**Vivekanand Education Society’s Institute of Technology**

**Department of Computer Engineering**



**Subject: Artificial Intelligence Lab**

**Class :- T.E. (D12) Semester :- VI Div :- A**

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| Roll No:   16 | Name:  Rakshit Deshmukh | | | |
| Exp No:   01 | Title:  AI Lab Case Study | | | |
| DOP: | **22/03/2022** | | DOS: | **08/04/2022** |
| GRADE: |  | LAB OUTCOMES: | SIGNATURE: | |

Credentials

* Name: Rakshit Deshmukh
* Class: D12A
* Roll No: 16
* Subject: Artificial Intelligence

Title of the study

# “Face Recognition Application”

## Pattern Classification & Recognition

Introduction

Face recognition utilises its unique pipeline to detect and classify whether any given input or a test subject (an image) consists of the features the application has been trained on. The model segregates a binary answer on the presence of the features and then predicts whether the face present in the image is deemed that of a male or of a female individual. Such a system provides the starting point and the setup for automatic processing of image sequences with faces.

Algorithm

The system works in a very simple way, theoretically speaking. In the input image that comes in for the architecture, the algorithm determines the existence of the pre-defined features in that input image, namely a Doe Eyes, Beard, Adam’s Apple, Lipstick, Long Hair, Full Lips, Fair Skin and Blush Cheeks. All the parameters are filled with Boolean values, which in turn represent the happening for these features. Using these facial features, the presence of more than one of them determine the outcome for the given test subject. After calculating the most likely scenario for the given image subject’s gender, it is presented as the output.

PEAS Descriptor

1. Performance Measure:

The objective of the problem is that we need to extract the features of a Doe Eyes, Beard, Adam’s Apple, Lipstick, Long Hair, Full Lips, Fair Skin and Blush Cheeks and then match them with available features to find similarity & mark the face as the same person along with the name. The measures can be face visibility, distance between the camera and the person.

1. Environment:

The environment involved is the device for capturing the face of the person and the images generated subsequently.

1. Actuators:

Notification prompts, unlock sound, success alert, custom output.

1. Sensors:

Camera module, image module, facial features and aforementioned parameters.

Related Problems

The case of an attendance management system which involves physically marking students or entities present upon audio cues to the instructor. This can easily be modernized with the help of this face recognition system, which can be extended on to be integrated with a timestamp capturing algorithm and hence acknowledging the presence of the captured face on that timestamp, subsequently marking the attendance.