G.Narayanamma Institute of Technology & Science

(For women)

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(An ISO 9001:2015 Certified Institution)

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SOCIAL DISTANCING DETECTOR

BY

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ABSTRACT

The ongoing COVID-19 corona virus outbreak has caused a global disaster with its deadly spreading. Due to the absence of effective remedial agents and the shortage of immunizations against the virus, population vulnerability increases. In the current situation, therefore, social distancing is thought to be an adequate precaution (norm) against the spread of the pandemic virus. The risks of virus spread can be minimized by avoiding physical contact among people. The purpose of this work is, therefore, to provide a Machine learning and Deep learning platform for social distance tracking using an overhead perspective.

The framework uses the YOLOv3 object recognition paradigm to identify humans in video sequences. The transfer learning methodology is also implemented to increase the accuracy of the model. The detection model identifies peoples using detected bounding box information. Using the Euclidean distance, the detected bounding box centroid's pairwise distances of people are determined. To estimate social distance violations between people, we used an approximation of physical distance to pixel and set a threshold. In addition, a tracking algorithm is used to detect individuals in video sequences such that the person who violates/crosses the social distance threshold is also being tracked.

SYSTEM REQUIREMENTS:

Software Requirements:

Platform	- Windows ,macOS
Development Tool	- Python,Anaconda(Spyder/Jupyter notebook)

Hardware Requirements:

Name of the Processor	- Pentium / i3,i5 or i7
Hard Disk Capacity	- 930 GB
RAM Capacity	- 4 GB/6 GB/8 GB