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Gender Prediction Model Using CNN Algorithm

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Abstract – *In Gender Prediction model using the Convolutional Neural Network(CNN) Algorithm to the establishment of an Automatic gender prediction has now relevant to a companion of its using hardware and software, Unconsciously we using gender prediction model or predicting gender from facial images unrestrained conditions it's a very important and challenging mission for working in real world applications . The Convolutional Neural Network (CNN) is designed by humans because of lacking to handle a huge amount of variations in images . This difficulty handle by Convolutional Neural Network for representing a powerful feature . In this paper we predicting a gender for using a facial images because increasing the growth of social path or social network. Gender prediction is very demanding task for detecting a gender (Male/Female) then we using a Convolutional Neural Network (CNN) for pre-processor the facial images and checking the accuracy level of a model. Convolutional Neural Network(CNN) is a supervised Learning Algorithm that work on Classsification and Regression but mainly work on classification Learning for Classify the images and pre-processor the images and classify it . The Convolutional Neural Network(CNN) algorithm main purpose how to pre-processing the input image and converting into a float-point tensor transformed into Convolutional Neural Network. For knowledge, purposes tensors are used to stored data they can define a multidimensional array. The analysis result, checking the level of accuracy on the based of classification or testing the level of accuracy result for detecting his/her image or data set for learned the functionality of facial images for predicting a gender (male/female) . Convolutional Neural Network(CNN) based method estimating his or her gender by using multiple Networks .*

The tested result show accuracy which is 99.3% using the open-cv dataset and 95% accuracy using CNN dataset.

Key Words: *Convolutional Neural Network(CNN)* - algorithm , machine learning, Open-CV, grayscale detection.

1. INTRODUCTION

Gender is the key facial property .Gender detection plays a substantial role in modern technology. Gender prediction has enourmous dynamic applications like social interaction, security maintenance, and surveillance, video games, human-computer interaction, criminal identification, mobile application, commercial development, monitoring application, etc. It has utilized a elevated space in the field of facial detection. The main purpose of gender prediction is to discriminate males and females based on the different facial characterstics of humans. In machine learning is to instinctive learn to identify complicated pattern and make a intellectual decision based on different data set. Supervised learning classified the data set or classification of different data set and trained the data set according to our model requirments . The major goal to predict a class of data set in accurate and efficient manner using a classification learning classify a different class of data set and take a prediction accurately and give output in efficient or effective manner .

In this paper , we have used Convolutional Neural Network(CNN) algorithm for recognition of gender to extemporize the previously used method and to obtain an accurate result and Open CV also . Convolutional Neural Network(CNN) is a types of supervised learning classify the data , trained the data according to our model requirement and give a output accurately and take a prediction in efficient and effective manner . Convolutional Neural Network(CNN) is a Deep Learning algorithm which can take an input image , assign important learnable value or weights to various aspects and objects in the

facial image and distinguish one from another and pre-processed an facial image take a prediction and detecting an facial image in accurate manner or predicting a gender (male / female) in effective manner .

It is a big task compose to the real-time of prediction a gender , it is imperative to improve the algorithms from ever so often to accomplish a high accuracy levels and

Develop more efficient and accurate systems in effective way . Based on the features used evocation the facial images approaches can be divided into 2 distinguish categories: geometric feature-based methods and appearance-based methods. Configuration assign to the distinguish between various facial image attributes such as eyes, nose, chin, and lips. Facial features can be extracted from the facial image using a convolutional neural network algorithm that returns the coordinates of various features. In current works for classification gender a group an inspiring sign of performance in machine learning and Convolutional Neural Network. The aim of this paper is head -to-foot learning classification of a model and predict his/her image and check the accuracy level of the model.

In Convolutional Neural Network(CNN) algorithm :

1 Using Convolutional Neural Network(CNN)

2. Start reading an image or reading an input
3. Camera capture an image for take a prediction or analysis the image
4. Process a video frame
5. Convert capture facial image into grayscale
6. Now detecting an facial image
7. Pre-processing an image
8. Predict his/her
9. Check the gender is it male or female
10. If is it male then display for male alert generated
11. If is it female then display for female alert generated

The deep Convolutional Neural Network technique detecting a gender involved face dependent gender recognition accepting the image as input and then transforming input images for further processing, dimension reduction, feature extraction, feature procurement, and classification, in this sequence. Initial knowledge of these technique realms is needed to find out the finest extractor of feature for design. In expansion to which, recognition method performance is highly valuable to the specified classify used, which completely relies on the pattern retrieval technique applied to the method which we have used in the research work related to this paper. Convolution Neural Network (CNN) model can have probable to show excellent result than the train of a new problem-related D-CNN model from the beginning. With this method, we have obtained up to 9% and 7.6% excellent improvement in performance in comparison to a problem-related method for gender recognition process or prediction process .

