



AI SAFE DRIVE

AI Emotional Music Play with Sleep Detection ...



OUR TEAM



Gummala Prashanth



Goditi Bhaksr



Katta Jaswanth



N.Dhakshayani

INTRODUCTION

This project combines emotion detection and sleep detection using AI, aiming to enhance user experience by personalizing music based on emotional states and ensuring safety during driving.

Key Features:

- Emotion-driven music playback based on facial expression detection.
- Sleep detection system to alert users when they are at risk of falling asleep while driving.



OBJECTIVES

- Detect user emotions using facial expressions.
- Play music that aligns with the detected emotion
- Detect if a person is falling asleep.
- Trigger an alert (horn sound) to wake the person up, enhancing safety during driving.



SYSTEM ARCHITECTURE

- **Emotion Detection MODEL:** Detects emotions (happy, sad, angry).
- **Music Playback:** Plays music based on detected emotions.
- **Drivesafe:** Detects sleepiness via eye-tracking and head movement.
- **Alert System:** Triggers alerts (e.g., horn sound) if sleepiness is detected.



EMOTION DETECTION

Model

Emotion Detection Model (Facial Emotion Recognition)(Visual: Screenshot of the emotion detection interface or model output)

How it Works

- Uses facial landmark detection and classification to detect emotions.
- Output: Emotion class (e.g., happy, sad).

SLEEP DETECTION

Model

Driver Sleep Detection using OpenCV and Dlib(Visual: Screenshot or diagram showing how the system detects eye closure)

How it Works

- Tracks eye movement and head position to identify signs of sleepiness.
- Detects eye closure for more than a certain period and triggers an alert.

WORKFLOW

Use Input Video
(real-time)

Emotion Detection

Music Selection
(Based on Emotion)

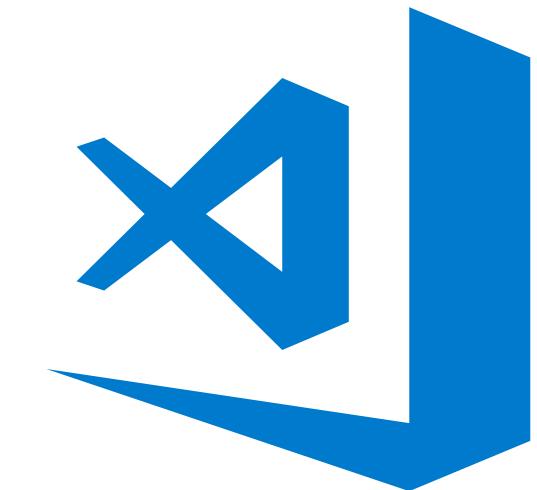
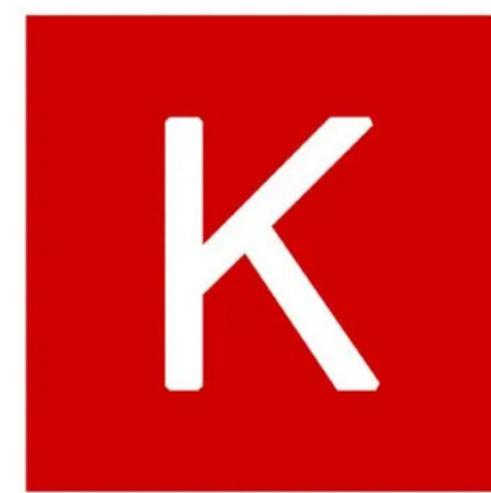
Sleep Detection

Alert Trigger
(Horn/Sound)

TECHNOLOGY STACK



TensorFlow





CHALLENGES

- Ensuring accurate emotion and sleep detection in varying lighting conditions.
- Real-time processing of video feed.

