IJARCCE ISSN (O) 2278-1021, ISSN (P) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 7.39 ⁜ Vol. 11, Issue 5, May 2022

DOI: 10.17148/IJARCCE.2022.11533

Emotional Intelligence by Face Recognition Using Machine Learning

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Abstract: In our daily life, we go through different stages and develop a different sense of emotions . These feelings and emotions are expressed as facial expressions. Business communities today prefer to use emotional marketing. In emotional marketing, they try to stimulate the emotions of the customers to buy products or services. This work will focus on analyzing the gender, age and feelings of the iuninitiated to help organizations develop strategies that help people feel depressed, expand efficiency and improving their emotional state. In this regard we will be developing a mini-Xception based Xception and Convolution Neural Network (CNN), which is easy to focus on as good parts as face and carry significant improvements in previous activities. A large number of research work does best in controlled databases (i.e., small data sets with small features), while failing to function properly and the challenge to data sets varies the rotation of images even in imperfect faces. In recent years, many activities have introduced a final word recognition system, using in-depth reading models. Although emotions recognition is a huge undertaking, it seems there is still a lot of room to be developed.

1. INTRODUCTION

Facial expressions are important identifiers of human emotions, because they are associated with emotions. In many cases, facial expressions are a vague expression of emotion, and it can be taken as physical evidence to reveal whether a person is telling the truth or not. The current methods are very focused on facial investigations to keep the background as it is and that is why they have created so many unnecessary and misleading features that confuse the CNN training process. The current manuscript focuses on five reported facial features, discomfort / anger, sadness / unhappiness, smile / joy, fear, and surprise . The discovery of human emotions is used in many areas that require additional protection either personal information. It can be seen as a second step toward dealing with adoption where we may be needed to set the second layer of security, where the face, emotions as well found. This can be helpful in ensuring that the person standing in front of the camera is not just a Bilingual representation. Another important area where we see the importance of business sensitivity acquisition promotion. Most businesses thrive on customer feedback on all of their products and offerings. If a smart system can capture and capture real-time emotions based on a user image or video, they can decide if the customer liked or disliked the product or contribution.

2. LITERATURE SURVEY

[1] Facial Emotion Recognition by Jyostna Devi Bodapati, N. Veeranjaneyulu :
Proposed a Facial Emotion Recognition Using Deep CNN Based Features. For feature extraction pre-trained convolution neural network model (VGG16) is used.CK+ dataset is used for training model and 86.04% accuracy is achieved.

[2] Emotion Recognition from Facial Expression using deep learning by Nithya Roopa .s :
In this paper they proposed an Emotion Recognition from Facial Expression using deep learning. The proposed model is Inception Net v3 is applied and Kaggle's Facial Expression Recognition Challenge and Karolinska Directed Emotional Faces (KDEF) datasets are used for training model and 39% accuracy is achieved.

[3] Facial Expression Recognition using Deep Neural Networks by Junnan Li and Edmund Y. Lam :
Proposed a "Facial Expression Recognition using Deep Neural Networks". CK+ dataset is used for training and testing model and 91.9% accuracy is achieved.

[4] Arushi Raghuvanshi "Facial Expression Recognition with Convolutional Neural Networks" VGG16:
The model from Caffe's Model Zoo which was trained on Image Net, and VGG Face, a network trained

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on a facial recognition data set. There trained and tested their models on the data set from the Kaggle Facial Expression Recognition Challenge, and FER dataset are used for training and testing model and 0.60% accuracy is achieved .

[5] Emotion Recognition from Facial Expressions by Victor-Emil Neagoe :

Developed "A Deep Learning Approach for Subject Independent Emotion Recognition from Facial Expressions". There have focused on two "deep neural" models: Convolutional Neural Networks (CNN) and Deep Belief Networks (DBN). One has selected the Support Vector Machine (SVM) as a benchmark algorithm. JAFE dataset are used for training and testing model and 95.71% accuracy is achieved.

[6] Emotion Recognition from Facial Expression Based on Fiducial Points by Fatima Zahra Salman :

Proposed an "Emotion Recognition from Facial Expression Based on Fiducial Points Detection and using Neural Network". There detect and track 49 Fiducial points using a powerful and recent Supervised Decent Method (SDM).

[7] Emotion recognition using brain activity by Dilbag Singh :

EEG signals are used which is a very difficult task to perform as they are expensive, complex and time consuming when we try to measure the human brain with Electroencephalography (e.g.). Even when they used existing data their analytical results were 31 percent to 81 percent and where even Fuzzy 72 to 81 percent of brain intelligence was found in only two sensory categories. This paper also gives us an idea of how we can feel a person's emotions again by reading and comparing faces with pictures or data stored in a database. In this paper through a program trained in emotional networks we obtained accurate results of up to 97 percent.

