

# Emojify - Create Your Own Emoji

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**Abstract**—Today's world is Computer Science world and technology is omnipresent. Everything is getting shifted to Online mode or simply say Internet/Network. Even day to day human communication had also been transformed into digital communication through applications like Whats-App, Facebook, Instagram, Twitter, YouTube and many more. Due to this modification the way of representing any individuals thoughts and emotions had also been digitalized and transfigured as combination of visual and textual content in form of emojis and chat messages respectively. The computer science is upgrading its field since long period of time. However because of this enhancement, it is now achievable to get idea about human sentiments from their facial posture and mutate them into Emojis/Avatars/Stickers. This project is going to fabricate Emojis/Avatars from user's facial structure.

**Keywords**—Convolutional Neural Network(CNN), Python, Visual Studio.

## I. INTRODUCTION

Emojis are nothing but tiny pictures of emotions or we can also refer them as stickers. Emojis are the present-day channel of chatting with one another online. Emojis/Avatars have completely changed the way people used to communicate and now they are ruling the online mode of conveying the news and messages. Emojis are becoming the new language which will be used by people all over the world. Basically it is the new language or emerging language of the universe.

The reason of emojis getting used world wide is the simplicity they have in themselves. As already mentioned they are just little pictures like cartoons but they convey all the information about someone's state of mind, reaction or response to other individual's message sitting on the second side of communication medium. Straight-forwardly, emojis are nonverbal method of expressing feelings. Every so often, text messages are not able to transmit the emotions that sender wants to present to the receiver. To the rescue of text messages, emojis are there. Emojis can reflect ideas, state of mind, emotions or sentiments effectively and precisely. The logical formula that i use to state emojis is:

**Emoji = non verbal communication + emotions**

Since it is a non verbal mode, so user doesn't have to write long long paragraphs to express in which state he or she is! Hence, it's not very tedious task to do so, just one click on the emoji that matches with the user's present state of felling and there he/she goes! In support of my point, i would like to point out some famous characters in our history of entertainment.

- **Charlie Chaplin** had not spoken a single word in his entire TV show and yet he was able to make everyone laugh by expressing his emotions through changing the formation of face. He believed that his comedy would not translate to audiences via having talk. He did believed that facial expressions are the best way to communicate the emotions.
- **Mr. Bean**, (a cartoon character) loved by children, youngsters and also by adults. It has been characterized to only model facial expressions and not speak a word throughout the cartoon show, still everyone including children, youngsters and adults were able to figure it out what he is conveying and still to the present day they do.

Above two points shows the power of facial expressions, the strength they have to communicate the emotions, sentiments and feelings.

Emojis are available for use in almost all the digital platforms like Whats-App, Facebook and lot more. Due to the interest and affection of present generation in chatting or interacting through ways that include emojis, even the organizations and industries have started to take feedback's in form of emojis only. Emojis are getting turned into global language and there are researches going on to build emoji-driven storytelling.

In a nutshell, it is committed that people or present world generation love to communicate through emojis and avatars. So we have developed our project which is going to build our own customized emojis similar to human face formation. Our Project will be able to identify six human facial expressions such as emotions like happy, neutral , sad, surprise, angry, fearful, and disgusted. We have took our data-set from Kaggle having some thousands of images.

### ***A) Why emojiify is important?***

Emojiify is important because it allows people to express emotions and convey context more effectively in digital communication. Text based communication can be limited in conveying tone, sarcasm, humor, and other nuances that are more easily conveyed in face-to-face communications. Emojis add a visual element to digital communication that can help to fill this gap. In addition to enhancing the emotional expression and context of communication, emojis can also be used to save time and convey information more efficiently. For example, instead of typing out a long message explaining how you're feeling, you could simply send appropriate emoji that conveys the same emotion.

### ***B) What is lacking in current knowledge of emojiify?***

While emojiify has become an important aspect of modern digital communication, there are still areas where our current knowledge is lacking. Some of the key areas of uncertainty or gaps in our understanding of emojiify include:

**Cultural differences:** Emojis can have different meanings and connotations in different cultures and contexts.

**Use of non-standard emojis:** There are many non-standard emojis that are not part of the Unicode standard, and their meaning can vary depending on the platform or context in which they are used.

**Emojiify in professional communication:** While emojiify is widely used in informal communication, its use in professional contexts such as workplace communication is still being explored.

