PROJECT TOPIC: Driver Drowsiness real-time detection System

B.Tech CSED Group No. : 08

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About the Project:

Drowsiness detection is a safety technology that can prevent accidents that are caused by drivers who fell asleep while driving. The objective of this intermediate Python project is to build a drowsiness detection system that will detect that a person's eyes are closed for a few seconds. This system will alert the driver when drowsiness is detected. In this Python project, we will be using OpenCV for gathering the images from webcam and feed them into a Deep Learning model which will classify whether the person's eyes are 'Open' or 'Closed'.

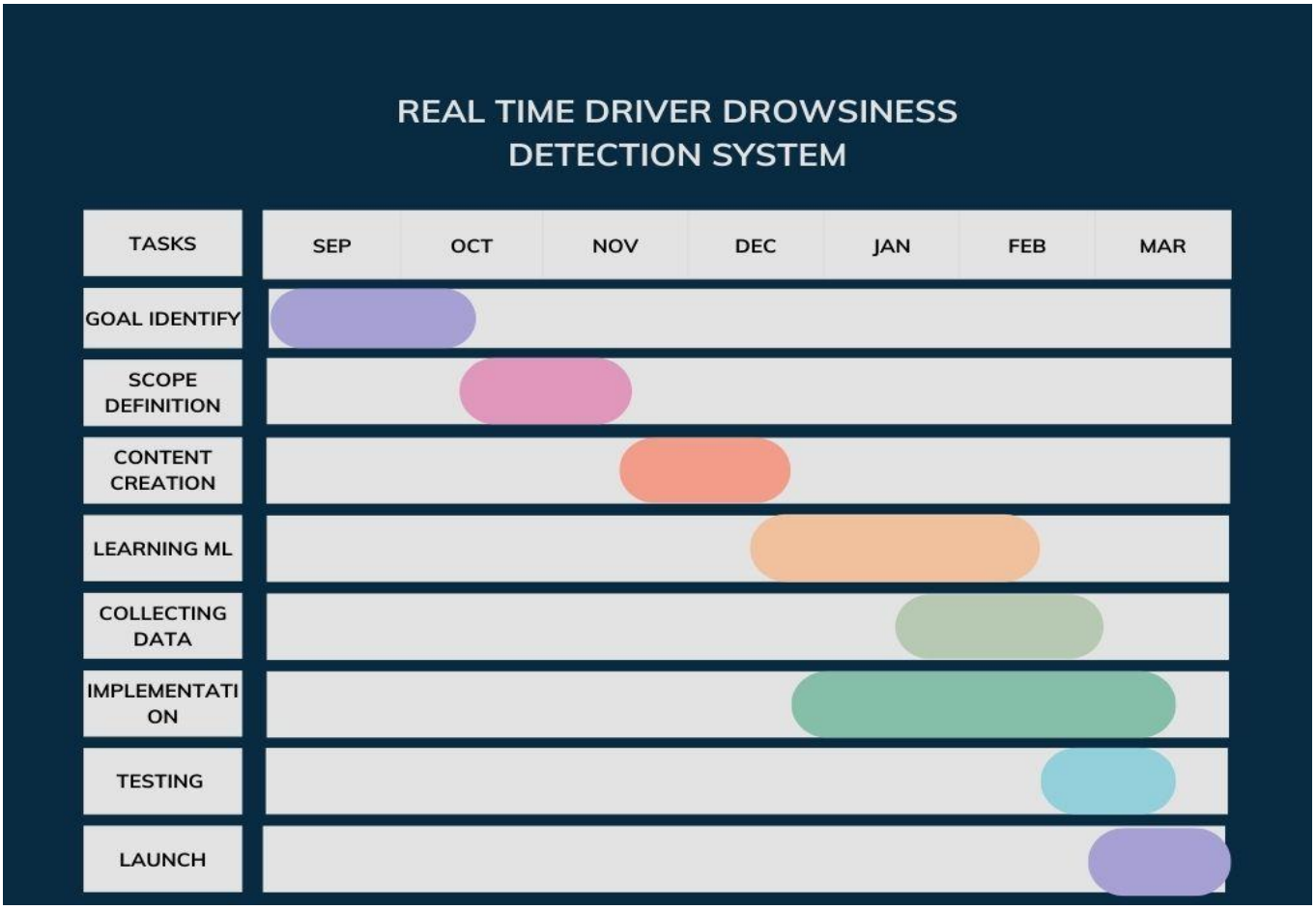
The purpose of this thesis is to contribute to the study of the behavior of drivers while driving, in the development and evaluation of the sleepy driver model system. Non-intrusive is preferred as a means for the comfort of drivers. The results from the study will be co-ordinated so as to produce programs that can be effective in detecting insomnia by giving them a warning about their lack of attention due to drowsiness or other factors. In other words, they can correct behavior or stop driving while they are asleep. This system will need to be strong against model variations as well as distractions and limitations of comfort.

Motivation:

Almost all statistics have identified drivers' drowsiness as a major safety factor for vehicles. Drowsiness is estimated to be involved in 10-40 per cent of road accidents. Sleep risks are very serious in terms of the severity of the injury and are more likely to occur in people who do not sleep well. Drowsiness affects mental alertness, reduces a person's ability to handle a car safely and increases the risk of human error leading to death and injury. In addition, it has been shown to reduce response time, reduce awareness, and impair judgment. A drowsy driver cannot predict when to start an uncontrollable sleep.

Project Planning:

The frame is made using an ascending model. Center a framework model is first created and later added to this method after each test. Basic work the skeletal structure was refined into increasing energy levels. At the next level of escalation, it may involve innovation support and improvement.



Tools required:

- **Hardware Requirements:**
  - Webcam
  - Processor i3 or higher
  - Ram 8GB or higher
  - Basic Laptop

- **Software Requirements:**
  - Anaconda Navigator
  - Jupyter Notebook
  - Python version 3.6 or higher
  - Packages:
    - OpenCV
    - TensorFlow
    - Keras
    - Pygame

Signature of Project Supervisor: _____