3. PROPOSED METHODOLOGY

The proposed plan is based on the vision of achieving efficiency in identifying human emotions that can help in many aspects such as:

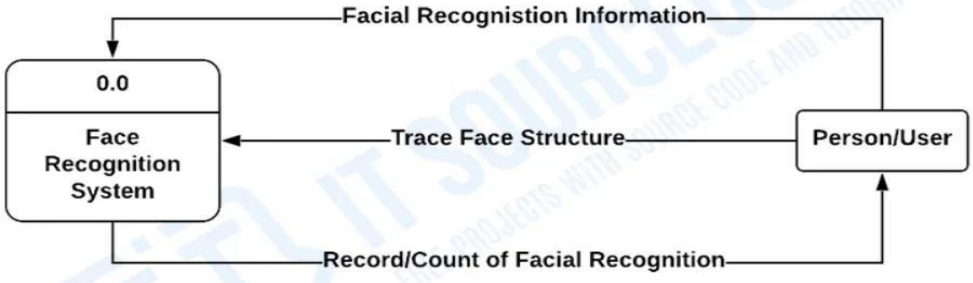
1.Make cars safe and customizable-: Car manufacturers around the world are increasingly focusing on making cars more personal and safe to drive. In their quest to build the features of a smart car, it makes sense for developers to use AI to help them understand human emotions. Using facial expressions can alert cars alert the driver when he hears them drowsiness.

2.Finding of Face Feelings in Conversations-: Candidate interaction with the interviewee may be easier in many judicial stages and humility. Such subjection makes it difficult to judge whether a person really is human

personality is well suited to work. Identifying what the person is trying to say is out of our hands because of the many layers of translating the language, the mind bias, and the context. That's where AI comes in, so to speak

the face of the candidate to capture their emotions and assess their status personality traits.