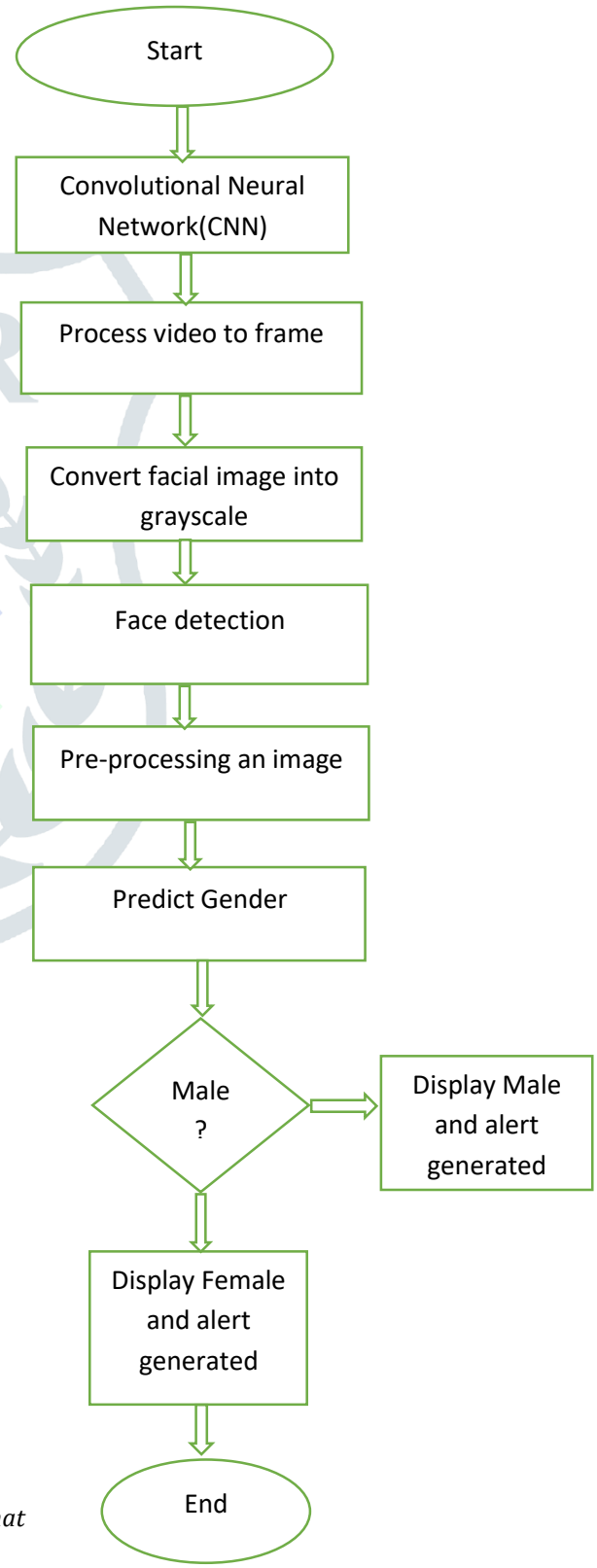


Fig:- Flow Chat

2 . RELATED WORK

To determine a human face, the system needs to capture an image of face using a camera and a frame-grabber to process the facial image, searching the facial image for extensive features and then use these features to decesive the location of the facial . Impulsive predicting his/her image and pre-processed the facial image, check the accuracy level of the model.

Convolutional Neural Network(CNN)that uses a high recalled fast face image detector for generating region proposals to improve the accuracy level of the algorithm. Astronomical experiments shows the model are abled to collected local and global data set related to facial images and perform compelling better than a competitive algorithm or function four tasks. gender, important facial attributes, play a very infrastructure role in social interactions, making gender approximation from a face image is an important task in applications, such as access controlled , human - interaction, malls, marketing , and security purpose etc. we will be doing face detection , face prediction and, we will be using CNN (Convolutional Neural Networks) for gender predictions .

