

Dynamic Emotion Recognition and Emoji Generation

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Abstract - Nowadays the environment around us has digitalized and needs revolution in perspective of social interaction. Today each and every category of person is willing to express emotions graphically. Such an environment makes the social interactive session more interactive and effective. This approach helps to improvise people bonding skills in terms of innovativeness, transformation and refactoring. The recent advancements in facial tracking system provides accurate facial movements tracking. These tools and others which are present in current environment provide only a way of facial expression tracking. But the existing systems are lacking in context of converting or expressing the data acquired from face tracking to other sources. In this paper we are streamlining an approach of development in an immensely innovative way to turn facial data into graphical representation. This results in development of a system which will lead to development of tools to express emotions digitally.

Key Words: sticker, emoji, likes, expressions, face, emotions, face capture, face feature extraction.

1. INTRODUCTION

Communication is an important part of everyday life. Verbal or non-verbal communication allows one to engage in conversations. Today is the era of communication technologies. The internet and other communication devices have made it possible to engage in the fast, dynamic, and affective communication. The emojis are being used for the visual depictions of human emotions.

In this research, emotions are detected and generated real time-based emoji using facial expressions. The identification of facial expressions plays a key role in identifying patterns and image processing, and identifying facial expressions and generates the emoji.

This proposed system is used to express the expressions of humans using real time emojis. The role of emoji, pictographic forms of facial expressions, objects, and symbols. Emoji can potentially serve as a basis to portray personality traits of its users namely "emotional stability, extraversion, and agreeableness". In the area of implication, the older version of emoji, emoticon's use aims at enriching the feature of polarity classification. In fact, emoticons demonstrate interpersonal functions such as personal expressions and mood boosters in distinct virtual platforms.[5]

2. LITERATURE REVIEW

2.1 Emoji and Emoji's Styles:

Human beings are using various kinds of emotions to show the compassion and establish relationships with others. These emotions are used to express or represent the emotional conditions in our daily lives. The comprehensive list of the emotions ranges from anger, happiness, wondering, skepticism, sorrow and sadness. However, they are rarely witnessed in our daily lives. So, it is quite easy to understand the feelings of a person with the use of the facial expressions that are quite visible. Thus, the facial expressions and emotional recognitions are related with each other. The Japanese word, "emoji" consist of two parts: e means "picture" and moji means "letter" [1]. Emoticons were used before emoji as "symbolic representations for facial expressions based on punctuation marks that could be covered using a standard keyboard". Both emojis and emoticons are frequently used in the text messaging, emails, and other electronic forms of communication [3].

Emoji is now available in colorful forms and styles. It has progressed and now multiple forms and styles are available through the internet and other communication devices. In the beginning, the emoji was only available in the form of black and white shapes and it was also in a basic format. However, at the current time, they have been developed effectively and they are available in variety of shapes. Use of emojis has increased the effectiveness of the communication. [1]

2.2 Emoji application and Growth of Emojis:

Emojis were first introduced by Japanese mobile phone companies, such as Vodafone and NTT Docomo. An early ninety was the period when Japanese companies enabled the use of the emoji in their communication via electronic devices. They were the pioneers in the use of emojis. Through these companies, emojis came in trend which provoked other companies to come forward, and use the emojis to make the effective communication. Emojis became popular worldwide and are widely being used in the world at an international level [2].

The concept of application of emojis in regular conversation through digital platform was adopted by Apple Inc. the organization recognized the use of the smileys and other electronic pictorial symbols to show what the sender is

feeling. Besides the text meaning, the pictorial smileys and other expressional symbols were important because they provide the opportunity to show the feelings of the sender. After the adaptation of iPhones, the other phones such as Samsung also used these methods. Now, it is used worldwide [1].

The use of symbols is also seen in other communication formats. The symbols are widely used on the internet. Today is an era of internet as well as communication and information technologies. Thus, the use of this communication innovation is evident [1].