Solutions:

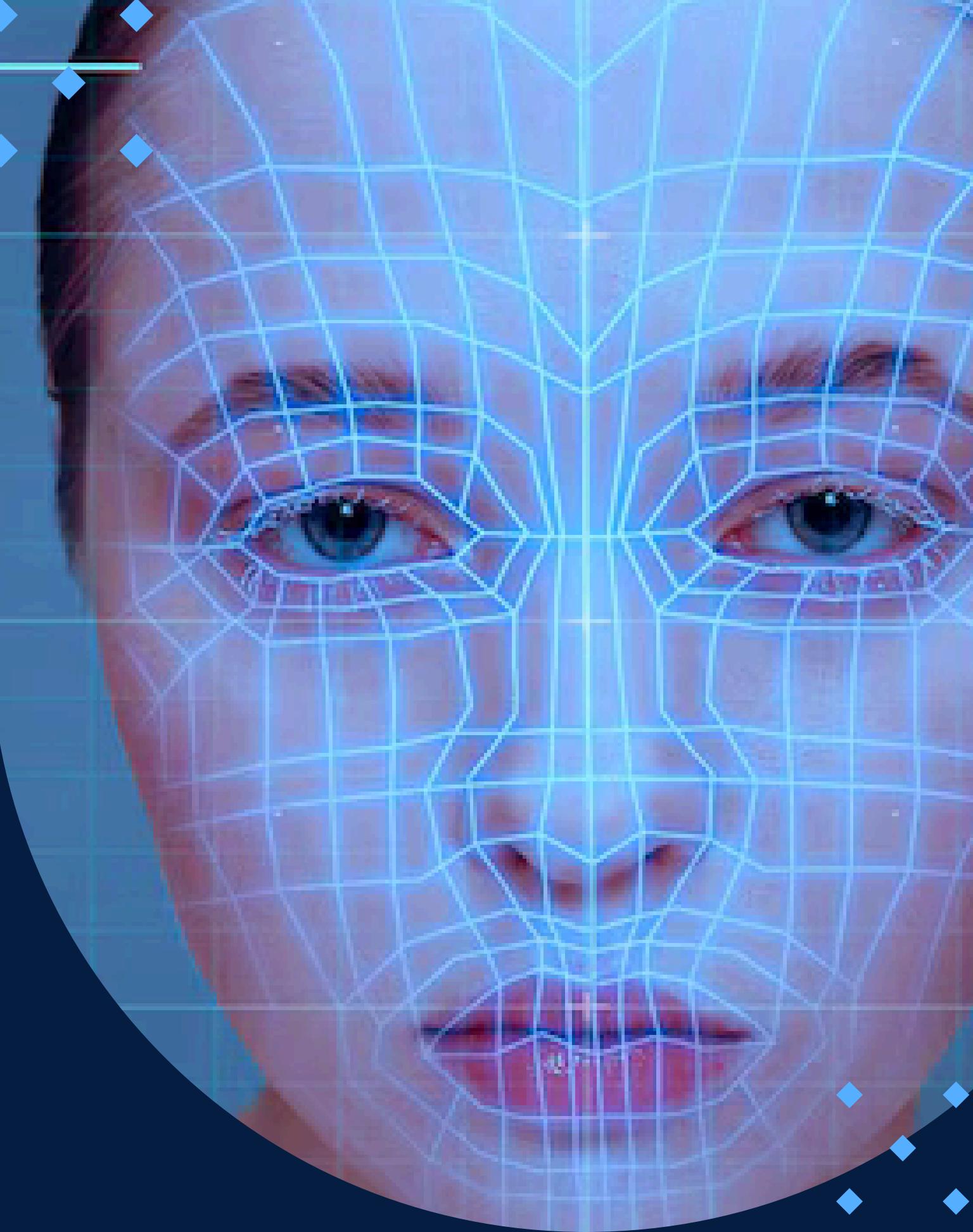
- Optimized models for fast inference.
- Preprocessing of video frames to handle low-light or obstructed views.

USE CASES

Personal Use: Emotion-driven music to improve mood.

Driving: Sleep detection to alert drivers, enhancing safety.

Entertainment and Productivity:
AI-driven music playlists for different moods or activities.





FUTURE SCOPE

Expanding to mobile platforms.

Integrating with smart cars for a more seamless driving experience.

Adding more emotional states for deeper music personalization.

Conclusion

This AI-driven system combines emotion detection and sleep monitoring to enhance user experience. It plays emotion-based music and alerts users if signs of drowsiness are detected, ensuring both emotional well-being and safety.

Ideal for applications like driver safety, it offers a practical and personalized solution for daily use.



Thank You

