VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI - 590018

Mini Project Report

On

"REAL TIME FACE EMOTION DETECTION SYSTEM USING CNN"

A report submitted in partial fulfilment of the requirements for

COMPUTER GRAPHICS AND IMAGE PROCESSING LABORATORY (21CSL66)

In

Computer Science and Design

Submitted by

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ALVA'S

DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY MIJAR,

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CERTIFICATE

This is to certify that the COMPUTER GRAPHICS AND IMAGE PROCESSING Mini Project entitled "REAL TIME FACE EMOTION DETECTION SYSTEM USING CNN " has been successfully completed by

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the Bonafide students of Department Of Computer Science And Design Engineering, Alva's Institute of Engineering and Technology in DEPARTMENT OF COMPUTER SCIENCE AND DESIGN ENGINEERING of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2023–24. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the Bachelor of Engineering Degree.

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Mini Project Guide

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ABSTRACT

This project explores the application of deep learning techniques for facial emotion detection using TensorFlow, Keras, and OpenCV. The project begins with dataset preparation sourced from Kaggle, emphasizing the importance of pre-processing steps such as image resizing and conversion to grayscale to align with the chosen model architecture. TensorFlow and Keras are leveraged for efficient model construction, training, and evaluation, while OpenCV facilitates real-time face detection and emotion recognition.

The implementation includes testing on static images and live webcam feeds, showcasing the model's accuracy in recognizing a range of emotions. By training the model over 100 epochs, significant improvements in accuracy are achieved, validating its potential for practical applications in interactive systems and digital interfaces. The report emphasizes the accessibility of the provided code snippets, designed to guide both beginners and enthusiasts through the process of deploying facial emotion detection systems using deep learning methodologies.