2.3 Work and Effectiveness of Emoji:

The importance of the emojis has two aspects, Emoji are used to express the feeling of a sender and also helps the receiver to understand the same thus the use of emojis becomes significant. The use of the emoji and other symbols are also important in our everyday lives to demonstrate effective conversation. Besides this, the emoji are considered as non-verbal tools of communication [1]. The symbols and the pictures that are used in the emoji have different colors, and these colors provide the best support for expressing the emotions and the facial expressions. The usage of the appropriate colors and the style is an important indication of the effectiveness of the emoji[1].

So, the use of the emoji in non-verbal communication is rapidly increasing the popularity. An increase in the use of emoji and emoticons has led researchers to investigate user's characteristics and behaviors in different mobile messaging applications (MMAs)[4].

Employing uses and gratification theory, MMA functions more on social connectedness to its users who are younger, multitasking, and graphic communication reliant. Therefore, the use of emojis is playing an important role in the conveying of the messages with feelings and expressions.

2.4 RELATED WORK

2.4.1 Emoji Maker- Free Personal Animated Phone Emojis:

It supports Animated Emoji. Phone enables us to use a new kind of emojis called Animated Emojis. It supports characters like fox, pig, dog, cat, chicken, monkey, and panda. This app allows you to send and receive animated emojis. You can express yourself with 3D animated stickers and emojis featuring you as a cartoon avatar maker.

2.4.2 Bitmoji – Your Personal Emoji:

We can create an expressive cartoon avatar. We can choose from a huge library of stickers all featuring you. We can use this app in wherever we want like third party apps.

2.4.3 Facemoji Keyboard-Emoji Keyboard, GIF, Theme, and Sticker:

This is the First Emoji-Centric Android keyboard. It is having 3600+ Emoji, emoticons, GIFs, stickers on this Emoji keyboard, this app helps us to spice up chat in Facebook, Twitter, Instagram, Messenger, WhatsApp.

2.4.4 Elite Emoji:

This app is sensational emojis and stickers to express emotions and ideas beautifully in your chat conversations. It contains 2000 exclusive high definition emojis and stickers of all kinds to choose from. It also supports emojis with a single touch in Social networking sites. By using this we get access to a huge selection of gifs and even create your own animated images.

3. EXISTING SYSTEM

Existing system provides us only static way of emoji generations. By using this system, we can only create emojis statically. No dynamic emoji creation is there. And created emojis are segregated themselves that means all generated emojis are collective outcomes. This limitation is covered by our proposed system.

Taxonomy chart is the representation of feature vs application to support the proposed system. It also gives the exposor of the features proposed system.

Parameters	Emoji	Face Detection	Facial Expression	GIF Generator	Dynamic Real emoji	Sticker Generator	3D View Analysis	Emoji Styles	Own Emoji	Predefined Emoji	Share	HD Emoji	Own Wallpaper	Save to Gallery	Any Device Support	Cartoon Avtaar
Sources / Apps																
Emoji Maker	√	√	X	X	X	X	X	√	√	X	√	√	√	√	√	X
BitEmoji	√	√	X	X	X	√	X	√	√	√	√	X	X	√	√	√
Facemoji	√	X	X	√	X	√	X	√	√	√	√	X	X	√	√	X
Elite Emoji	√	X	X	√	X	√	X	√	√	√	√	√	X	X	√	X
Animated Smileys Emoji	√	X	X	√	X	√	X	√	√	√	√	X	X	√	√	X
Emoji Quiz	√	X	X	√	X	√	X	√	√	√	√	X	X	√	√	X
StickEmoji	√	X	X	X	X	√	X	√	√	X	√	√	X	X	√	√
Emotify Me	√	X	X	X	X	√	X	√	√	X	√	X	X	X	√	√
W2 Emoji	√	√	X	X	X	√	X	√	√	√	√	√	X	X	√	X
Proposed System- Dynamic emotions emoji recognition (DEmoji)	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	X