### ***C) Objective of study or research question for this project***

The main objective and point of focus for this point is to use the machine learning processing technique to develop more accurate and effective emojiify algorithms. We will be building a convolutional neural network which will be trained using thousands of images included in the dataset. The training will take a lot of time because it is a neural network which passes the information through various layers and fetch the hidden relationships among the data and learn accordingly. Hence, after training of the neural network, the project will be able to identify human facial expressions and build corresponding emojis/avatars.

## **II. LITERATURE SURVEY**

In this literature survey, we will explore the existing research and techniques used in emojiify projects that use images. We will review the most recent and relevant papers and articles that have investigated this topic. The survey aims to provide an overview of the current state-of-art and identify gaps in the research that need further exploration. Ultimately, the goal of this literature survey is to provide a comprehensive guide to researchers interested in the Emojiify-Create your own emoji project.

[1] “EmojiNet: A machine readable sense inventory for Emoji” by Sanjaya Wijeratne et al. This paper introduces EmojiNet, a machine-readable sense inventory for emoji that can be used to improve emoji-related NLP tasks.

[2] “Emoji2Vec: Learning Emoji Representations from their Description” by Bjarke Felbo et al. This paper proposes Emoji2Vec, a method for learning vector representations of emoji using their textual descriptions. The authors show that these representations can be used to perform emoji prediction in social media posts.

[3] “Emoji prediction using a hybrid neural network” by Muhammad Alshahrani et al. This paper proposes a hybrid neural network model that combines convolutional neural networks (CNNs) and long short-term memory (LSTM) networks for emoji prediction in tweets.

[4] “Emoji-CNN: Learning Emojis Representation with convolutional neural networks” by Jialong Tang et al. This paper proposes Emoji-CNN, a method for learning emoji representations using convolutional neural networks. The authors show that these representations can be used to improve sentiment analysis on social media posts.

[5] “Emoji-based emotion recognition using convolutional neural network and bidirectional LSTM” by Jing Chen et al. This paper proposes a method for emotion recognition in tweets using emoji-based features and combination of convolutional neural networks and bidirectional LSTM networks.

[6] “Multi-modal Emotion Recognition in the Wild” by Fabien Ringeval et al. This paper presents the results of the EmoReact challenge, which aimed to recognize emotions in videos using both audio and visual cues, including facial expressions and body language.

### ***A) Existing System***

There are existing systems and application for emojiify that use image recognition techniques to assign the most appropriate emoji to an input image. Here are some examples:

1. **Emoji:** Emojer is a mobile application that allows users to take a photo or upload an existing photo and receive a suggested emoji based on the content of the image. The application uses deep learning algorithms to recognize the objects, people, and scenes in the image and match them with the most appropriate emoji.
2. **Emoji Scavenger Hunt:** Emoji Scavenger Hunt is a web-based game that challenges users to find real-world objects that match a given emoji within a certain amount of time. The game uses machine learning to recognize the objects in the user's camera feed and assign the appropriate emoji.

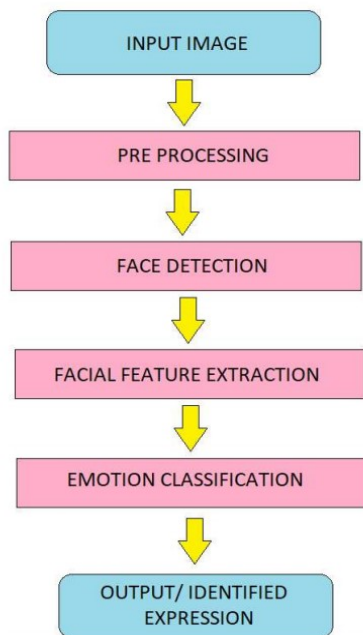
### ***B) Proposed System***

The proposed architecture for the system is a convolutional neural network that is pre-trained on a large dataset of images, such as FER-2013 dataset. The pre-trained CNN would serve as the feature extractor for the input image, and the extracted features would be passed through a fully connected layer to predict the most appropriate emoji. The training data for the model would consist of a large dataset of images and their corresponding emojis. The model would be trained using unsupervised learning techniques. The performance of the model would be evaluated using metrics such as accuracy.

