



# FACIAL EMOTION DETECTION SYSTEM

<sup>1</sup>Anjitha kj, <sup>2</sup>Anila Jose

<sup>1</sup>M.Sc Scholar, <sup>2</sup>Assistant professor

<sup>1,2</sup>Department of computer science

St.joseph's college (Autonomous), Irinjalakuda, Thrissur, India

**ABSTRACT:** Facial Emotion detection system is human computer interaction system that performed in machine learning. Facial emoji detection system is an end user application that detects the facial expression of a person by the use of web camera. The smiley is displays on the screen and which changes with the changes in human being expression. Facial expressions are the important way to communicate and interact with other persons. This facial emoji detection system is mainly used in medical fields. This project is performed in base of CNN algorithms. CNN algorithm is mainly uses to detect the expressions and displaying emojis. The project mainly consists of two modules: admin and user.

**KEY WORDS:** machine learning, CNN algorithm

## I. INTRODUCTION

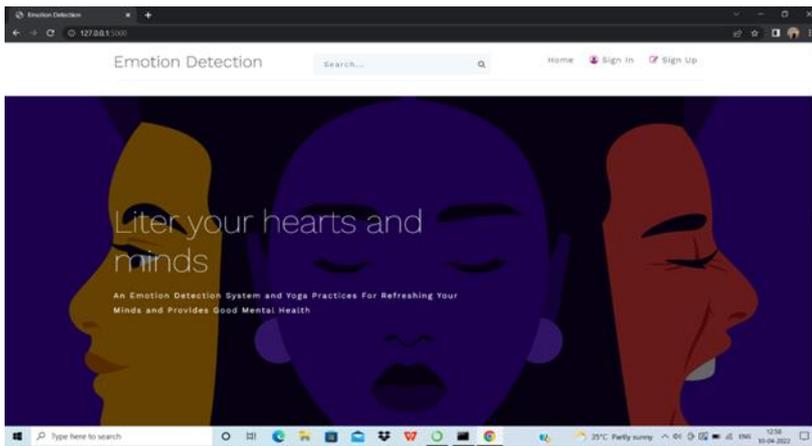
Facial emotion detection system is gaining a great attention in human machine interface and it also providing efficient way to communicate between humans. Facial expressions are the important way to communications. In this project facial expressions are detects by web camera and it displays relevant smileys to that expression. The facial emotion detection system is uses CNN Algorithm to detect the expressions and displaying emojis. This facial emoji detection system gives feasible approach to non-invasive emotion detection and displays emoji in real time. Due to the system the doctors can easily know the intensity level of deaf people illness. It is a real time project and develops automatic facial expression detection system by capturing video. In this project it also provides meditation features. It consists of two modules. The admin module can add doctors and manage doctor's details. The user module is login with mail id and password and in emotion detection feature the web cam will automatically activate and press q to capture facial expression and automatically shows relevant emoji and user can access the doctor's details. It is very helpful to understand our mind movements and it always provides some recommendations to mind relaxing.

## II. METHODOLOGY

Facial emoji detection system is uses CNN (Convolutional Neural Network) Algorithm to performing. The project works in base of machine learning language and the code works on visual studio code. There are mainly four methods to detect the human face that are, knowledge based, appearance based, feature based and template based. In facial emoji detection system has mainly 3 parts are: training, validation and testing. It mainly uses the tensor flow package and creates different convolutional layers to detect the face and recognize the expressions. emojis are used to expressing the emotions. The main purpose of this project is to understand the facial emotions. In real time and develop an expression recognition system by

web camera and classify these expressions into mainly 7 categories. This project is mainly useful in medical field it helps to understand the intensity level of illness of deaf people by online treatment.

