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DEPARTMENT OF CSO(INTERNET OF THINGS)

MINI PROJECT ON

WORK WELL: REAL TIME SLEEP DETECTION FOR ENHANCED PRODUCTIVITY

UNDER THE ESTEEMED GUIDANCE OF

Mr. K. Anil , Assistant Professor

PRESENTED BY:

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INTRODUCTION

- Drowsiness reduce productivity and efficiency.
- Lack of sleep affects focus, reaction time, and safety.
- This project develops a real-time sleep detection system.
- It uses computer vision.
- The system analyzes facial features, eye movements, and head position.
- A webcam or surveillance camera detects early signs of drowsiness.

OBJECTIVES

- Improve Workplace Safety
- Enhance Productivity
- Monitor Fatigue in Real-Time
- Provide Instant Alerts and Notifications
- Adapt to Various Use Cases

PROBLEM AND STATEMENT

- Drowsiness reduce workplace productivity and safety.
- Lack of sleep leads to poor focus, slow reactions, and high accident risks.
- Industries like transportation, healthcare, and manufacturing are most affected.
- Traditional monitoring methods fail to detect drowsiness in real time.
- A smart solution is needed to identify early signs of sleepiness.

TOOLS AND TECHNOLOGIES USED

- Programming: Python
- Libraries: OpenCV
- Hardware: Laptop Camera
- Alert and Notification System: Audio Alerts

MODULES

- Eye Tracking
- Face Detection
- Head Position Analysis
- Facial Expression Analysis
- Alert System



WORKING PROCESS

Video Capture



Feature Detection



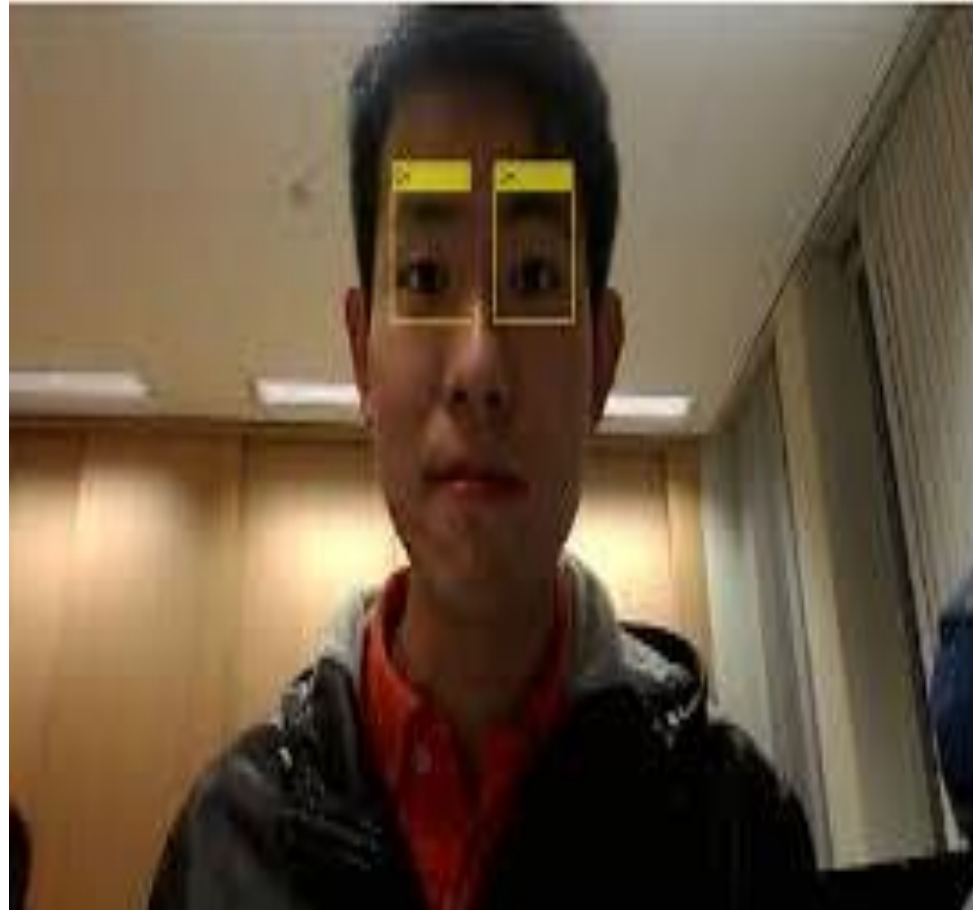
Movement Analysis



Drowsiness Identification

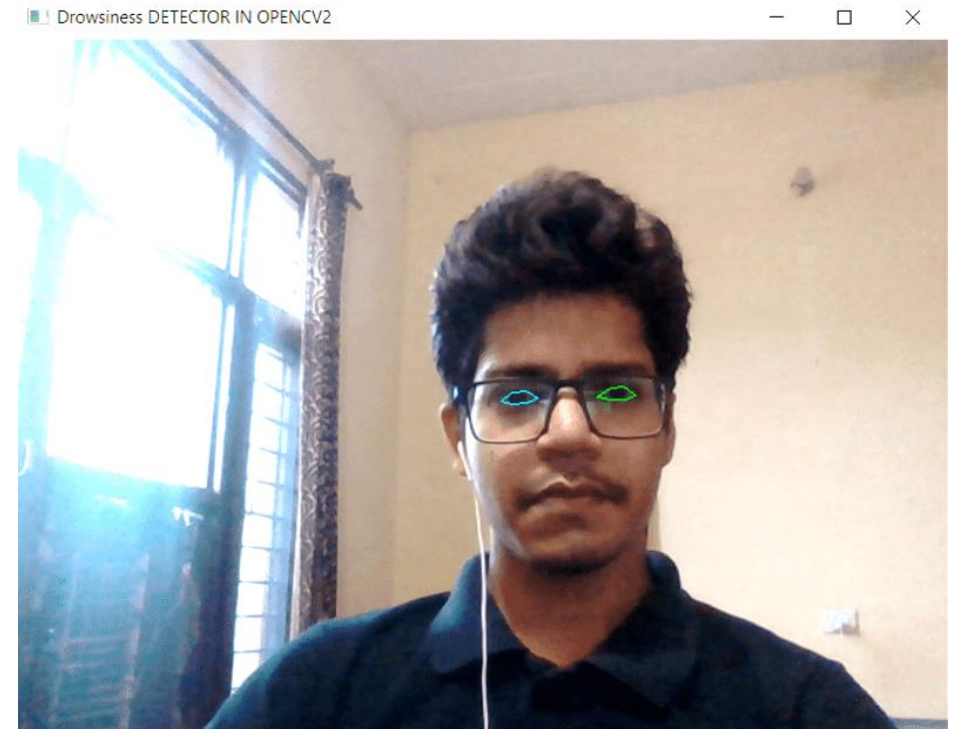


Alert Trigger



FEATURE SCOPE

- Head Pose Estimation
- Alert System
- Real-Time Face & Eye Tracking



CONCLUSION

Real-time drowsiness detection improves safety and productivity using computer vision. It detects fatigue through facial analysis and triggers alerts. Future enhancements like advanced AI and infrared technology will boost accuracy and usability for various industries.

THANK YOU