## **III. METHODOLOGY**

The study for this project includes investigation of the use of machine learning processing techniques to develop more accurate and effective emojiify algorithms, which could improve the accuracy of sentiment analysis from facial structure and enhance the ability of generating more accurate emojis/avatars correspondingly. The methodology for achieving the aim includes following steps:

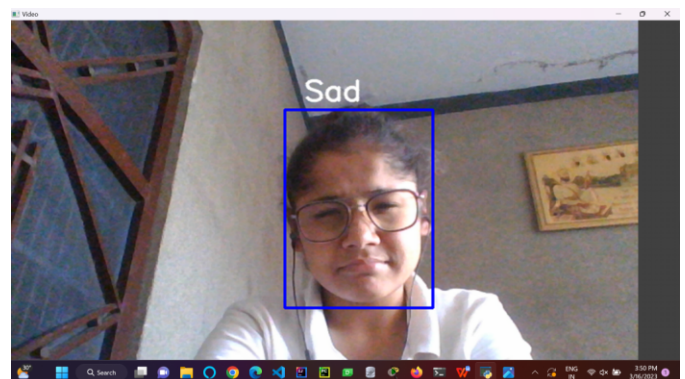
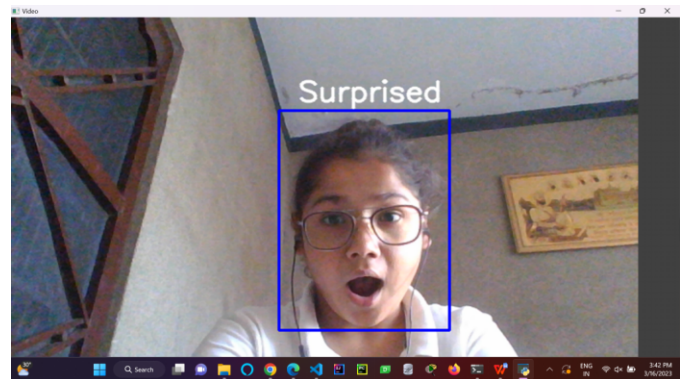
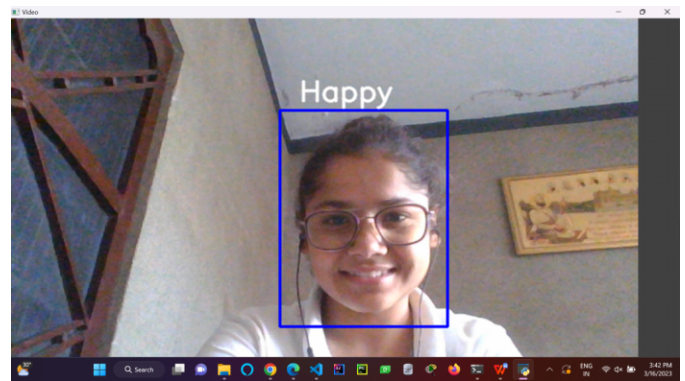
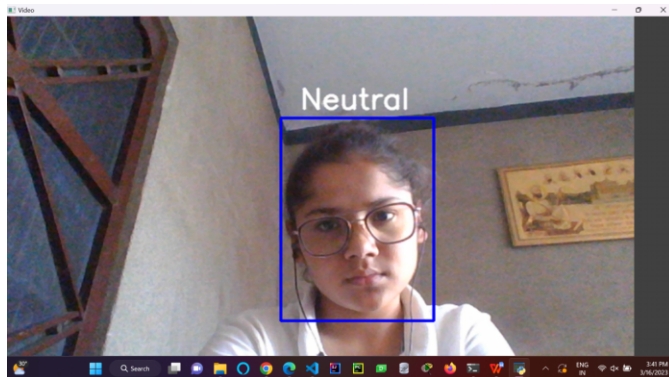
1. **Data Collection:** Collect a large dataset of images that contain human faces displaying different emotions, such as happiness, sadness, anger, surprise, fear and disgust.
2. **Pre-processing:** Pre-process the input images to ensure that they are in a suitable format for analysis. This may include re-sizing, cropping and converting images to grayscale.
3. **Emotion Detection:** Develop an algorithm or use existing models to detect the primary emotion displayed in the input image. This may involve using computer vision techniques, such as feature extraction and machine learning, to analyze the facial expressions, body language and other visual cues.
4. **Emoji Generation:** Develop a system that can generate an appropriate emoji that reflects the detected emotion. This may involve using pre-trained models or training new models to match the detected emotion with corresponding emoji.



