

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY,
BELAGAVI-590018**



**Mini Project Report On
“Real Time Emotion Detection using
TESS and a Pre-Trained AI Model”**

A report submitted in partial fulfillment of the requirements for
COMPUTER GRAPHICS AND IMAGE PROCESSING LABORATORY (21CSL66)

In
Computer Science and Design

Submitted by

ANUSHA NT	4AL21CG006
JAHNAVI V	4AL21CG029
JAYAPRAKASH P	4AL21CG030
VIMALKUMAR U R	4AL21CG061

Under the Guidance of
Dr. Pushparani M K
Senior Assistant Professor



**DEPARTMENT OF COMPUTER SCIENCE AND DESIGN
ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
MOODBIDRI-574225, KARNATAKA**

2023 – 2024

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY
MIJAR, MOOBBIDRI, D.K. -574225



DEPARTMENT OF COMPUTER SCIENCE AND DESIGN
CERTIFICATE

This is to certify that the CGIP Mini Project entitled "**REAL TIME EMOTION DETECTION USING TESS AND A PRE-TRAINED AI MODEL**" has been successfully completed by

ANUSHA N T	4AL21CG006
JAHNAVI V	4AL21CG029
JAYAPRAKASH P	4AL21CG030
VIMALKUMAR U R	4AL21CG061

the bonafide students of **Department of Computer Science & Design, Alva's Institute of Engineering and Technology** in **DEPARTMENT OF COMPUTER SCIENCE & DESIGN** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2023-2024. 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.


Dr. Pushparani M K
Mini Project Guide




Mr. Jayanth Kumar A. Rathod
HOD, CSD

EXTERNAL VIVA

Name of the Examiners

1. Sunita NV
2. J. A Rathod

Signature with Date


7/8/24


ABSTRACT

Emotion detection has become a crucial element in enhancing human-computer interaction by enabling technology to respond intuitively and empathetically to users' emotional states. This project focuses on real-time emotion detection using facial expressions, leveraging the Toronto Emotional Speech Set (TESS) and a pre-trained deep learning model. The system captures live video from a webcam, detects faces using OpenCV's Haar Cascade Classifier, and preprocesses the detected faces for emotion prediction. The pre-trained model analyzes the facial data, predicts the emotions, and displays them on the video feed while storing recent predictions in a buffer for smoother transitions. User interactions are enriched through text-to-speech capabilities, providing verbal responses based on detected emotions. Future enhancements include improving model accuracy with larger datasets, incorporating multi-modal inputs for comprehensive emotion detection, developing context-aware responses, and creating a mobile application to extend usability. These advancements aim to apply the system in real-world scenarios such as customer service, mental health monitoring, and educational tools, revolutionizing human-computer interactions with more empathetic and responsive technology.