# Facial Emotion Detection Using Neural Network

**A PROJECT REPORT**

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**(Department of Computer Applications)**



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**CERTIFICATE**

Certified that **Akash Kumar Singh 2000290140011, Anil Kumar Singh 2000290140018,** have carried out the project work having “**Facial Emotion Detections Using Neural Network”** for Master of Computer Applications from Dr. A.P.J. Abdul Kalam Technical University (AKTU**)** (formerly UPTU), Technical University, Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or anybody else from this or any other University/Institution.

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

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**ABSTRACT**

#### Our Facial Emotion Detection Using Neural Network identifies emotions to the best of its capabilities depending on the internet and the hardware-implemented in the system. communication that varies in complexity, intensity, and meaning. The proposed system depends upon the human face as we know the face also reflects the human brain activities or emotions.

The addition or absence of one or more facial actions may alter its interpretation. In addition, some facial expressions may have a similar gross morphology but indicate varied meanings for different expression intensities. To capture the subtlety of facial expression in non-verbal communication,

We will use an existing simulator that will be able to capture human emotions by reading or comparing mood expressions. This algorithm automatically extracts features and their motion information, discriminates subtly different facial expressions, and estimates expression intensity.

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1. **Introduction**

Facial expressions are important in facilitating human communication and interactions. Also, they are used as an important tool in behavioral studies and in medical rehabilitation. Facial image-based mood detection techniques may provide a fast and practical approach for non-invasive mood detection. The purpose of the present study was to develop an intelligent system for facial image-based expression classification using committee neural networks.

## Overall Description

* 1. **Product Perspective**

An emotion recognition system can detect the emotional condition of a person either from his image or speech information. In this scope, an audio-visual emotion recognition system requires to evaluate the emotion of a person from his speech and image information together.

### Product Features

The software described in this SRS will be used to detect people's emotions. This project can be used in several areas that like to measure customer satisfaction in a marketing platform, helping advertisers to sell products more effectively.

### Project Scope

Modern-day security systems rely heavily on bioinformatics, like speech, fingerprint, facial images, and so on. Besides, the determination of a user’s emotional state with facial and voice analysis plays a fundamental part in human-machine interaction (HMI) systems, since it employs non-verbal cues to estimate the user’s emotional state. This software system will be able to perform emotion recognition from audio, video, and audio-visual video. With the easy-to-use user interface of the system, the user can either record instant video/real-time or upload an existing video to the system and perform emotion recognition. This system allows big corporate companies to measure customer satisfaction and perform the necessary analysis.

### - HARDWARE/SOFTWARE USED IN THE PROJECT

* 1. **Hardware Specification**

#### Central Processing Unit (CPU) - Intel Core i5 6th gen or AMD processor equivalent

* RAM - 8 GB minimum, 16 GB or higher is recommended.
* Graphics Processing Unit (GPU) - NVIDIA GeForce GTX 960 or higher
* Inbuilt Camera or Webcam Support
* Operating System (OS) - Ubuntu or Microsoft Windows 10
* Storage - 20 GB
  1. **Software Specification**
* Python 3 or above
* Library - open cv