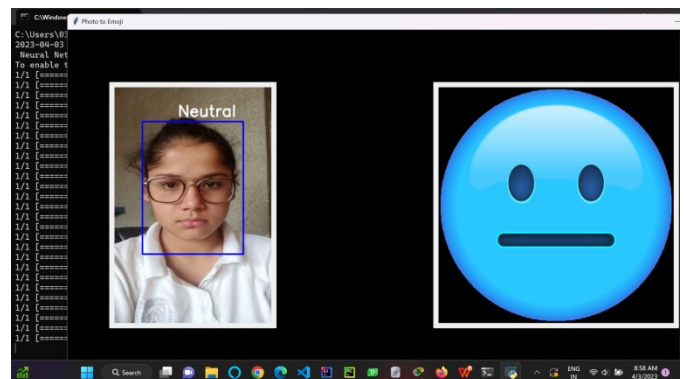
#### IV. RESULTS/OUTPUTS

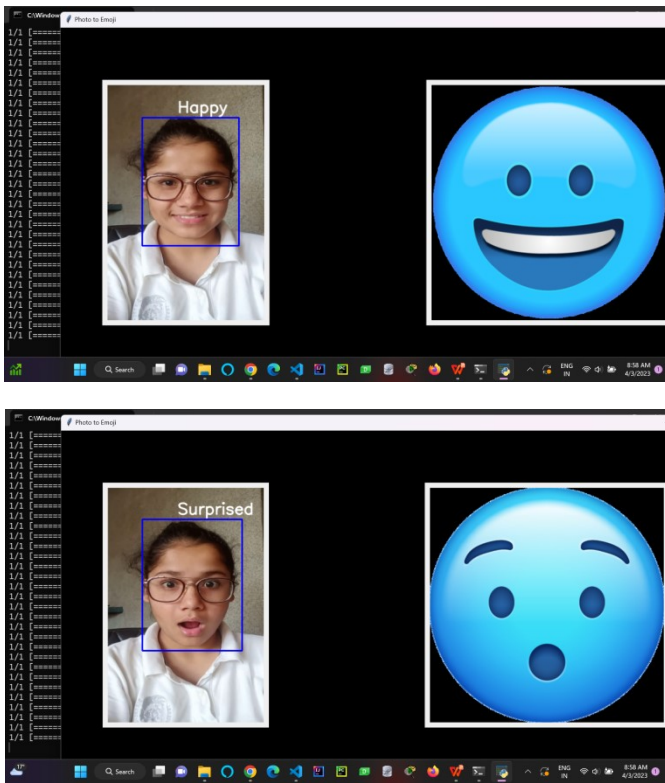
Here are some of the outputs that came after successfully implementing the methodology.

After training:



After implementing:





## V.CONCLUSION

The emoji Project using image is an interesting and innovative project that leverages computer vision and machine learning techniques to detect and classify facial expressions in images, and then generate an appropriate emoji that represents the corresponding emotions. Emoji Project using images has the potential to revolutionize digital communication by allowing users to express their emotions more accurately and effectively. The project requires the integration of computer vision and natural language processing techniques to analyze an image, extract relevant features, and map them to the appropriate emoji. While there have been several studies and research on the use of emojis in natural language processing and computer vision tasks, there is still much to be explored in the field of emoji Project.

The literature survey has provided an overview of the current state of the art in emoji Projects using images. The survey revealed that existing research has focused on developing methods for learning vector representations of emojis using textual descriptions and for predicting emojis in social media posts.

However, there are still several challenges that need to be addressed in emoji Projects, including improving the accuracy and robustness of image analysis algorithms, developing better methods for mapping image features to emojis, and expanding the set of available emojis. Future research can also explore use of multi modal techniques, such as combining facial expressions and body language, to improve the accuracy of emotion recognition in emoji Projects.

## VI.FUTURE SCOPE

The Emoji Project has significant potential for future development and expansion. Some potential future scope for the Emoji Project include:

**Improved Accuracy:** As technology continues to advance, there is the potential to improve the accuracy of Emoji Project system. This could involve using more advanced machine learning algorithms, incorporating additional data sources, or refining the current algorithms to improve their performance.

**Customized emojis:** The Emoji Project could be expanded to allow users to create their own customized emojis that reflect their personal style and preferences. This could involve developing a user interface that allows users to select from a range of options, such as facial features, colors and expressions, to create their own personalized emojis.

**Integration with social media:** The Emoji Project could be integrated with social media platforms, allowing users to quickly and easily add emojis to their posts and messages. This would enhance digital communication by providing users with a fun and intuitive way to convey their emotions and reactions.

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