In this section, we briefly review the gender classification composition and describe both the immediate methods The fundamental aim of this method fixing gender classification and check the accuracy levels of the model for his or her images or predicting his/her image .

The paper gives you knowledge about the technology used in the gender detection model.

The models using an algorithm for predicting an image face detection and recognition of his or her images using convolutional neural network(CNN) algorithm it enhances completion and high face detector for improving the accuracy level of the model significantly better in performance in efficient and effective way and performing many more tasks[1].

We have the apprehension to learn and classification method and using a convolutional neural network technique to enhance the performance can be attained gender classification task that we decide for working on the convolutional Neural Network[2]. using Visual Geometry Group(VGG) net architecture which can be used in an higher level of train data for CNN-based algorithms we suppose our working on current unfiltered images for his or her gender prediction.

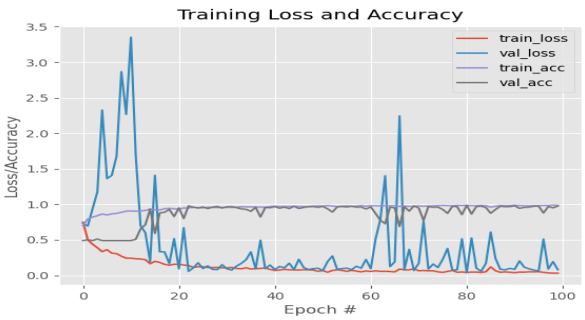


Fig:- Accuracy Level

This paper introductory an convergent of gender detection of a person using facial images using a technique for data mining. prediction of gender is a very useful technique in computer-human Interaction and classify of the model or a system, classification is a powerful technique used in categorical data, classify males and females also using a tree to take decision for taking prediction , and other is used for checking a maximum accuracy level of a model[3]. The model used in this paper for attaining an accuracy level of 98.66%

This research give a suggestion that the new algorithm for automatic live gender detector using a support vector machine is used for the classify of the system . The implementation of work results live images, and detection accuracy level is 95% in the dataset, 91% in own dataset this proposed methodology is compared to the previous method for better prediction and which will be helpful in the real-time application [4].

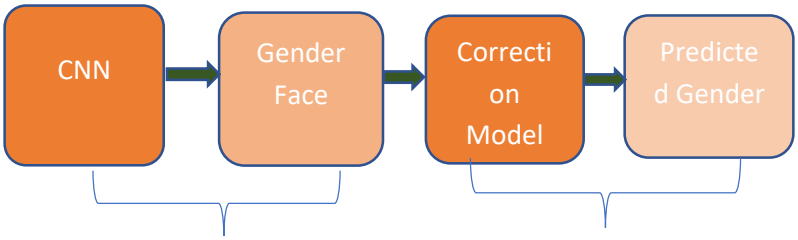


fig:- Working Model

Finally, We look over the accuracy of the classification dataset for age and gender our method enhances performance in both age and his or her prediction and also classification of gender, significantly exceeding performing the models. For future enhancement of work support. then we will use a Convolutional Neural Network algorithm for age estimation and prediction of gender.

Previously spreading technology regarding the security-related problem in our daily life. In this paper, we discuss biometric traits in the prediction of gender model for male or female identification and also used for reducing search space tests [5]. In this model using 20 layers they have a different window size of Convolutional Neural Network(CNN) and the layer are fully connected layers for extraction and classify purposes. Using biometric traits takes an input of facial images , fingerprint, eyes images classification of the Multimodal datasets and gives an output using multimodal biometrics data fusion skeleton to increase the accuracy level of the gender prediction model or recommendation of system .

Prediction of gender and age of classifying unconstrained facial images. This research area is useful in the real-world scenario or real-world places traditional methods not providing security in real-world scenario lots of security issues are arises and lots of bugs to be arises [6]. Now this model uses Convolutional Neural Network (CNN) it is commonly used for classification learning algorithm purposes and also performing classification tasks due to human face images or analysis of a face In This model performs an head-to-foot Convolutional Neural Network approach to achieve gender classification and robust group of his/her images .

The automatic prediction of gender extracting from human face images. The Convolutional Neural Network approach is used to completion a task for predicting gender prediction. In this model using various hardware and software are used to enhance the accuracy level of the model for predicting gender (male/female) and used in online social websites, online platform . In this, we use a classification learning method and Convolutional Neural Network technique [7].