A. Data Flow Diagram -:



Data Flow Diadram Level 0

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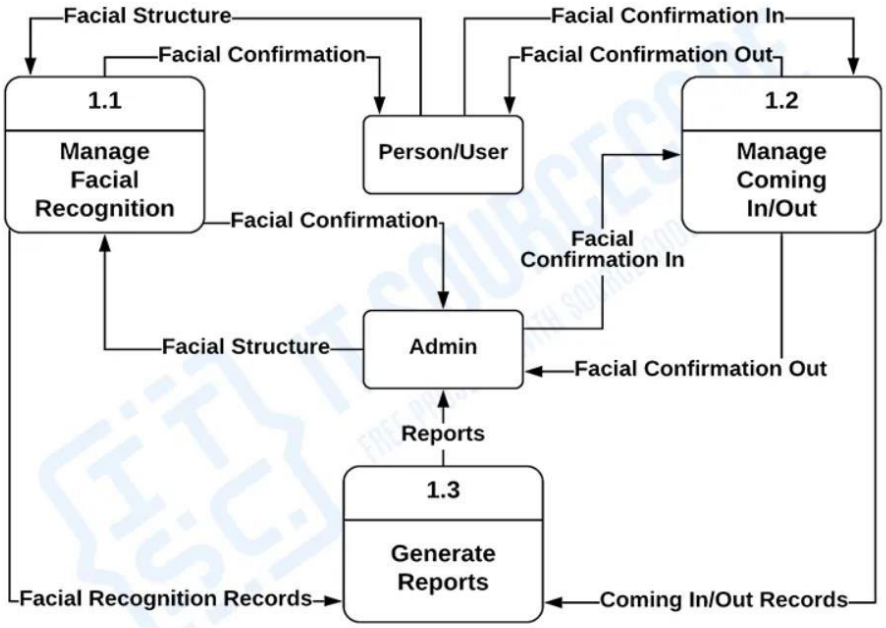
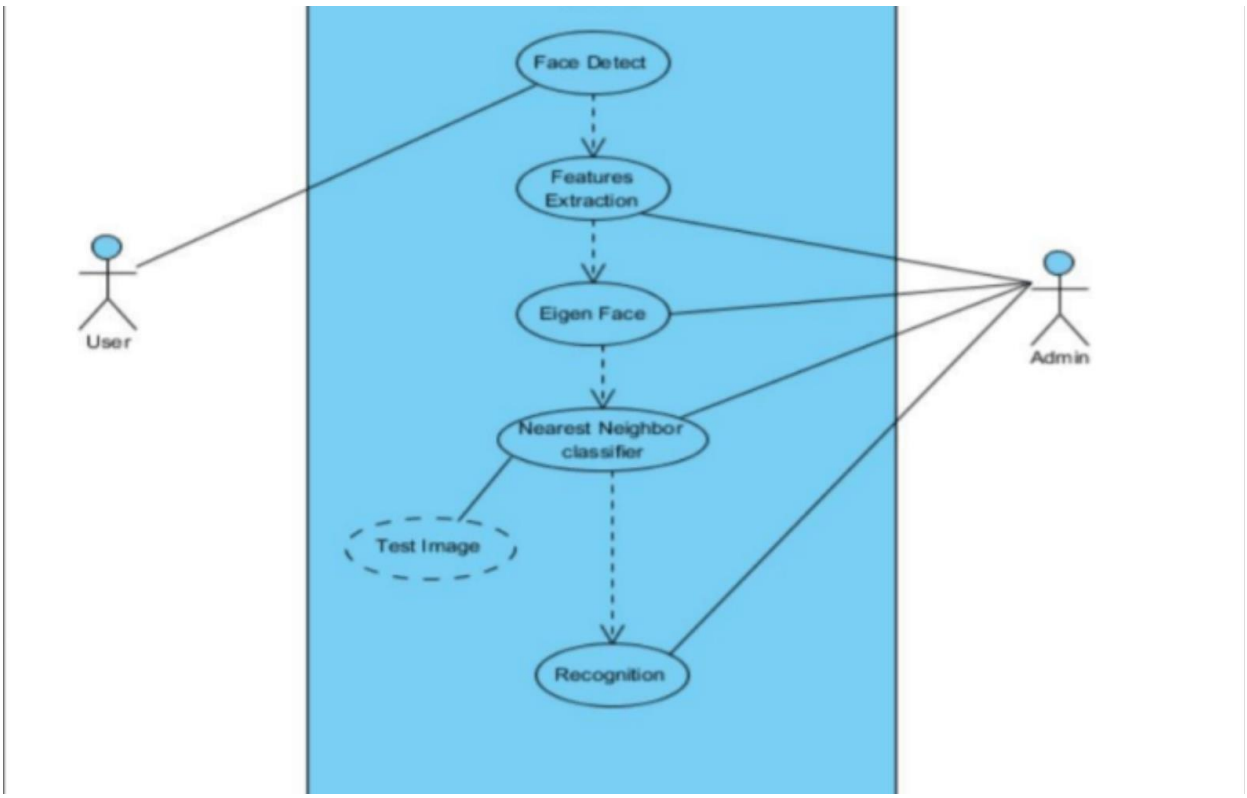


