

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010



## PROJECT REPORT ON

### **“FACIAL EMOTION RECOGNITION WITH RECOMMENDATION SYSTEM”**

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING IN

**ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

Submitted By

DELTAN GLERAN LOBO

4AL20AI013

GOUTHAM JAGADEESH SAMNEKAR

4AL20AI015

MOHAMMED AMAN

4AL20AI025

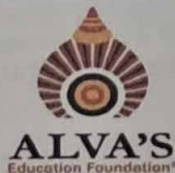
VISHMA D

4AL20AI049

Under the Guidance of

Mr. Kiran Raj K M

Assistant Professor



## **ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

(Unit of Alva's Education Foundation (R), Moodbidri)

Affiliated to Visvesvaraya Technological University, Belagavi &

Approved by AICTE, New Delhi. Recognized by Government of Karnataka.

**Accredited by NAAC with A+ Grade**

Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka

2023-2024

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## DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

### CERTIFICATE

Certified that the project work entitled "FACIAL EMOTION RECOGNITION WITH RECOMMENDATION SYSTEM" is a bona fide work carried out by

DELTAN GLERAN LOBO	4AL20AI013
GOUTHAM JAGADEESH SAMNEKAR	4AL20AI015
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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING** 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 project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Signature of the Guide  
Mr. Kiran raj K M

Head of the Department  
Dept. of Artificial Intelligence & Machine Learning  
Alva's Institute of Engineering and Technology  
Shobhavana Campus, Mijar  
Moodubidre 574 225, D.K. Karnataka, India

Signature of the Principal  
Alva's Institute of Engineering & Technology,  
Mijar, MOODBIDRI - 574 225, D.K

### EXTERNAL VIVA

Name of the Examiners

- Harish Kundu
- Mangumeth H

Signature with date

28/05/2024  
05/05/24

## ABSTRACT

Facial emotion recognition, coupled with music recommendation systems, presents a transformative approach to enhancing user experiences in digital platforms. In order to identify facial expressions and suggest tailored music to users based on their emotional states, this project intends to create an integrated system that makes use of deep learning techniques, context-aware recommendation algorithms, and web development frameworks. The methodology uses TensorFlow and OpenCV for model creation and inference, and integrates Convolutional Neural Networks (CNNs) for face emotion recognition, including the MobileNetV2 architecture. By integrating context-aware recommendation approaches, users' emotional cues are taken into account while creating playlists of music, which increases user pleasure and engagement. For backend server development, the Flask framework is used, which makes it easier to integrate with external services and frontend interfaces. Softmax regression is used to classify facial expressions into many classes, allowing for reliable inference and precise music recommendations. The technology seeks to revolutionise how consumers interact with music in digital spaces by delivering personalised and sympathetic interactions through rigorous testing and validation. By advancing human-computer interaction, this initiative opens the door for more emotionally aware and intuitive technologies in a variety of fields