

DRIVER DROWSINESS DETECTION SYSTEM

A PROJECT REPORT

Submitted by

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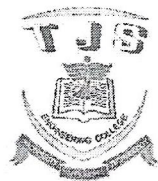
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Of

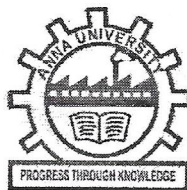
BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING



T.J.S. ENGINEERING COLLEGE, PERUVOYAL



ANNA UNIVERSITY: CHENNAI 600 025

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BONAFIDE CERTIFICATE


Certificate that this project report "DRIVER DROWSINESS DETECTION SYSTEM" is the bonafide work of the following students.

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Who carried out the project work under my supervision


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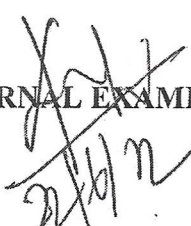
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Submitted for viva voce held on 22/06/22 at T.J.S. Engineering College, Peruvoyal.


INTERNAL EXAMINER


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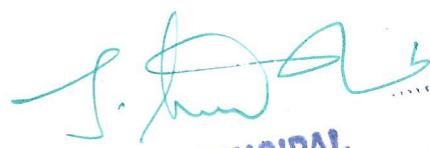

EXTERNAL EXAMINER

ABSTRACT

The main idea behind this project is to develop a nonintrusive system which can detect fatigue of human and can issue a timely warning. Drivers who do not take regular breaks when driving long distances run a high risk of becoming drowsy a state which they often fail to recognize early enough. According to the expert's studies show that around one quarter of all serious motorway accidents are attributable to sleepy drivers in need of a rest, meaning that drowsiness causes more accidents than drink-driving. This system will monitor the driver eyes using a camera and by developing an algorithm we can detect symptoms of driver fatigue early enough to avoid the person from sleeping. So, this project will be helpful in detecting driver fatigue in advance and will give warning output in form of alarm and popups.

Moreover, the warning will be deactivated manually rather than automatically. For this purpose, a deactivation dialog will be generated which will contain some simple mathematical operation which when answered correctly will dismiss the warning. Moreover, if driver feels drowsy there is possibility of incorrect response to the dialog. We can judge this by plotting a graph in time domain. If all the three input variables show a possibility of fatigue at one moment, then a warning signal is given in form of text and sound. This will directly give an indication of drowsiness/fatigue which can be further used as record of driver performance.

~~Keywords: Drowsiness, Supervised Learning, Unsupervised Learning, Machine Learning.~~



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OBJECTIVES:

- To understand the various characteristics of Intelligent agents
- To learn the different search strategies in AI
- To learn to represent knowledge in solving AI problems
- To understand the different ways of designing software agents
- To know about the various applications of AI.

UNIT I INTRODUCTION

9

Introduction-Definition - Future of Artificial Intelligence - Characteristics of Intelligent Agents-Typical Intelligent Agents - Problem Solving Approach to Typical AI problems.

UNIT II PROBLEM SOLVING METHODS

9

Problem solving Methods - Search Strategies- Uninformed - Informed - Heuristics - Local Search Algorithms and Optimization Problems - Searching with Partial Observations - Constraint Satisfaction Problems - Constraint Propagation - Backtracking Search - Game Playing - Optimal Decisions in Games - Alpha - Beta Pruning - Stochastic Games

UNIT III KNOWLEDGE REPRESENTATION

9

First Order Predicate Logic - Prolog Programming - Unification - Forward Chaining-Backward Chaining - Resolution - Knowledge Representation - Ontological Engineering-Categories and Objects - Events - Mental Events and Mental Objects - Reasoning Systems for Categories - Reasoning with Default Information

UNIT IV SOFTWARE AGENTS

9

Architecture for Intelligent Agents - Agent communication - Negotiation and Bargaining - Argumentation among Agents - Trust and Reputation in Multi-agent systems.

UNIT V APPLICATIONS

9

AI applications - Language Models - Information Retrieval- Information Extraction - Natural Language Processing - Machine Translation - Speech Recognition - Robot - Hardware - Perception - Planning - Moving

TOTAL :45
PERIODS**OUTCOMES:**

Upon completion of the course, the students will be able to:

- Use appropriate search algorithms for any AI problem
- Represent a problem using first order and predicate logic
- Provide the apt agent strategy to solve a given problem
- Design software agents to solve a problem
- Design applications for NLP that use Artificial Intelligence.

TEXT BOOKS:

- 1 S. Russell and P. Norvig, "Artificial Intelligence: A Modern Approach", Prentice Hall, Third Edition, 2009.
- 2 I. Bratko, "Prolog: Programming for Artificial Intelligence", Fourth edition, Addison-Wesley Educational Publishers Inc., 2011.



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1. M. Tim Jones, "Artificial Intelligence: A Systems Approach(Computer Science)", Jones and Bartlett Publishers, Inc.; First Edition, 2008
2. Nils J. Nilsson, "The Quest for Artificial Intelligence", Cambridge University Press, 2009.
3. William F. Clocksin and Christopher S. Mellish," Programming in Prolog: Using the ISO Standard", Fifth Edition, Springer, 2003.
4. Gerhard Weiss, "Multi Agent Systems", Second Edition, MIT Press, 2013.
5. David L. Poole and Alan K. Mackworth, "Artificial Intelligence: Foundations of Computational Agents", Cambridge University Press, 2010.



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