**SELECTED PRESENTATION**

**Architecture used in the Paper:**

Diagram

Description automatically generated

**The newly developed YOLOV4 has been used for face mask detection. This study makes a detection in 2 classes with mask, without mask. The final results of the experiment on test data gives us a mAP (mean average precision) with 98.70 %**

**Dataset details:**

**The name of dataset used:** Labeled Mask Dataset (YOLO\_darknet).

**The link of the dataset:** <https://www.kaggle.com/datasets/techzizou/labeled-mask-dataset-yolo-darknet>

**The total number of samples in the dataset**: 1510 images

**The dimension of images:** various dimensions

**Number of classes:** 2 classes

**Their labels:** with\_mask / without\_mask

“This dataset contains 1510 images belonging to the 2 classes, as well as their bounding boxes in the YOLO format labeled text files.”

**Implementation details:**

We made preprocessing steps following the yolov4 darknet official repo guidelines this pre-processing steps leads us to make the required structure for the data to start training.

Training ratio: 90% (1359)

Testing ratio: 6.6% (100)

Validation ratio: 3.4% (51)

**Hyperparameters used:**

Testing batch=1

subdivisions=1

Training batch=64

subdivisions=16

width=640

height=640

channels=3

momentum=0.949

learning\_rate=0.001

burn\_in=1000

max\_batches = 6000

policy=steps

steps=4800,5400

scales=.1,.1

**Result details: (On testing data)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Precision** | **Recall** | **F1-Score** | **Average IoU** | **mAP** |
| 0.94 | 0.96 | 0.95 | 73.93% | 98.70 % |

**Visualizations:**

\*\*The curve doesn’t go from up to down intensely because it’s the chart of the last training time.

Chart

Description automatically generated