**REPORT**

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**Title: Face Emotion Recognition Application using Tkinter.**

**Introduction:**

Facial expression is a non verbal scientific gesture which gets expressed in our face as per our emotions. Automatic recognition of facial expression plays an important role in artificial intelligence and robotics. Image processing is a method to perform some operations on an image, in order to extract some useful information from it.

Gabor filter was used in edge detection and feature extraction. It allows certain frequencies to pass and rejects others. It gives the highest response at edges and at points where texture changes

In this project we applied deep learning method to identify the human emotions like anger, happiness, sadness, surprise . Raw data was pre-processed and model was trained on it to give emotions. User registration was also created with tkinter.

We have obtained accuracy of 83%.

Tkinter was used to create GUI for this project.

# Dataset used to train model is FER-2013

Libraries used was sklearn, tkinter, tensorflow, keras, cv2.

**Usage :** Personal identification and Access control, Videophone and Teleconferencing, Forensic application, Human-Computer Interaction, Automated Surveillance etc

**Future Scope:** Increasing the accuracy of the model and developing an api of this project

**Conclusion:** the facial emotion recognition with tkinter was developed to understand the emotional characteristics of human face.