Data Flow Diagram Level 1

B. UML Diagram -:



UML Diagram For Emotional Intelligence by Face Recognition

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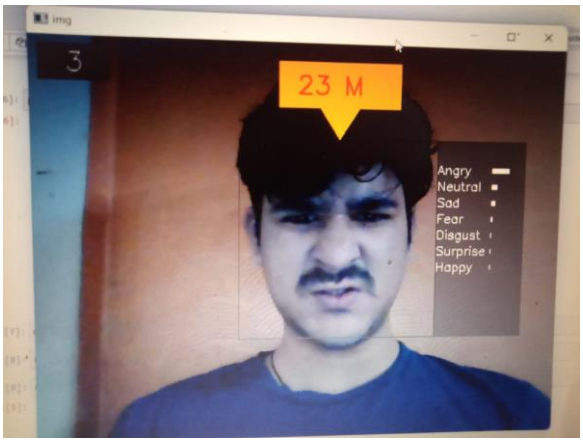
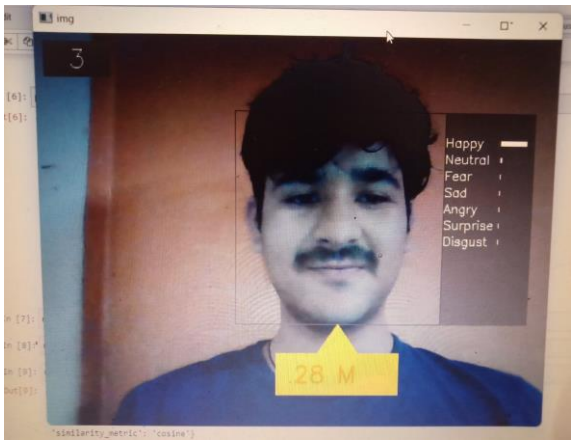
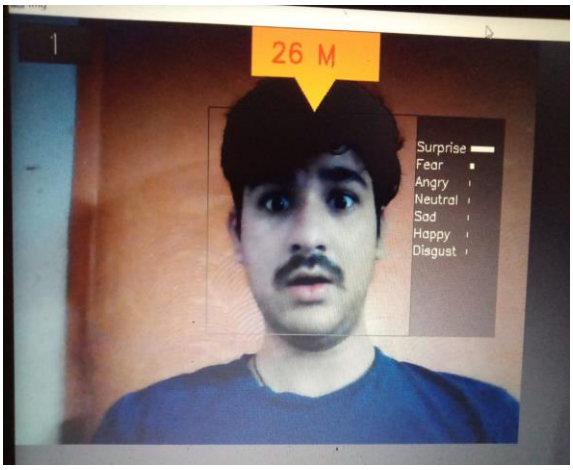
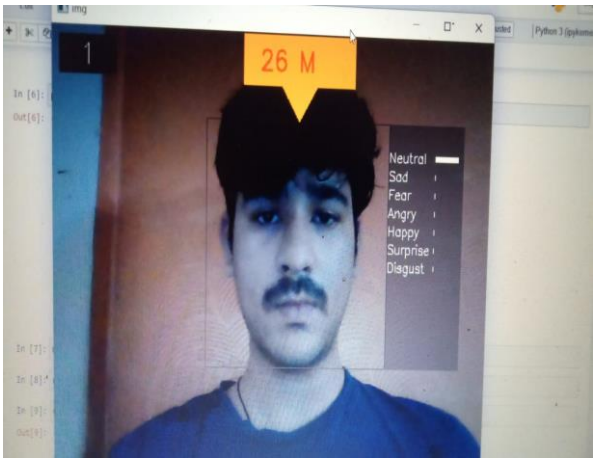
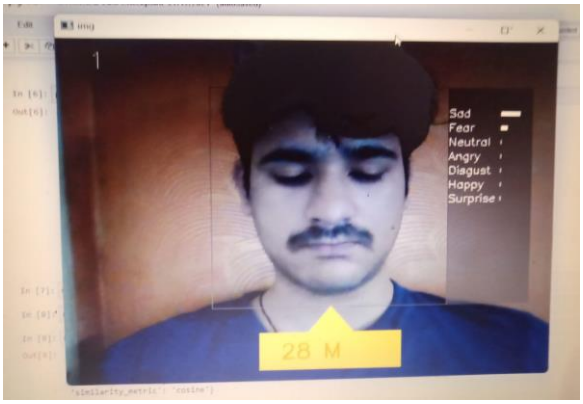
RESULTS AND DISCUSSIONS

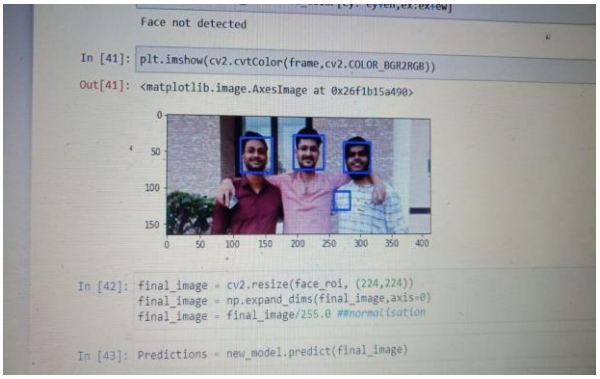












CONCLUSION

In this paper, we propose a novel feature that incorporates a dual channel expression recognition algorithm based on machine learning theory and emotional philosophy. Because features released using CNN ignore subtle changes in active facial regions, the first method of the proposed algorithm considers the Gabor region ROI feature as input. The active surface region is first separated from the real face image, and the features of this region are extracted using the Gabor transform, with a strong focus on the local area details, in order to make full use of the functional feature data. facial region. To improve bottleneck bottle design, reduce network complexity, and avoid rust, a channel-based network network based on deep separation is proposed in the second method. The depth of the feature map is integrated with the knowledge of the area by designing an efficient focus module, focusing more on the removal of key features and

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improving the accuracy of emotional recognition. Overall, the revised research in this chapter suggests that emotional intelligence, as reflected in the process of judging facial information, is not universal. It is a multifaceted skill — not a unique or simple skill — that encompasses a range of structures with intricate interactions with each other.

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