**MINI PROJECT REPORT**

**ON**

**FACE DETECTION USING PYTHON**

**B. Tech**

IN

**Computer Science and Business Systems**

**Submitted By**

|  |  |
| --- | --- |
| **Name** | **Univ. Roll No.** |
| Satyam Kr Mallick | 10831120005 |
| Sushmita Dhar | 10831120006 |
| Rounak Baishakhiyar | 10831120008 |
| Akash Yadav | 10831120011 |
|  |  |

**Under the supervision of:**

**Name of the Project Guide**

Designation of the Guide

Department of the Project Guide



**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**ASANSOL ENGINEERING COLLAGE**

**AFFILIATED TO**

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY**

Month, Year

***Contents***

|  |  |  |  |
| --- | --- | --- | --- |
| Certificate of Recommendation……………………………………………………………… | | | iii |
| Certificate of Approval………………………………………………………………............. | | | iv |
| Acknowledgement…………………………………………………………............................ | | | v |
| Abstract…………………………………………………………………………...………….. | | | vi |
| List of Figures………………………………………………………………………………. | | | vii |
| List of Tables………………………………………………………………………………. | | | viii |
|  | | |  |
| **1.** | **Introduction** | |  |
|  | 1.1 | Problem Definition……………………………………………...……………..... | 1 |
|  | 1.2 | Motivation of the project………………………………….…………………....... | 2 |
|  | 1.3 | Basic description of the project………………………….……………………..... | 3 |
| **2.** | **Literature Review** | |  |
|  | 2.1 | Review of related works …………………………. …………......….…...…….... | 6 |
| **3.** | **Related Theories and Algorithms** | |  |
|  | 3.1 | Fundamental theories underlying the work.…………………………………....... | 8 |
|  | 3.2 | Fundamental algorithms………………………………….…………………….... | 10 |
| **4.** | **Proposed model/algorithm** | |  |
|  | 4.1 | Proposed model………………………………………………………………...... | 12 |
|  | 4.2 | Proposed algorithms……………………….…………………………………...... | 16 |
| **5.** | **Simulation Results and Performance analysis** | |  |
|  | 5.1 | Experimental set up ……………………………………………..…………........ | 20 |
|  | 5.2 | Experimental results………...……………...……................................................ | 25 |
|  | 5.3 | Performance Analysis........................................................................................... |  |
| **6.** | **Conclusion and Future Scope** | |  |
|  | 6.1 | Conclusion…………………………………..………………………….……...... | 30 |
|  | 6.2 | Future work…………………………………..….……………………...……..... | 32 |
| **References……………………………………………………………………………...............** | | |  |
| **Appendix......................................................................................................................................** | | |  |

|  |  |
| --- | --- |
|  | **DEPARTMENTOF COMPUTER SCIENCE AND ENGINEERING** |
| **ASANSOL ENGINEERING COLLEGE**  Vivekananda Sarani, Kanyapur, Asansol, West Bengal – 713305 |

***Certificate of Recommendation***

I hereby recommend that the preliminary project report entitled, **“Real time face detection using Python”** carried out under my supervision by the group of students of Bachelor of Technology in Computer Science and Engineering of Asansol Engineering College under MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY.

|  |  |
| --- | --- |
| **Name** | **Univ. Roll No.** |
| Satyam Kr Mallick | 10831120005 |
| Sushmita Dhar | 10831120006 |
| Rounak Baishakhiyar | 10831120008 |
| Akash Yadav | 10831120011 |
|  |  |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Guide Name**

Project Supervisor

Department of Computer Science and Engineering

Asansol Engineering College

Asansol – 713305

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Countersigned:

**Name of the Head of the Department**

Head of the Department

Dept. of Computer Science and Engineering,

Asansol Engineering College,

Asansol-713305

|  |  |
| --- | --- |
|  | **DEPARTMENTOF XXX ENGINEERING** |
| **ASANSOL ENGINEERING COLLEGE**  Vivekananda Sarani, Kanyapur, Asansol, West Bengal – 713305 |

***Certificate of Approval***

The forgoing thesis is hereby approved as creditable study of an engineering subject carried out and presented in a manner satisfactory to warrant its acceptance as prerequisite to the degree for which it has been submitted. It is understood that by this approval the undersigned does not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the thesis only for the purpose for which it is submitted.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Guide Name**

Project Supervisor

Department of Computer Science and Engineering

Asansol Engineering College

Asansol – 713305

***Acknowledgement***

It is our great privilege to express our profound and sincere gratitude to our Project Supervisor, **Guide Name** for providing us a very cooperative and precious guidance at every stage of the present project work being carried out under his/her supervision. His valuable advice and instructions in carrying out the present study has been a very rewarding and pleasurable experience that has greatly benefited us throughout the course of work.

We would like to convey our sincere gratitude towards **Dr Avishek Banerjee**, Head of the Department of Computer Science and Business Systems, Asansol Engineering College for providing us the requisite support for timely completion of our work. We would also like to pay our heartiest thanks and gratitude to all the teachers of the Department of Computer Science and Engineering, Asansol Engineering College for various suggestions being provided in attaining success in our work.

Finally, I would like to express my deep sense of gratitude to my parents for their constant motivation and support throughout my work.

…………………………………

(Student 1)

…………………………………

(Student 2)

…………………………………

(Student 3)

…………………………………

(Student 4)

………………………………

(Student 5)

***Date: DD/MM/YYYY***

***Place: Asansol***

***Abstract***

***List of Figures***

|  |  |  |
| --- | --- | --- |
| Fig. 2.1 | XXXXX | Page no |
| Fig. 2.2 | XXXXX | Page no |
| Fig. 2.3 | XXXXX | Page no |

***List of Tables***

|  |  |  |
| --- | --- | --- |
| Table 4.1 | XXXXX | Page no |
| Table 5.1 | XXXXX | Page no |
| Table 5.2 | XXXXX | Page no |

1. **Introduction**
   1. **Problem Definition**

**Using camera of the device (PC) identify one or more human faces.**

* 1. **Motivation of the project**

**The motivation of the project is actually the fact that how face detection is the beginner stage for the following- Face Analysis, Face tracking and face recognition.**

**Real time face detection is applicable in many other domains.**

* 1. **Basic description of the project**

**Our project Real time face detection using Python uses the PC camera and identifies all different human faces present in the screen. It is a very beginning stage of face detection.**

**The face detection using Python uses OpenCV of Machine learning to search for faces within a scene.**

**OpenCV is in fact one of the most popular and probably one of the simplest way to detect faces using python. The algorithms break the task of identifying the face into thousand of smaller, byte-sized tasks, each of which is easy to solve using a classifier.**

**Our project also uses Haar Cascade which is an Object Detection Algorithm used to identify faces in an image or a real time video.**

1. **Introduction**
   1. **Problem Definition**
   2. **Motivation of the project**
   3. **Basic description of the project**
2. **Literature Review**
   1. **Review of related works**
3. **Related Theories and Algorithms**
   1. **Fundamental theories underlying the work**
   2. **Fundamental algorithms**
4. **Proposed model/algorithm**
   1. **Proposed model**
   2. **Proposed algorithms**
5. **Simulation Results and Performance analysis**
   1. **Experimental set up**
   2. **Experimental results**
   3. **Performance Analysis**
6. **Discussion and Conclusion**
   1. **Conclusion**
   2. **Future Work**

**References**