**A SEMINAR REPORT On**

# Face Detection & Recognition in organic video:

**A comparative study for sport celebrities database ----using deep learning**

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## COMPUTER SCIENCE AND ENGINEERING

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**FACE DETECTION & RECOGNITION IN ORGANIC VIDEO: A COMPERATIVE STUDY FOR SPORT CELEBRITIES DATABASE -USING DEEP LEARNING**

ABSTRACT:

Now-a-days with the continued development of artificial intelligence face detection recognition has become more popular. The face recognition plays a major role in interaction technology. In interaction technology the verbal components only play a one third of communication and the non-verbal components plays a two third of communication. A facial detection recognition (FDR) method is used for detecting face. Here proposes a real time facial emotion recognition system based on You Look Only Once (YOLO) version 2 architecture and a squeezenet architecture. The yolo architecture is a real time object detection system. Here it used for identify and detect faces in real time. These images are captured by using anchor boxes for accuracy. The second architecture is squeezenet and is used for gender classification and age estimation. It provides significant, accurate object detection and extracts high-level features that help to achieve tremendous performance to classify the image and detecting objects. Both the architectures provide accurate result than other methods with the large no of hidden layers and cross validation in the neural network.

**Keywords:**

* Face detection
* Face recognition
* Organic video
* You look only once (YOLO) architecture
* Squeezenet architecture

Objective:

* The main objective of face recognition is to find a series of a data of the same face in a set of a training images in a datatbase
* A facial recognition system is a computer application for automatically identifying or verifying a person from a digital image from the source.
* One of the ways to do this is by comparing selected facial features from the image and a facial database.

Four stages of identification:

**Capture:** Capture the behavioral sample

**Extraction:** unique data is extracted from the sample and a template is created

**Comparison:** the template is compared with a new sample

**Match/Non-Match:** the system decides whether the new sample are matched or not

**Introduction**:

In today’s networked world, the need to maintain the security of information or the physical property is becoming both increasingly important and increasingly difficult. Face recognition is the biometric methods that posses the merits of high accuracy. complex ana largely software based technique analyze unique shape , pattern & positioning of facial features . It compares scans to record stored in central or local database or even on a smart card.

What is biometric ?

It is a unique measurable characteristics of human being

It is used to automatically recognize an individual’s identity

A biometric system refers to integrated hardware and software used to conduct biometric identification

Existing System:

The face recognition plays a major role in Identification of face. In interaction technology the verbal components only play a one third of communication and the non-verbal components plays a two third of communication. A facial Detection recognition (FDR) method is used for detecting facial Detection. Face Detection plays a major role in recognition face and helpful for the securing of data using face

Drawbacks:

* Problem with false rejection when people change their hair style, grow or shave a beard or wear glasses.
* Face recognition systems can’t tell the difference between identical twins

**Proposed System:**

This paper aims to identify basic human Face detection with the combination of gender classification and age estimation.

Here proposes a real time facial emotion recognition system based on You Look Only Once (YOLO) version 2 architecture and a squeezenetarchitecture.

The yolo architecture is a real time object detection system. Here it used for identify and detect faces in real time. These images are captured by using anchor boxes for accuracy.

The second architecture is squeezenetand is used for gender classification and age estimation.

It provides significant, accurate object detection and extracts high-level features that help to achieve tremendous performance to classify the image and detecting objects.

Both the architectures provide accurate result than other methods with the large no of hidden layers and cross validation in the neural network.

**Advantages:**

* Convenient, social acceptability
* More user friendly
* Inexpensive technique of identification
* Secures the data

**Applications:**

* Time attendance and user authentication
* Social media profile moderation and verification
* Reducing online banking fraud
* Making an entrance at events
* Biometric border checks in Europe …….and many more

**System architecture:**

YOLO Y2

Processing

Real time input image

Output image with image detection

Sequeezent

Architecture

Image Detected

**Modules:**

* Upload Facial Recognition Dataset
* Preprocess the dataset
* Train the CNN Algorithm with the Yolo faces
* Accuracy Comparison graph
* Predict the facial Detection

**System Requirements:**

**Hardware Requirements: Software Requirements:**

System : Pentium Dual Core Operating system : Windows 10

Hard Disk : 120GB Coding language : Python

Monitor : 15’’LED Tool : PyCharm

Input Devices: Keyboard, Mouse Database : MYSQL

Ram : 1GB Server : Flask

**Conclusion:**

The use of machines in society has increased widely in the last decades. Nowadays, machines are used in many different industries. As their exposure with human’s increase, the interaction also has to become smoother and more natural. In order to achieve this, machines have to be provided with a capability that let them understand the surrounding environment. Specially, the intentions of a human being. Emotion recognition is still a difficult and a complex problem in computer science because every expression is a mix of emotions. Here proposed an efficient real time facial expression recognition system with the combination of two algorithms such as yolo version 2 and squeezenet architecture based on deep neural networks for more accurate and efficient facial expression recognition. The future scope can be an action that is done upon recognition of the emotions. If get a sad emotion, can have the systems plays a song or tells a joke or send his/her best friend a message. This can be the next step of AI where the system can accordingly. This bridges the gap between machines and humans. We can also have an interactive keyboard where the users can just use the app and the app will then identify the emotion and convert that emotion to the emoticon of choice.

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