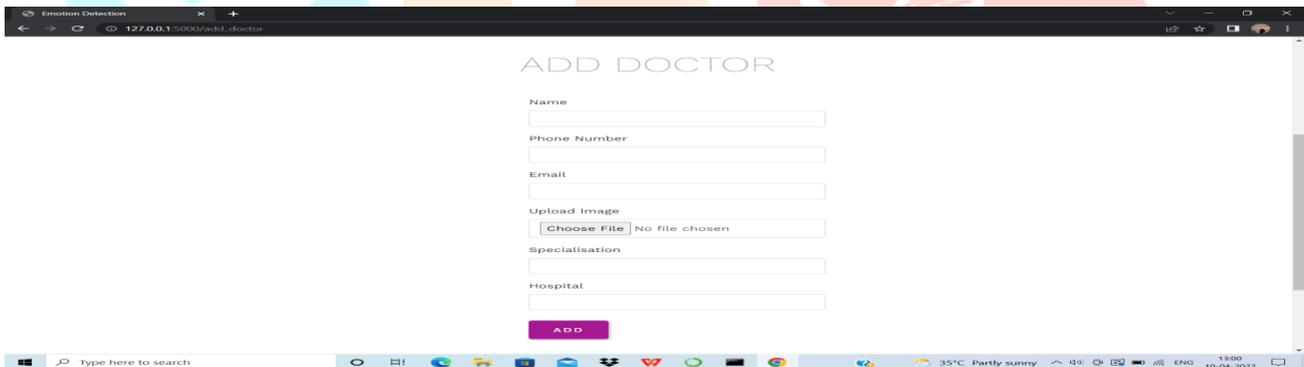
**Home page:**



**THE METHODOLOGY OF THE PROJECT IS MAINLY USES TWO MODULES:**

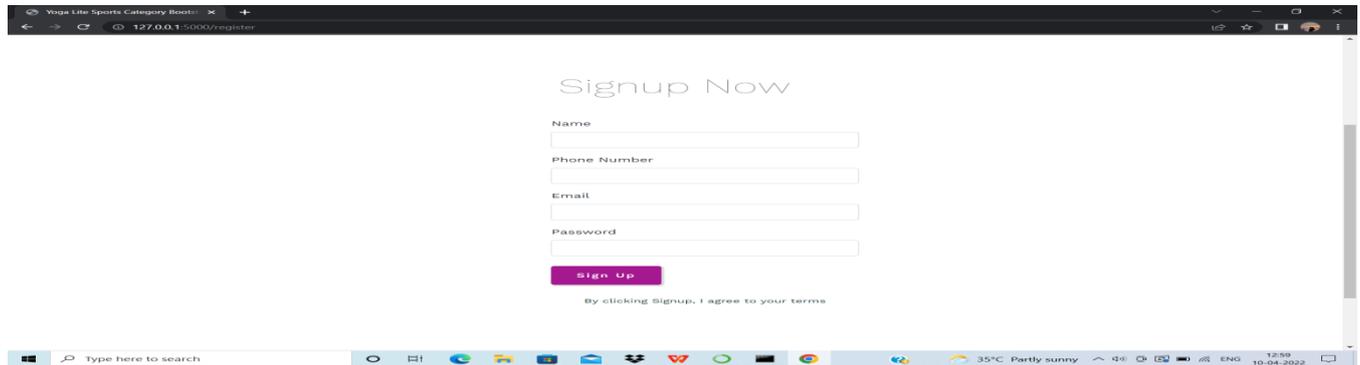
**ADMIN MODULE:**

Admin module is the developer or controller of the project. The admin module sign in with admin mail id and password. The main activity of the admin is adding doctor's details, edit doctor's details. Admin have the ability to remove the details of a doctor from the doctor's list.

