**PROJECT STATUS REPORT FOR 7th Semester**

Note: Please Specify NA if not applicable and AS if already submitted.

1. **GROUP NO (If ANY):** CS-14

2. **Department/Program:** Computer science & Engineering, B.Tech final year

3.

* **Date of Project Report Submission:** 26/11/2018
* **Extended work of Last (6th) semester:** No
* **New Project/Date of Change (Changed in the 7th semester):** 20/07/2018

4. **MENTOR NAME:** Dr. Dinesh Singh

5. **Status of the Project** (Changes done with respect to your previous reports):

Performed face detection using both OpenCV and dlib,also performed Gender and Emotion detection using FisherFace Recognizer by training it on KDEF and IMDB-WIKI datasets.

6. **Project Detail:**

* **Title**: Faceplay-Face ,Gender and Emotion detection using OpenCV,dlib and FisherFace Recognizer.
* **Title of Last Semester Project/Mini Project**: Simulation of Blackhole attack in Network Simulator 3.

7. **Origin of the Project**

(Technicality and motivation behind this work should be elaborated)

In the modern era of technology where artificial intelligence impacts every sector of human life, can it impact the very difference between humans and machines? Emotions, are the defining contrast which can be augmented and analysed by the virtue of our projects. Thus, we intend to employ standards of face recognition and emotion detection and create a real time way to find the emotions of the people interacting over a video call or through webcam.

8**. Other Similar ideas available on internet** (Please mention origin of sources like website addresses, ftp address etc):

https://www.pyimagesearch.com/2018/06/18/face-recognition-with-opencv-python-and-deep-learning/

https://www.sciencedirect.com/science/article/pii/S1877042813018326

[h](http://etd.fcla.edu/CF/CFE0001314/YEUNG_CHUN_S_200608_MS.pdf)ttps://www.apprendimentoautomatico.it/apprendimentoautomatico-wpblog/en/emotions-detection-via-facial-expressions-with-python-opencv/

https://www.hackster.io/mjrobot/real-time-face-recognition-an-end-to-end-project-a10826

9. **Importance of the proposed project in the context of current status and its relevance to computer science and engineering** (Highlight what is the new area or gap which will be solved in the project in relating to what is already known.)

* Face recognition system is one of those technology marvels where a machine can act almost as intelligently as that of a human, that is it can recognize a human from its face and distinguish them from the rest. We have included gender detection as well as emotion detection and it can be empasized which has numerous practical applications in the area of biometrics, information security and act as a medium to communicate human emotions.
* Computer Vision is mimicking the abilities of human vision by electronically perceiving and understanding an image. It is a broad term and includes a lot of domains like Gesture Recognition, Optical Character Recognition, Face detection and a lot more. Thus our projects stems out as a part of computer vision and machine learning.

10. **Work Plan** (Prepare a time chart to show Time Schedule of activities)

* **Methodology:**
* Became familiar with OpenCV library and it’s relevant functions for processing of images and available classifiers present in it for face detection.
* Performed face and eye detection using Haar classifiers provided under OpenCV.
* Explored better methods for face detection and became familiar with Dlib Library which has ability to detect various facial landforms.
* Performed face detection and extraction of facial regions using Dlib.
* Became familiar with FisherFace Recognizer under OpenCV for gender and emotion detection.
* Trained FisherFace Recognizer and obtained a model for gender(Male,Female) and emotion detection(afraid,angry,disgusted,happy,neutral,sad,surprised) on images from KDEF and IMDB-WIKI dataset and obtained accuracy results on sample images.
* Performed gender and emotion detection using model obtained from above on test images as well as frames from video capture.
* **Time Schedule of activities**

|  |  |
| --- | --- |
| Activity | No. of weeks |
| Became familiar with OpenCV library and it’s relevant functions for processing of images and available classifiers present in it for face detection | 1 WEEK |
| Performed face and eye detection using Haar classifiers provided under OpenCV. | 1 WEEK |
| Explored better methods for face detection and became familiar with Dlib Library has ability to detect various facial landforms. | 2 WEEK |
| Performed face detection and extraction of facial regions using Dlib | 2 WEEKS |
| Became familiar with FisherFace Recognizer under OpenCV for gender and emotion detection. | 1 WEEKS |
| Trained FisherFace Recognizer and obtained a model for gender(Male,Female) and emotion detection(afraid,angry,disgusted,happy,neutral,sad,surprised) on images from KDEF and IMDB-WIKI dataset and obtained accuracy results on sample images | 4 WEEKS |
| Performed gender and emotion detection using model obtained from above on test images as well as frames from video capture. | 2 WEEKS |

* **Outcome expected from the project and its relevance to computer science and engineering.**
* Visual intelligence is providing not just superficial identity but it’s also checking on emotions, expressions, and features to target audience accordingly. Facebook has filed patents for technology allowing tailoring ads based on users’ facial expressions.
* Face identification can be used in a future car which can tell us if the driver is happy or sad.
* **Summary of roles/responsibilities of all students**:

|  |  |
| --- | --- |
| ACTIVITY | STUDENT ROLE |
| Became familiar with OpenCV library and it’s relevant functions for processing of images and available classifiers present in it for face detection | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma  5. Amit Ranjan |
| Performed face and eye detection using Haar classifiers provided under OpenCV. | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma  5. Amit Ranjan |
| Explored better methods for face detection and became familiar with Dlib Library has ability to detect various facial landforms. | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma |
| Performed face detection and extraction of facial regions using Dlib | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy. |
| Became familiar with FisherFace Recognizer under OpenCV for gender and emotion detection. | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma |
| Trained FisherFace Recognizer and obtained a model for gender(Male,Female) and emotion detection(afraid,angry,disgusted,happy,neutral,sad,surprised) on images from KDEF and IMDB-WIKI dataset and obtained accuracy results on sample images | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma |
| Performed gender and emotion detection using model obtained from above on test images as well as frames from video capture | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma |
| Documentation and result analysis | 1. Deepak Bulani  2. Gaurav Agarwal  3. Bonthu Harsha Vardhan Reddy 4. Avichal Verma  5.Amit Ranjan |

**Student’s information**

|  |  |  |  |
| --- | --- | --- | --- |
| S No. | Name | Registration No. | Signature |
| 1. | Deepak Bulani | 20153026 |  |
| 2. | Gaurav Agarwal | 20154097 |  |
| 3. | Bonthu Harsha Vardhan Reddy | 20154148 |  |
| 4. | Avichal Verma | 20154085 |  |
| 5. | Amit Ranjan | 20154101 |  |

Comments (if any):

Suggestions for improvement (if any):

**Signature of Mentor**

PANEL COMMENTS

Comments (if any):

Suggestions for improvement (if any):

**Signature of Panel Representative**