**SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN:: BHIMAVARAM**

**(AUTONOMOUS)**

**DEPARTMENT OF CSE**

**Academic Year:: 2021-22 :: II Semester**

**B.Tech - PROJECT WORK:: ABSTRACT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of the Class / Section** | **IVth CSE - B** | | |
| **Batch Number** | **B6** | | |
| **Project Domain / Technology** | **Machine Learning (CNN)** | | |
| **Project Title** | **Detection of Fatigue in Drivers** | | |
| **Guide Name** | **T. Gayatri** | | |
| **Students Registered** | **Registered Number** | **Student Name** | **Student**  **Signature** |
| **18B01A0585** | **Sykam Geetha Bhavya Sri** | **Bhavya** |
| **18B01A0594** | **Kukkadapu Vyshnavi Tanuja** | **Tanuja** |
| **18B01A05A5** | **Nalabha Jeeshna Sarvani** | **Jeeshna** |
| **18B01A05A8** | **Panja Tulasi Lakshmi** | **Tulasi** |
| **18B01A05B5** | **Pulavarthi Pranathi** | **Pranathi** |

|  |  |  |
| --- | --- | --- |
|  |  |  |
| **Signature of**  **Internal Project Guide** | **Signature of**  **B.Tech Project – Coordinator** | **Signature of**  **Head of the Department** |

|  |  |  |
| --- | --- | --- |
| **Abstract of the Project ( In 200 words)** | | |
| Sleepy drivers are one of the causes of road accidents, which claim many fatalities each year. Because drowsiness is a possible cause of road danger, one of the best methods to avoid it is to install a drowsiness detection system. Another technology that can save many lives is a driver sleepiness detection system that continuously assesses the driver’s eyes and alerts him with alarms if the system detects that the driver closes his eyes very often. A webcam is required for this project for the system to monitor the driver’s eyes regularly. This **Python project** will require a deep learning model as well as packages such as OpenCV, TensorFlow, Pygame, and Keras to do this. | | |
| **Existing System (If any) – Features & Drawbacks** | | |
| There is an existing System called **driver sleepiness detection**which is also used to detect if the driver is sleepy or not but in our system, we want to add maps as an extra feature so that drivers can easily find nearby places this feature is very useful as Driver goes to new places he may or may not know the area there. Also, we want to make our project user-friendly by making it a docker image so that the clients no need to install anything for the project they just need to use the docker image (makes deployment easy).  **Proposed System – Features**  **List of objectives/features that are planned to implement.** | | |
| * Human Eye Detection * Dockerization of the model * Vocal Production when model detects sleepy Driver | | |
| **(i)Functional Requirements**  **(ii) Non Functional Requirements**  **(iii) Software & Hardware Requirements** | | |
| **Functional Requirements:**   * Take image as input from a camera * Detect the face in the image and create a Region of Interest (ROI). * Detect the eyes from ROI and feed it to the classifier. * Classifier will categorize whether eyes are open or closed. * Calculate score to check whether the person is drowsy.   **Non Functional Requirements:**   * Access to Camera * Produces Vocal sound when model finds driver sleepy   **Software Requirements:**  **Operating system :** any Windows OS  **Client program:** Internet Explorer  **Editor :** Visual studio Code  **Technologies:** CNN , Python.  **HARDWARE REQUIRMENTS:**  **Processor:** i3  **RAM:** 512MB  **Hard disk:** 10GB | | |
| **Literature Survey** | <https://towardsdatascience.com/a-comprehensive-guide-to-convolutional-neural-networks-the-eli5-way-3bd2b1164a53>  <https://www.geeksforgeeks.org/convolutional-neural-network-cnn-in-machine-learning/> | |
| **Modules** | **Expected date of completion** | |
| **Building Model** | 21 – 02 - 2022 | |
| **Training Model** | 10-03-2022 | |
| **Face Detection** | 20 – 03 - 2022 | |
| **Eye Detection and Categorization** | 10 – 04 - 2022 | |
| **Dockerized Model** | 19 – 04 -2022 | |
| **Project Report** | 19 – 04 - 2022 | |