A report on INTERNSHIP facilitated by the NULL CLASS

DATA SCIENCE

Submitted by

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TASK – 1

Meeting Room Analysis

Prerequisites

➔ Python 3.x – Required Python packages:

- Open CV-Python
    - dilb
    - numpy
    - tensorflow
    - pillow
    - tkinter

Installation dependencies

Install the required packages using pip:

- Pip install open cv-python dlib numpy tensorflow pillow

Data Sets

This feature aims to analyze and classify the participants in a meeting room based on their gender and age, with special conditions applied if they are wearing certain colors of shirts and also, It enhances the capability of meeting room analytics by accurately detecting and classifying participants based on gender and age, with specific overrides for those wearing white or black shirts. By ensuring real-time processing and high accuracy, it provides valuable insights into the composition of meeting attendees.

https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSC3d12MQj-K1P4SCVshadXUh1_6X-hdLt-bQ&s

OUTPUT:-

```
==========================================
Females: 2, Males: 2, Average Age: 21.5
>>>
```

Fig 1

TASK – 2

Traffic image detection

Prerequisites

➔ Python 3.x – Required Python packages:

- Open CV-Python
    - dilb
    - numpy
    - tensorflow
    - pillow
    - tkinter

Installation dependencies

Install the required packages using pip:

- Pip install open cv-python dlib numpy tensorflow pillow

Data Sets

This Feature is designed to analyze traffic at a signal by predicting car colors, counting the number of cars, and identifying the presence of people and other types of vehicles. Specific rules are applied to the color prediction of red and blue cars and also, It enhances traffic signal analysis by accurately predicting car colors, counting cars, detecting people, and identifying other vehicles. By ensuring real-time processing and high accuracy, it provides valuable insights into the composition and behavior of traffic at signals, with specific handling of red and blue car color predictions and detailed analysis of people and other vehicles.

https://www.kaggle.com/datasets/dansbecker/cityscapes-image-pairs

Weights

https://www.kaggle.com/datasets/shivam316/yolov3-weights

OUTPUT:-

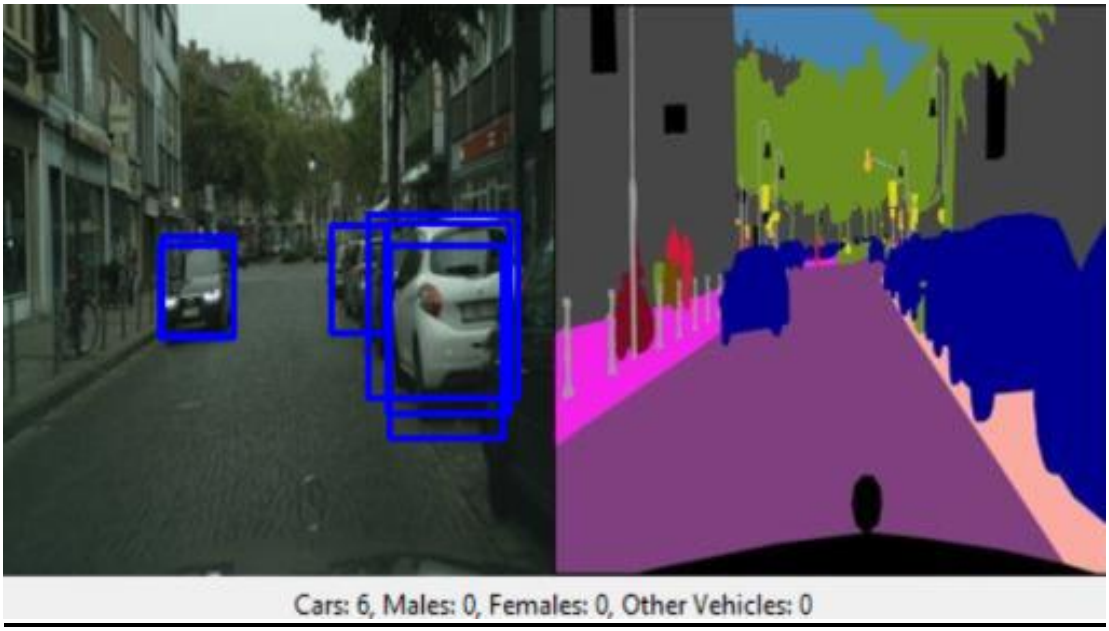

Fig 2

TASK – 3

Animal detection

Prerequisites

➔ Python 3.x – Required Python packages:

- Open CV-Python
    - dilb
    - numpy
    - tensorflow
    - pillow
    - tkinter

Installation dependencies

Install the required packages using pip:

- Pip install open cv-python dlib numpy tensorflow pillow

Data Sets

The task involves developing a model to detect animals in images from a given dataset and provide a confidence score for each detection. The confidence score indicates the likelihood that the detected object is correctly identified as an animal and also, It enhances image analysis by accurately detecting animals in a given dataset and providing confidence scores for each detection. By ensuring high accuracy and reliable confidence scoring, it provides valuable insights into the presence and characteristics of animals in images, making it useful for applications in wildlife monitoring, research, and conservation.

https://www.kaggle.com/datasets/andrewmvd/animal-faces

OUTPUT:-

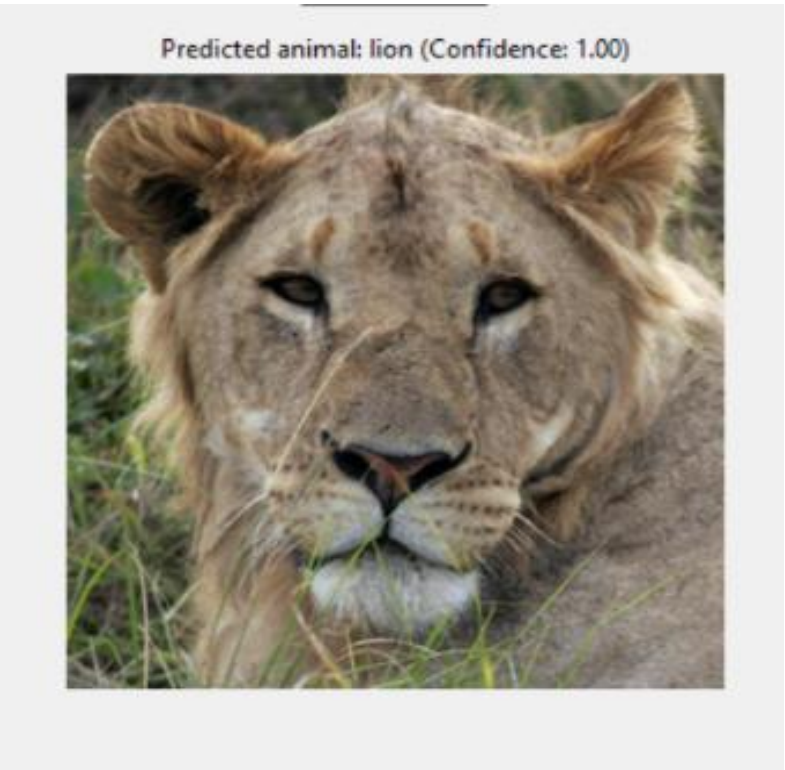

Fig 3