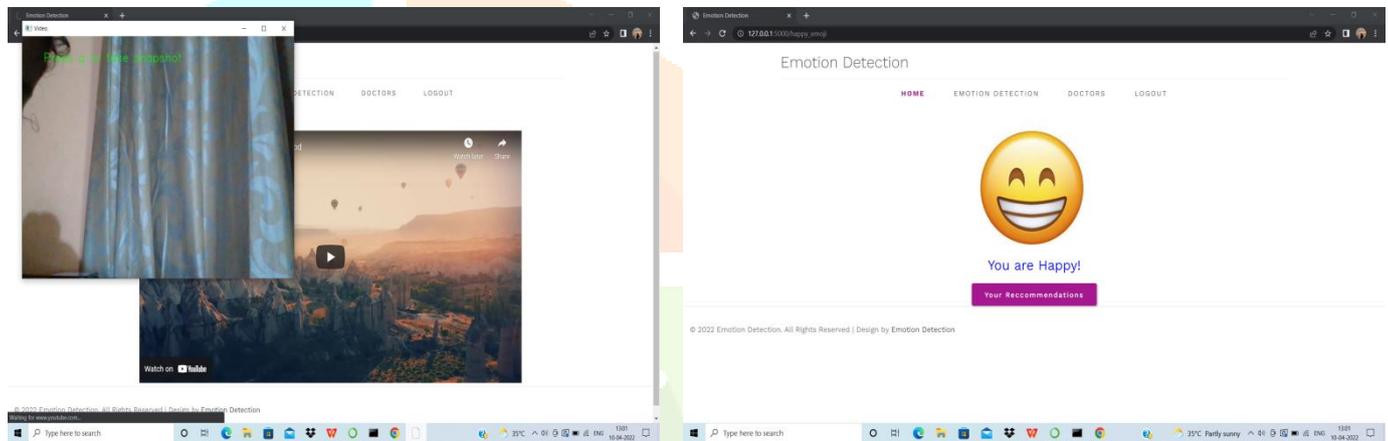


### USER MODULE:

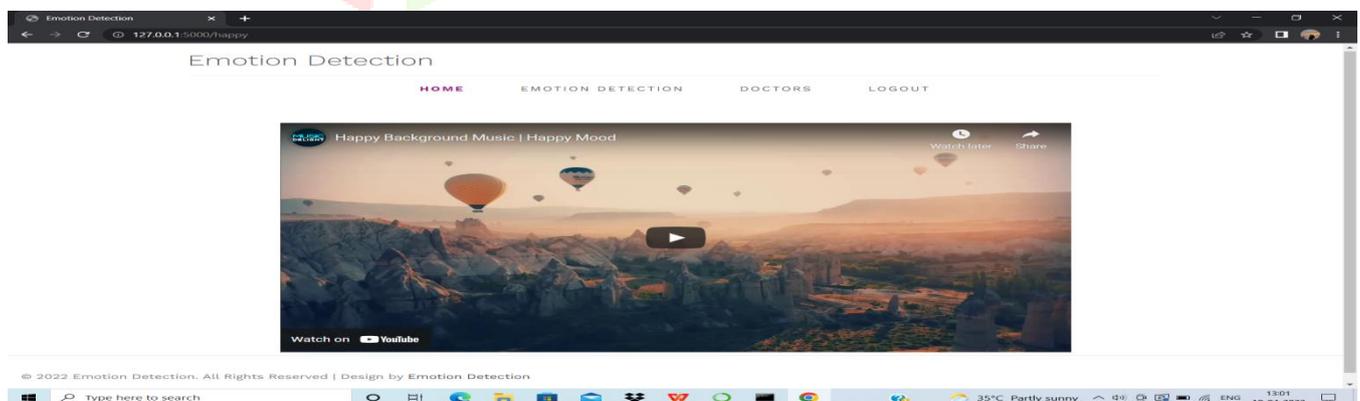
User module also needs to register first and sign with registered mail id and password. In user module emotion detection option is automatically on the web camera and press q to capture the face and automatically shows the relevant emoji to the captured emotion. There mainly 7 categorized emotions are ads into the project: sad, neutral, happy, surprised, angry, fearful and disgusted. The user can know his own feelings and the project provides the some recommended videos for mind relaxation. The user have also visible the doctor’s details and user can book the appointment of the doctor with the details.



### Image capturing:



### Recommending videos:



### III. CNN Algorithm

CNN stands for convolutional neural network. It mainly uses to facial recognition. In CNN there is only one feature map in the input layer and it used to normalizing the face image to CNN model. CNN algorithm is a deep learning algorithm it can take input image and assigning the importance into various objects. It has the ability to differentiate one image from another.

