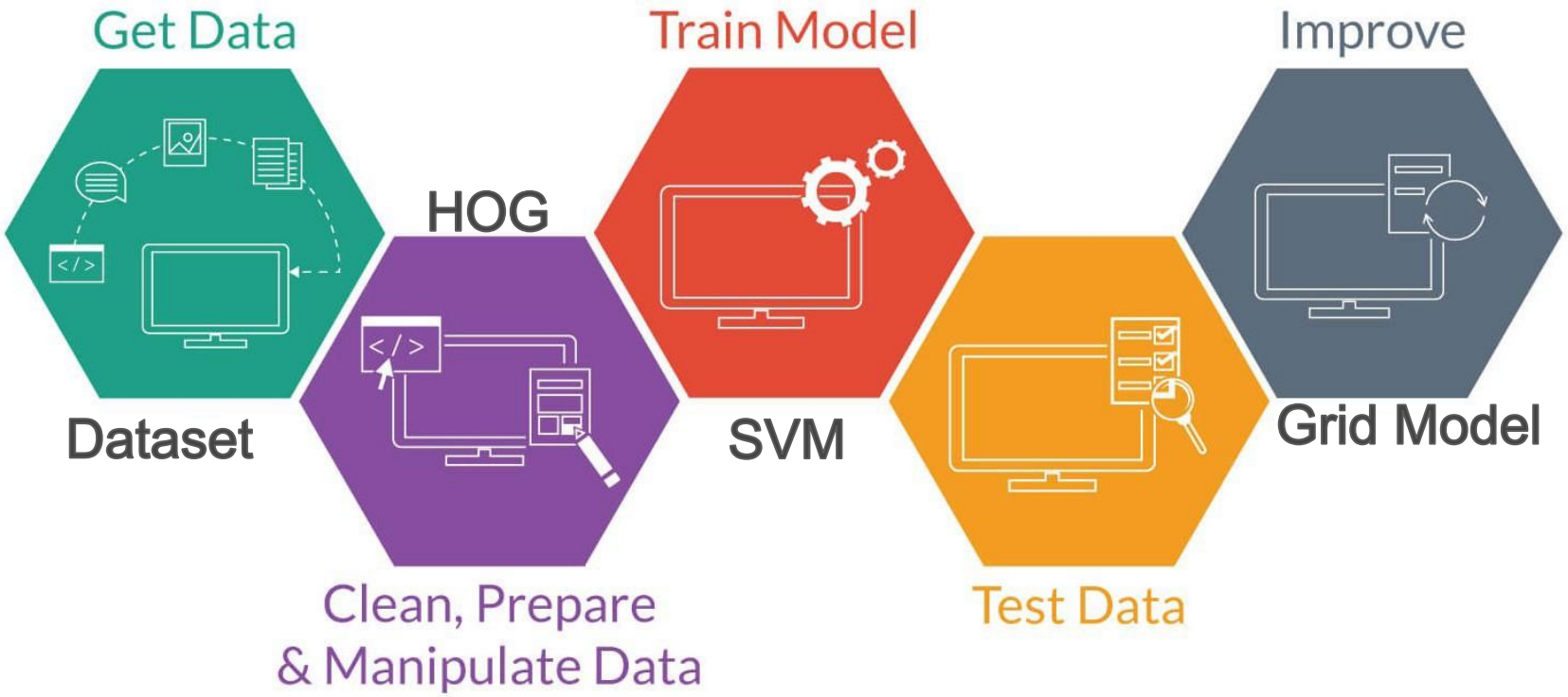
Dataset Collected

Berkeley DeepDrive

CULane

TuSimple

Object Detection

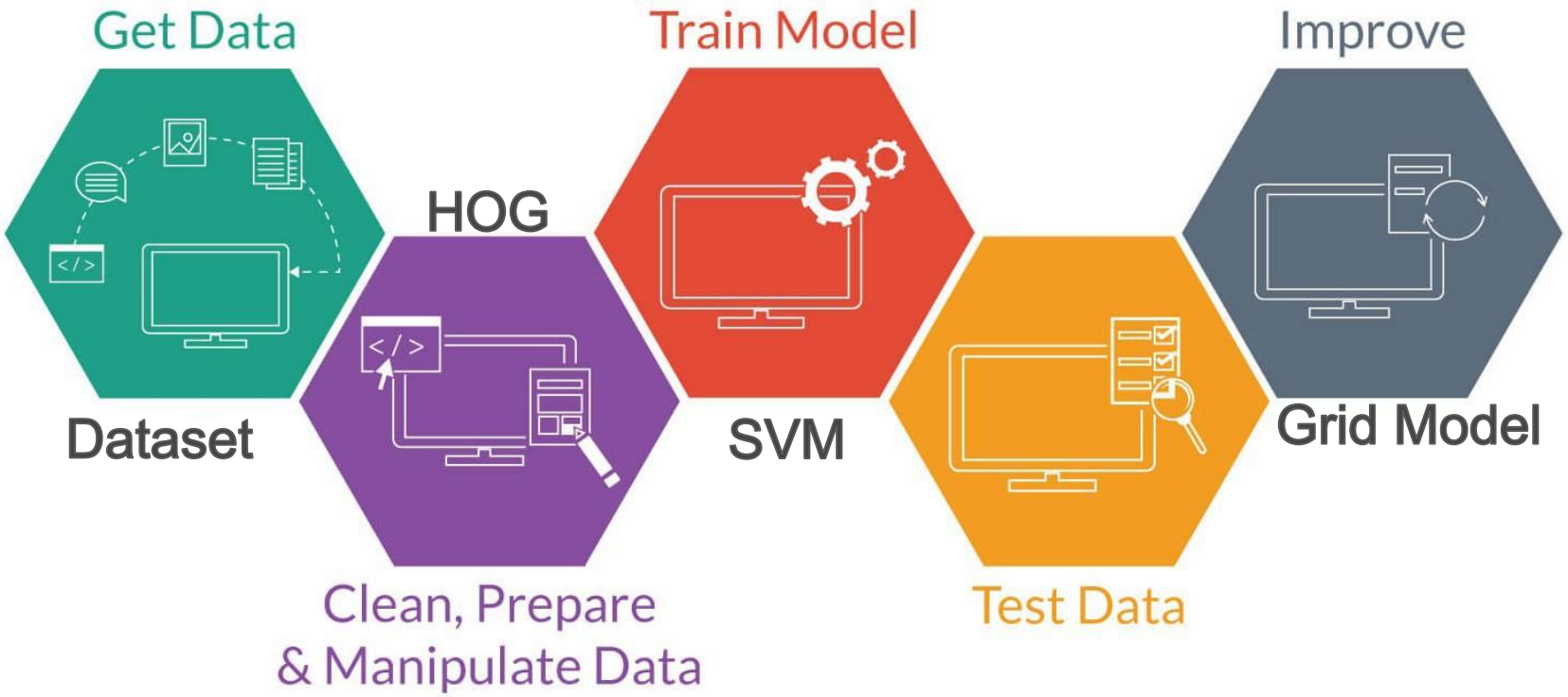


Object Detection - HOG

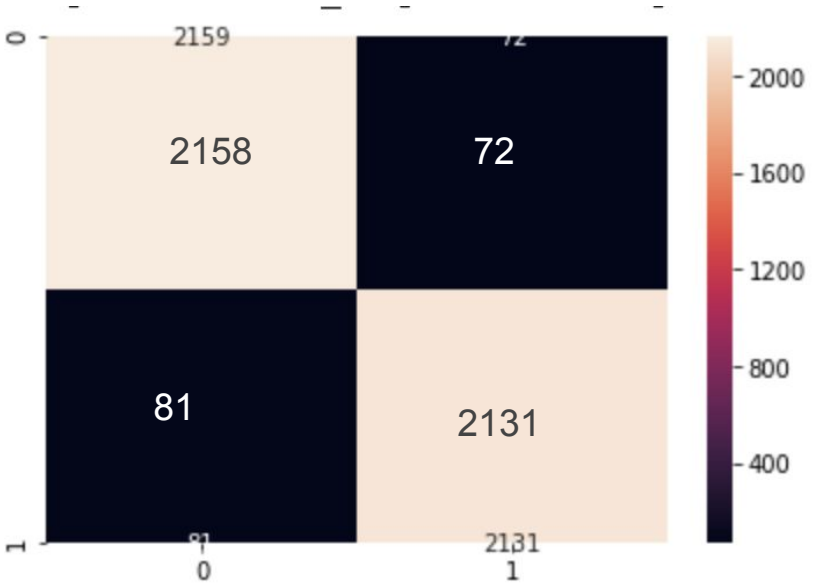
