Dept. of Computer Science and Engineering (Data Science)

Adichunchanagiri Institute of Technology, Chikkamagaluru

Mini Project Synopsis

TITLE: Drowsiness detector.

Problem Statement: A computer vision system that can automatically detect students drowsiness in a real-time video stream and then play an alarm if the student appears to be drowsy.

Description: Extended online class attendance leads to concentration discontinuity in students. Prolonged screen time causes decreased focus, productivity, and retention. This issue requires innovative solutions to maintain student engagement, attention, and motivation, ensuring effective online learning experiences.

The **applications** of the project include reduced distractions and increased engagement,enhanced student safety, preventing accidents from excessive sleepiness,personalized alerts promote self-awareness and time management.

Expected Outcomes: Successful runtime capturing of video with camera. Captured video was divided into frames and each frame were analysed. Successful detection of face followed by detection of eye. If closure of eye for successive frames were detected, then it is classified as drowsy condition else it is regarded as normal blink and the loop of capturing image and analysing the state of student is carried out again and again. In this implementation during the drowsy state the eye is not surrounded by circle or it is not detected.

Technologies and Tools:

- **Languages:** Python
- **Libraries/Frameworks:** OpenCV (for image processing), TensorFlow/PyTorch (for machine learning models), Tesseract (for OCR)
- **Hardware:** Camera for image acquisition

Team Members:

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Signature of the Guide with date **Signature of the Coordinator with date**