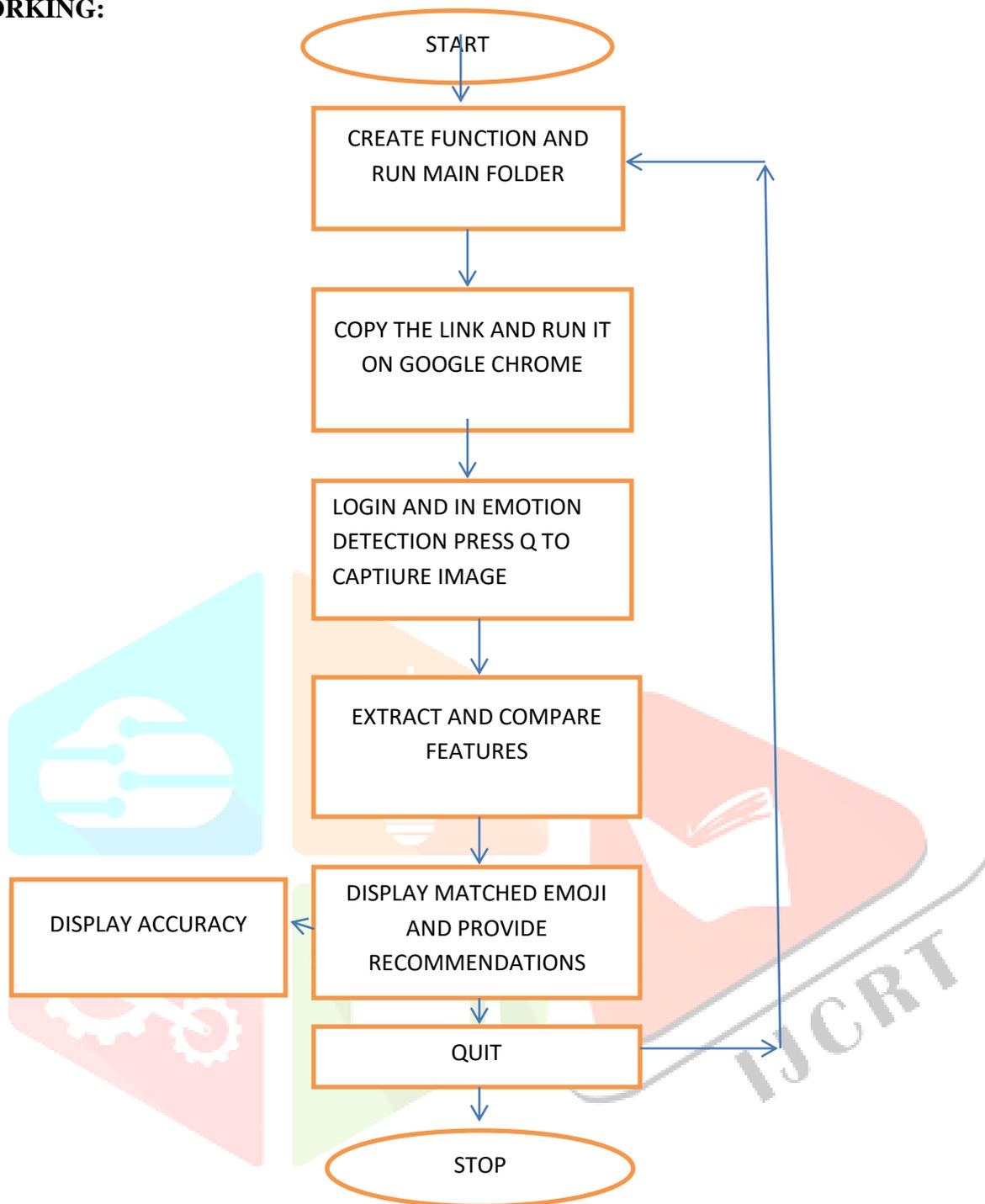
Facial emoji detection system is using CNN algorithm to model building of the project. Face recognition system has great importance in real world applications that are video surveillance, human machine interaction and security systems. In this project CNN architecture is adding two normalization operations to two of the layers. CNN is a multilayer network trained to performing different specific task using classification it has 95% accuracy using 2500 variant images in a class. In this project CNN algorithm is using 5 different components to increase the accuracy.

### IV. EXISTING SYSTEM

Existing system of facial emotion detection system is simply shown in the video or picture by expressing emotions. By the use of existing system we can't fully understands the human emotions. Most of the hospitals are providing online consultation because of that doctors can't fully understands the emotions of deaf people by the use of web camera. Use of this facial emotion detection system all emotions can easily understand the intensity level of illness.

### V. PROPOSED SYSTEM

Automated facial emotion detection system is the proposed system of the project. By the use of this system medical field have many more opportunities to online treatment. Use of automated facial emotion detection system the doctors can easily understand the intensity level of illness of deaf people during online treatment. Face detection is important part of many fields security services, video surveillance etc. Deaf peoples can easily communicate by using this project. In this project users can knows own feelings by capturing face and project provides some recommended videos and yoga for mind relaxation. Admin and user are the two modules used in this project. Admin module adds details of doctors and managing details. User can access the project and provides yoga and mind relaxation.

**WORKING:****VI. MACHINE LEARNING**

The facial emotion detection system project is performed in machine learning. Machine learning is the study of making decisions from a trained data set. Machine learning is a type of artificial intelligence. In machine learning algorithm input is historical data sets and predicts new output. Machine learning is used in wide range of applications.

## VII. DISCUSSION

Automated facial emotion detection system is provides efficient way to communicate between different humans. Facial expressions are important part of enhancing interaction through people. The purpose of this project is to develop the automated facial expression detection system. The project is mainly consisting of two modules admin and user.

## VIII. CONCLUSION

Facial emotion detection system is by using machine learning of artificial intelligence. This project helps to use in medical fields to find the intensity level of illness of deaf people. Emotions are the important part of communication through peoples. Automated emotion detection system is best way to identifies the interaction of deaf people.

## IX. REFERENCES

- [1] Dataset is from [www.kaggle.com/emotion-detection-from-facial-expressions/data](http://www.kaggle.com/emotion-detection-from-facial-expressions/data)
- [2] About tensor flow [www.tensorflow.org](http://www.tensorflow.org)
- [3]B.fasel and j. Luettin “automatic facial expression analysis. A survey“,pattern recognition, vol. 36, NO. 1. 2003,do;
- [4]Open CV from <https://opencv.org/>
- [5]vikas Gupta . face detection-opencv,dlib and deep learning(c++/python).oct 2018.
- [6]5 proportions of the face to know.
- [7]Matt Fussell.facial proportions-how to draw a face.