Input image

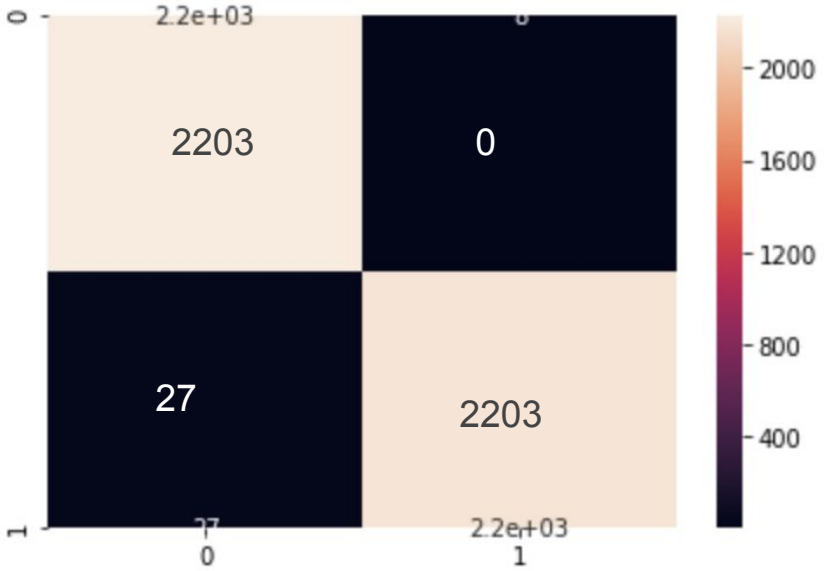
Histogram of Oriented Gradients

Object Detection



Confusion Matrix

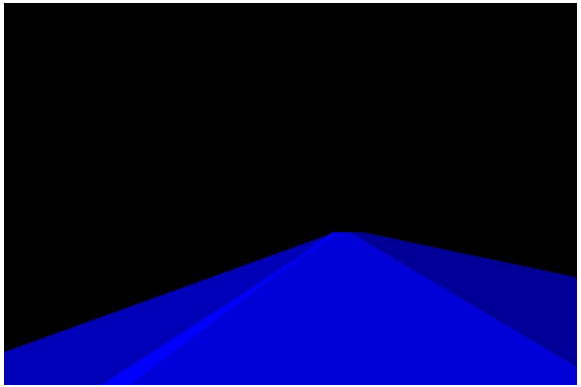


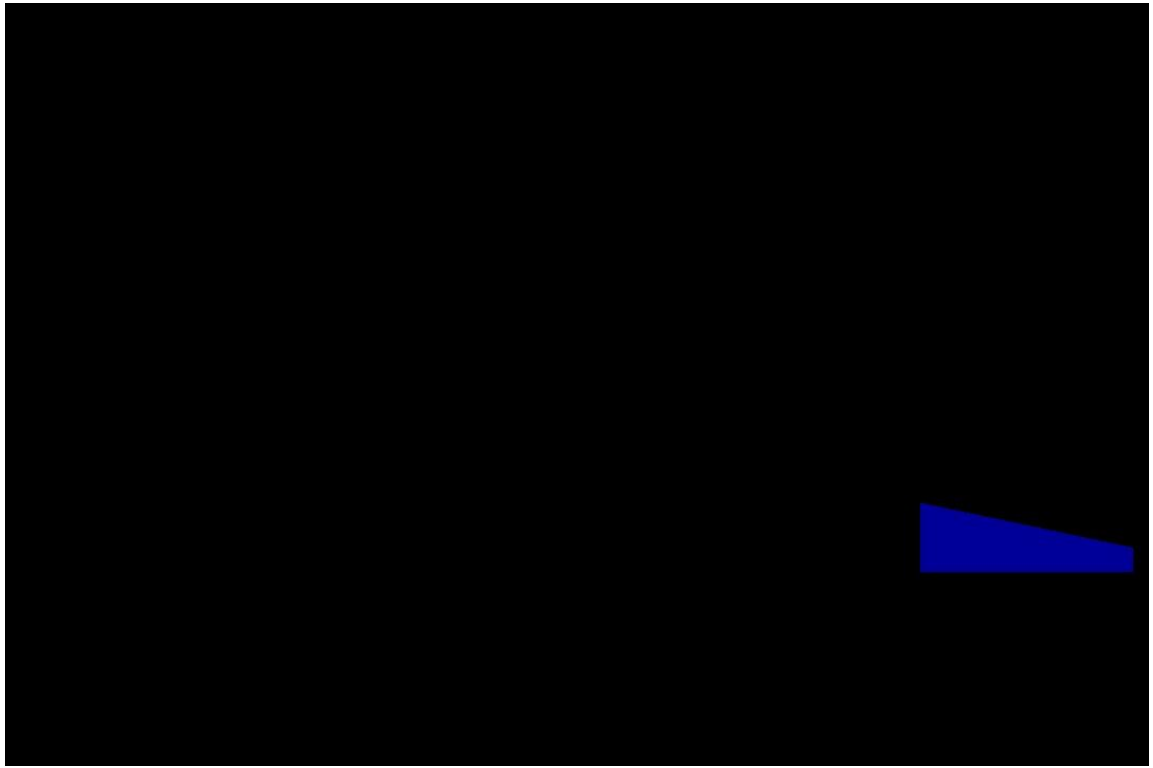


Object Detection

1. Provide actual image
2. Detection classifiers search for matching coordinates values
3. Returns the top-left and bottom-right coordinates

Final Intersection





Thank You