# A MAJOR PROJECT

**on**

IMPLEMENTATION OF FACE MASK DETECTION USING OPENCV

### Submitted to

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD**

In partial fulfilment of the requirement for the award of the degree of

**BACHELOR OF TECHNOLOGY**

in

## ELECTRONICS AND COMMUNICATION ENGINEERING

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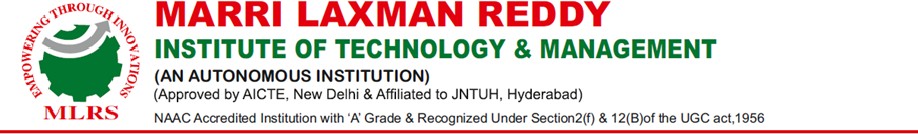
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June, 2022



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**CERTIFICATE**

This is to certify that the project work entitled “**IMPLENTATION OF FACE MASK DETECTION USING OPENCV**” work done by **MADDI NIKITHA (187Y1A0422) AND**

**PERABATHULA VAMSHI KRISHNA (187Y1A0451)** students of Department of Electronics and Communication Engineering, is a record of bonafide work carried out by the members during a period from January, 2022 to June, 2022 under the supervision of

**E. SREENIVASULU, Assistant Professor**. This project is done as a fulfilment of obtaining Bachelor of Technology Degree to be awarded by Jawaharlal Nehru Technological University Hyderabad, Hyderabad.

The matter embodied in this project report has not been submitted by us to any other university for the award of any other degree.

### MADDI NIKITHA PERABATHULA VAMSHI KRISHNA

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Date: (**E. SREENIVASULU**)

The Viva-Voce Examination of above students, has been held on………………………

Head of the Department External Examiner Principal

# ACKNOWLEDGEMENTS

We would like to express our sincere gratitude to our guide **E. Sreenivasulu**, **Assistant Professor**, Department of Electronics and Communication Engineering, for his excellent guidance and invaluable support, which helped us accomplish the B.Tech (ECE) degree and prepared us to achieve more life goals in the future. His total support of our dissertation and countless contributions to our technical and professional development made for a truly enjoyable and fruitful experience. Special thanks are dedicated for the discussions we had on almost every working day during our project period and for reviewing our dissertation.

We are very much grateful to our Project Coordinator**, Dr. G. Amarnath**, **Associate Professor,** Department of ECE, MLRITM, Dundigal, Hyderabad, who has not only shown utmost patience, but was fertile in suggestions, vigilant in directions of error and has been infinitely helpful.

We are extremely grateful to **Dr. Srinivas Bachu**, **Associate Professor & HOD-ECE**, MLRITM, Dundigal, Hyderabad, for the moral support and encouragement given in completing my project work.

We wish to express deepest gratitude and thanks to **Dr. K. Venkateswara Reddy, Principal,** MLRITM, for his constant support and encouragement in providing all the facilities in the college to do the project work.

We would also like to thank all our faculties, administrative staff and management of MLRITM, who helped us to completing the mini project.

On a more personal note, I thank my **beloved parents and friends** for their moral support during the course of our project.

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**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| ML | Machine Learning |
| AI | Artificial Intelligence |
| NLP | Natural language processing |
| CNN | Convolutional neutral networks |
| SSD | Single shot detection |
| SVM | Support vector machine |
| YOLO | You Only Look Once |
| FPN | Feature Pyramid Network |
| RMFD | Real World Masked Face Dataset |
| API | Application programming Interface |
| IOU | Intersection over Union |
| GPU | Graphics Processing Unit |
| TFPU | TensorFlow Processing Unit |
| CPU | Central Preprocessing Unit |
| IBM | International Business Machine |
| MRI | Magnetic resonance imaging |

# ABSTRACT

COVID-19 pandemic has rapidly increased health crises globally and is affecting our day to- day lifestyle. Many measures are recommended by WHO to control the infection rate and avoid exhausting the limited medical resources. A motive for survival recommendations is to wear a safe facemask, stay protected against the transmission of coronavirus. By wearing a facemask, the most effective preventive care must be taken against COVID-19. Monitoring manually if the individuals are wearing face mask correctly and to notify the victim in public and crowded areas is a difficult task.

This project approaches a simplified way to achieve facemask detection and notifying the individual if not wearing facemask. Our project uses image processing and machine learning techniques. We collect data of images of face with and without masks and then image processing applied to it. We are giving data set of samples containing images with and without mask. So that we train the data using machine learning techniques like convolution neural networks. We use image processing technique viola jones algorithm to take images as input.

The output will be of color bounded box shown as without mask if the detected face is without mask and it sends the information to person and higher authorities too. If the person is wearing mask the bounded box will be of shown as mask. It indicates that it is safe now. The system runs in real- time and detects if an individual face has a facemask, if not then notifies the person-in-charge that the individual has not been equipped with a mask.