PRESIDENCY UNIVERSITY
PRESIDENCY SCHOOL OF INFORMATION SCIENCE
MCA PROJECT 2025
ABSTRACT REVIEW FORM

Project No: 221	Name of Student: Ankitha G	Section: 4MCA-05

Project Title: DROWSY DRIVER DETECTION SYSTEM USING DEEP LEARNING

ABSTRACT

Driver drowsiness detection systems continuously monitor the driver's behaviour and inform them if they exhibit signs of tiredness in an effort to prevent accidents brought on by driver fatigue. In order to identify whether a driver is drowsy or not, these systems combine a variety of computer vision techniques, such as **Histogram of Oriented Gradients (HOG)** for face detection and landmark extraction, and eye aspect ratio calculation. The technology operates by taking pictures of the driver's face in real time and analysing the features that can be extracted to gauge their level of awareness. The driver may receive a warning if the system notices signs of drowsiness, such as a visual, audio, or haptic warning, to assist them stay awake and alert while driving. The danger of accidents brought on by driver drowsiness can be decreased by incorporating these devices into automobiles, improving road safety and potentially saving lives. A popular computer vision technique for object detection, face recognition, and driver intoxication detection is the histogram of oriented gradients (HOG). HOG is used to detect faces and generate a feature vector from the face that captures its distinctive textures and contours in the context of driver drowsiness detection. This feature vector is subsequently sent into a classification **machine learning algorithm**. Based on patterns in the HOG features, such as the shapes of the eyes, the orientation of the eyebrows, and the position of the lips, the algorithm is trained to distinguish between "drowsy" and "not drowsy" faces. It is possible to accurately and robustly identify driver tiredness in real-time using HOG and a machine learning algorithm, enhancing road safety and lowering the probability of accidents. It is possible to accurately and robustly identify driver tiredness in real-time using HOG and a machine learning algorithm, enhancing **road safety** and lowering the probability of accidents.

1. **Keywords:** Driver drowsiness detection, Histogram of Oriented Gradients (HOG**),** Machine learning algorithm , Real-time monitoring , Road safety

Criteria	Rating (1 to 5)
Clarity of the Problem Statement	
Relevance of the Project	
Objectives	
Innovation and Originality	
Suitability for Research Publication	

Overall Assessment	Comments
Strengths of the Abstract:	
Weaknesses or Areas for Improvement:	
Recommendations	Approve ☐ Revise ☐ Reject ☐
Supervisor's Signature with Name	_____
Date:	_____