



The COVID'19 Dashboard and Implementation of Face Mask Detection and Social Distancing Detection Algorithm

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Introduction

With the help of data visualization, information and content can be put forth through graphical and diagrammatic representation with the help of graphs, charts, networks, etc. In order to organize and provide a compact dashboard with all necessary details pertaining to COVID'19, took up the project to curate two dashboards which are capable of giving users a complete overview on the state wise and country wise analysis of COVID cases. For our project, we have chosen YOLO and R-CNN (Regional CNN) algorithm for analysis. On the basis of the outputs obtained on implementing the two algorithms, the best and most efficient algorithm was chosen and used for implementing the Face Mask Detection and Social Distancing Detection system.

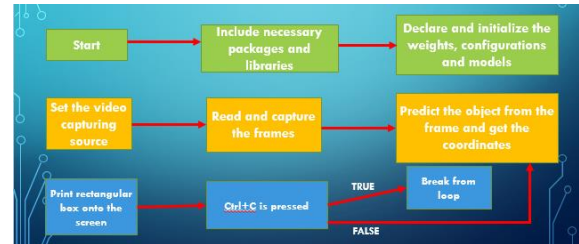
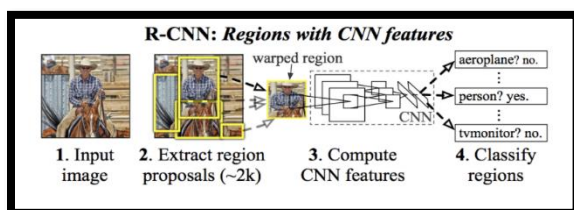
Scope of the Project

Mentioned below are a few points which sight the feasibility and need of our project:

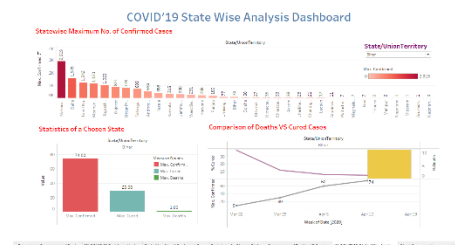
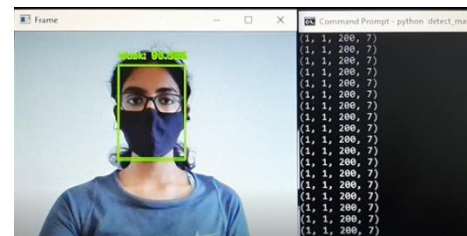
- Off late people have to go through different papers, websites and applications to arrive at a proper conclusion on the COVID cases in our country
- Finding the analysis of cases in a state wise pattern has proven to be even more difficult
- Visual representation systems allow people from all walks of life to comprehend the data with ease
- Authorities and government officials require an efficient system to keep track of people wearing masks

Methodology

The face mask detection system makes use of the R-CNN algorithm with Deep Neural Networks to execute and train the models and implement the detection procedure. There are mainly two programs involved in this system. First, the model is trained with a large dataset after which the blobs are extracted from the video feed, processed and the face is detected and bounded with a green/red box based on whether the person is wearing a mask or not.



Results



Conclusion

From the observations and analyses made so far, it can be inferred that data visualization plays an integral role in portraying the severity of any issue and to create awareness among the mass by portraying the data in an interpretable manner. Moreover, this project was developed with the main motive to throw light on the importance of staying safe and sanitized during the pandemic using visual data analytics and to develop a system that would help authorities to monitor people and keep a track on following the rules related to masks and social distancing.

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