**AMRITA VISHWA VIDYAPEETHAM**

**MACHINE LEARNING**

**Face mask detection and Social Distancing**

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**ABSTRACT:**

The COVID-19 pandemic has caused many shutdowns in different industries around the world. The World Health Organization recommends wearing a face mask and practicing physical distancing to mitigate the virus's spread.

This project aims to detect face masks and social distancing on a video feed using Machine Learning and Object Detection. A CNN model for detecting face masks was built using TensorFlow and Keras and trained on a dataset of 1868 pictures. The Euclidean distance between the centroids of the identified boxes was calculated using YOLO Object detection to recognize people in a frame and check for social distancing.

A threshold of 6 feet was considered as a violation of social distancing.

**Link to dataset:** <https://www.kaggle.com/niharika41298/withwithout-mask>

<https://drive.google.com/drive/folders/1EG9f5vxBS5SvdSsSZbVGj4VPn_PZFUFf?usp=sharing>