**DECLARATION BY THE CANDIDATE**

We the undersigned solemnly declare that the Minor project report entitled **“*Traffic management system using python*”** is based our own work carried out during the course of our study under the supervision of  ***Mr. Yogesh Rathore***

We assert that the statements made and conclusions drawn are an outcome of the project work. We further declare that to the best of our knowledge and belief that the report does not contain any part of any work which has been submitted for the award of any other degree/diploma/certificate in this University/Deemed university of India or any other country.

Signature of the Student

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This is to certify that the Minor project report entitled **“*traffic management system using python*”** is a record of project work carried out under my guidance and supervision for the fulfillment of the award of degree of Bachelor of Engineering in the faculty of Computer Science & Engineering of Chhattisgarh Swami Vivekananda Technical University, Bhilai (C.G.) India.

To the best of my knowledge and belief the report

1. Embodies the work of the candidate himself
2. Has duly been completed
3. Fulfills the partial requirement of the ordinance relating to the B.E. degree of the University
4. Is up to the desired standard both in respect of contents and language for being referred to the examiners.

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(Signature of the Supervisor)

**Mr. Yogesh Rathore**

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Bhilai

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(Signature of the Principal)

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Raipur, C.G

**CERTIFICATE BY THE EXAMINERS**

The project report entitled **“*traffic management system using python”*** has been examined by the undersigned as a part of the examination of Bachelor of Engineering in the faculty of Computer Science & Engineering of Chhattisgarh Swami Vivekanand Technical University, Bhilai.

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**Internal Examiner External Examiner**

**Date: Date:**

**Acknowledgement**

Working for this project has been a great experience for us. There were moments of anxiety, when we could not solve a problem for the several days. But we have enjoyed every bit of process and are thankful to all people associated with us during this period we convey our sincere thanks to our project guide **Mr. Yogesh Rathore** for providing me all sorts of facilities. His support and guidance helped us to carry out the project. We owe a great dept. of his gratitude for his constant advice, support, cooperation & encouragement throughout the project we would also like to express our deep gratitude to respected **Dr. J P Patra** (Head of Department) for his ever helping and support. We also pay special thanks for his helpful solution and comments enriched by his experience, which improved our ideas for betterment of the project. We would also like to express our deep gratitude to respected **Dr. Alok Kumar Jain** (Principal) and college management for providing an educational ambience. It will be our pleasure to acknowledge, utmost cooperation and valuable suggestions from time to time given by our staff members of our department, to whom we owe our entire computer knowledge and also we would like to thank all those persons who have directly or indirectly helped us by providing books and computer peripherals and other necessary amenities which helped us in the development of this project which would otherwise have not been possible.

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**List of Abbreviations**

|  |  |
| --- | --- |
| FCW | Forward Collision Warning |
| DSM | Driver Status Monitoring System |
| ADAS | Advance Driver Assistance System |
| MPEG | Moving Picture Experts Group |

**LIST OF FIGURES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.No.** | **Figure No.** | | **Description** | **Page No.** |
| **1** | FIGURE 1 | | STABLE BACKGROUND IMAGE | 7 |
| **2** | FIGURE 2 | | IMAGE UNDER INVESTIGATION | 7 |
| **3**  **4**  **5**  **6**    **7**      **8**  **9** | FIGURE 3  FIGURE 4  FIGURE 5  FIGURE 6  FIGURE 7  FIGURE 8  FIGURE 9 | | SELETED CENTRELINE ON EACH  LANE  CURRENT FRAME AND EXTRACTED PIXELS ON LANE  INTERFACE OF VEHICLE DETECTION  VIDEO CLIPS USED TO DETECT THE PROPOSED ALGORITHM  CAMERA CALIBERATIONS   * OPTIMUM CALIBERATION * IMPROPER LANE SELECTION   COMPARISON OF COUNTING RESULTS FOR DIFFERENT TIME INTERVALS OF LANE 1 AND LANE 3  COMPARION OF CLASSIFICATION BEWEEN ACTUAL AND CCT SYSTEM FOR EACH LANE | 9  **9**  **19**  **20**    **21**  **21**  **21**    **22**      **23** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

**Table of Contents**

Chapter Title Page No.

ABSTRACT

1 1 INTRODUCTION 1-5

1.1 OVER VIEW 3-4

1.2 APPLICATIONS 5

2 2 LITERATURE REVIEW 6 -16

2.1 CAMERA CALLIBERATION 8 2.2 LANE CALLIBERATION 9

2.3 VEHICLE TRACKING 10 2.4 VEHICLE CLASSIFICATION 11 2.5 VEHICLE COUNTING CONCEPT 12-13

2.6 VEHICLE TRACKING 14 2.7 STEPS FOR VEHICLE DETECTION AND

CLASSIFICATION 15

2.8 STATEMENT OF THE PROBLEM 13

3 3 SOFTWARE REQUIREMENTS 17

3.1 SOFTWARE’S REQUIRED/VERSIONS 17

4 4 HARDWARE REQUIREMENTS 18

4.1 HARDWARE REQUIRED 18

5 5 FRONT END SNAP SHOTS 19

5.1 FRONT END USED 19

5.2 SNAPSHOT 19

6 6 RESULTS & ANALYSIS 20-23

7 7 FEATURES & ADVANTAGES 24-26

7.1 FEATURES 24

7.2 ADVANTAGES 25

7.3 THE LIMITATION OF THE STUDY 26

8 CONCLUSION & FUTURE ENHANCEMENT 27-29

8.2 FUTURE ENHANCEMENT 29

REFERENCES 30

PAPER PUBLICATION

**ABSTRACT**

This work was carried out to determine the performance of image processing techniques in classifying and counting moving vehicles in video streams of traffic scenes recorded by stationary cameras. The detection and tracking approach is as follows. The moving vehicles are first extracted from the traffic scene by applying the adoptive background subtraction technique. After the background subtraction, using threshold and median filters, isolated image blobs are identified as individual vehicles. Once the blobs are identified, counting and classification of vehicles in a selected region are carried out. The preliminary results show that the developed system can efficiently and reliably track vehicles when unobstructed view of the traffic scene can be obtained. For optimal camera calibration, an accuracy better than 80% in counting vehicles was observed. The present system performs better with video data in which the vehicles are moving away from the camera compared to the video data in which the vehicles are moving towards the camera. The results obtained through the developed system show that with further improvements the system can be used in real-time to count and classify vehicles on busy traffic routes.