**MINI PROJECT – I**

**(2019-20)**

**Face Tracking Via Ardiuno**

**SYNOPSIS**



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**INTRODUCTION**

Last decade has provided significant progress in this area owing to advances in face detection and analysis techniques. The face is one of the easiest ways to distinguish the individual identity of each other. Face recognition is a personal identification system that uses personal characteristics of a person to identify the person's identity. Human face recognition procedure basically consists of two phases, namely face detection, where this process takes place very rapidly in humans, except under conditions where the object is located at a short distance away, the next is the introduction, which recognize a face as individuals. Stage is then replicated and developed as a model for facial image recognition (face recognition) is one of the much-studied biometrics technology and developed by experts. The area of this project face detection system with face recognition is Image processing. There are several reasons for recent increased interest in face recognition that the need for identity verification in the digital world, rising public concern for security, face analysis and modelling techniques in multimedia data management and computer entertainment.

These generally involve four main steps:

1.Face detection

2.Face preprocessing

3.Collect and learn faces

4.Face recognition

**Motivation:**

The main motivation for face recognition is because it is considered a passive, no intrusive system to verify and identify people.There are many other types of identification such as password, PIN (personal identification number) or token systems. The fact that a person has to expose their body to some device makes people feel being scanned and identified.

**Future Prospects:**

It can be updated in future and intrusive system to verify and identify people.There are many other types of identification such as password, PIN . It can minimize the crime on daily basis and also it can minimize human effort .

**Requirements:**

**Hardware Requirements:**

* Arduino UNO (You can use other boards )
* Web Cam ( Mini Web Cam)
* Servos x 2 (I'll be using micro servos but you can use Standard Servos)
* Breadboard (For prototyping)
* Servo Pan Tilt Kit (You can build one if you want)

**Software Requirements:**

* Python 2.7
* OpenCV (You can download it separately or install using 'pip install' )
* pyserial (Can be installed with pip)
* numpy.
* Haarcascade.