EVision Drive

ABSTRACT

The Rise Of Electric Vehicles (EVs) And An Increased Focus On Road Safety Have Made Intelligent Driver Assistance Systems A Vital Innovation. This Project Introduces A Smart, Real-Time Solution That Enhances Driver Awareness And Promotes Sustainable EV Usage By Integrating Drowsiness Detection, Emotional State Analysis, And Proactive Recharge Alerts Into A Single Framework. The System Continuously Monitors The Driver's Facial Cues Using Computer Vision And Facial Emotion Recognition Techniques To Detect Signs Of Fatigue Or Stress. Upon Detecting Such Signs, It Provides Instant Voice Alerts And Mood-Based Music Suggestions To Help The Driver Stay Attentive And Engaged. At The Same Time, The System Tracks The EV's Battery Level, And When It Falls Below A Specified Threshold (Such As 50%), It Generates An Alert And Guides The Driver To Proceed With Recharging At A Nearby Station.Developed Using Python, OpenCV, FER (Facial Emotion Recognition), EmotionDet, pyttsx3, And Backed By A Data-Driven Layer Using MongoDB And Express.js, The Solution Processes Live Camera Input And Provides Immediate Voice And Web-Based Feedback Without Internet Dependency. By Merging Driver Safety With Intelligent Assistance And Green Driving Habits, **EVision Drive** Delivers A Compact Yet Powerful Approach To Enhancing The Electric Driving Experience. This Project Represents A Meaningful Step Toward Intelligent, Eco-Friendly Transport Systems That Support Both Safety And Sustainability.

Keywords:

Assistive Technology, voice-guided Vision System, Slot Booking System

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