Chart -1: Taxonomy chart

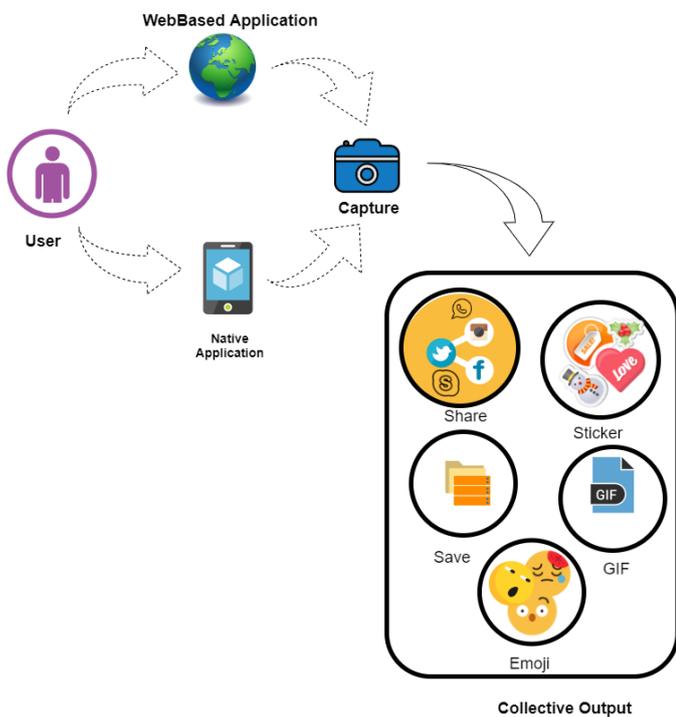


Fig -1: Existing System Architecture

4. PROPOSED SYSTEM

Our proposed system dynamically generates emojis; by using Machine Learning it process the input taken by camera and alternative emoji is generated dynamically. These generated emojis again can be shared to social networking sites or other third-party applications. We can save them to any type of storing methods such as Drive, Local Storage etc.

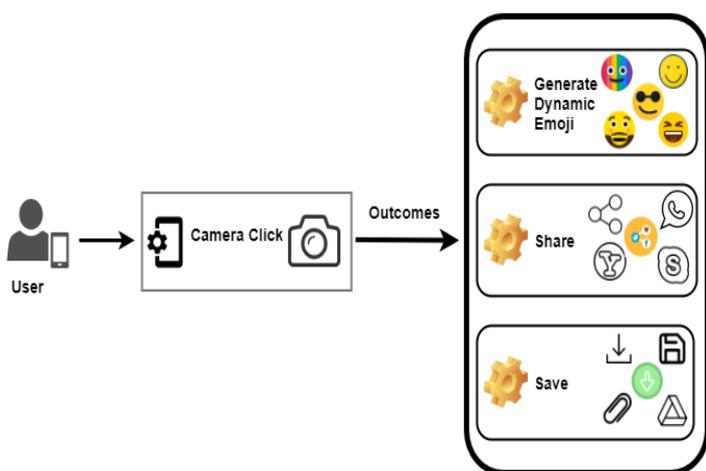


Fig -2: Proposed System Architecture

4.1 Generate Dynamic Emoji Module:

This module has dynamic generation of emoji. The input is taken from camera and processed by machine learning techniques to generate emojis dynamically.

4.2 Share Emoji Module:

This module consists sharing of emojis. We can share emojis across the third-party application including social networking sites such as Whatsapp, Facebook, Twitter, Instagram etc.

4.3 Save Emoji Module:

This module consists storing of emojis. We can store emojis multiple platforms such as local storage, online storage like Drive. We can also share it as attachment to recipient.

5. CONCLUSION

In this paper, we analyzed that there is no such system present which generates dynamic emojis. There are lots of systems available which has only collective outcomes. By this we can only create static emojis and can be saved locally. But to overcome this, our proposed system will help to generate the emoji dynamically.

6. REFERENCES

- [1] Emotional Recognition Using Facial Expression by Emoji in Real Time Mohammed Rajhi* 3820 Nicholasville Rd, APT#1206, Lexington, Kentucky, USA.
- [2] "Emotion Recognition Using Facial Expression Analysis" ALI GHALI 2. Dr. MHD BASSAM KURDY,JATIT , 30 September 2018.
- [3] Smileys & People 2017 emojiopedia.
- [4] Emoji: Representations of Nonverbal Symbols in Communication Technology D Tandyonomanu* and Tsuruyya
- [5] Using Emojis: Self-Presentation and Different Meaning Creation Approaches, Dr. Sibel Onursoy

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