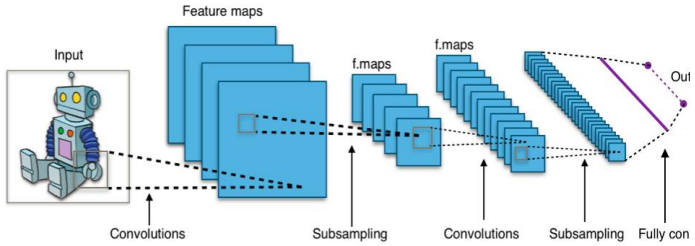
That Deep gender Distribution Learning (DGDL) in this estimating gender and generating Gaussian gender . taking multiple face images with labeled finding gender using a standard deviation. Give a mean age and standard deviation and find out a Gaussian age distributes for each face image using a target train data. first, detect the region of face and align of facial images [8]. then using a Convolutional Neural Network for training based on VGG face and detect an age distribute using a train age dataset. Finally using Ensemble method for combining multiple models and boosting the accuracy level of the model.

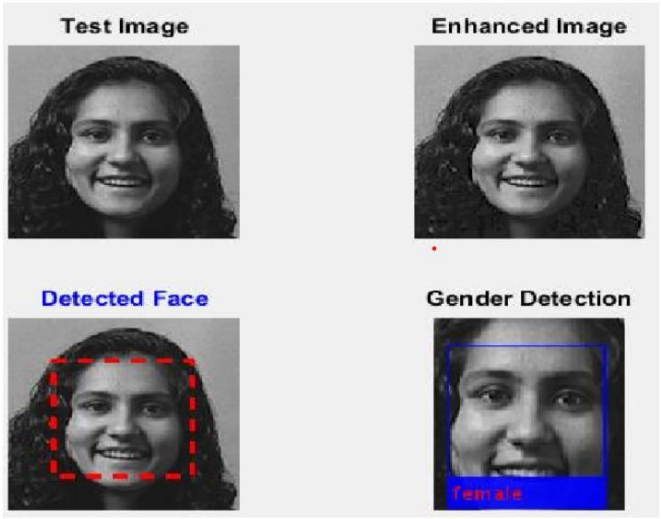
The Gender prediction from social network / media comments with Intelligence In this used artificial Intelligence for detect an age group and also used a machine learning technique[9]. Nowadays many companies and organizations delivered a cosmetic or product and provide a maintenance to their customer via an online platform but not all customers are the similar or have different interests. Gender is the main reason behind these problems. If Gender is determine corrected manner on an online platform or social network then the amount or cost of the cosmetic or product enhance using a machine learning technique for analyse the comments of companies. Detect the gender boosting the accuracy level of the system .

3. ANALYSIS AND INTERPRETATION

The ultimate goal of my project is to create a system or a model that can detect , predict and recognized males and female . While our goal is very specific , Image Classifier that can detect his or her facial image that is tangible with an adequate data set and

check the accuracy level of males and females or his/her facial images and take a prediction in efficient or effective way .





Female

Step 1 : Create a new file

Step 2 : The second step is to import a libraries files we are going to use in this model :

- Import numpy
- Import matplotlib

Step 3 : Preparing Data

- Preparing label Data using result .csv file
- Loading labels for each image
- Seprataing male and female data set
- Splitting male data set into test and train
- Splitting female data set into test and train
- Combining male data and female data and creating a final test data frame
- Count the number of female and male facial images .

Step 4 : Preparing facial images file

- In this step we resizing the images to 64 * 64 to run efficiently or effective . Also we are splitting male and female facial images and analysis them .
- Storing a path of each image files in a list .
- Processing facial images into numpy array forms
- Display samplying facial images .
- Splitting path of male and female image file

Step 5 : Creating Convolutional Neural Network (CNN) for training it on male and female data .

Step 6 : Trained the model .

Step 7 : Take a prediction .

Step 8 : Let's see how model performed

4. CONCLUSION

We originated the classification of gender(his or her image) unfiltered real-world facial images. We passes a task as a multiclass classification learning of the problem, trained the a system coinciding to prediction, and train the model for the achieving of our result. our convergent achieves the best result for gender prediction detect his or her image . We train our neural network model to classification of facial images into and boosting the performance or enhance the accuracy level of the model. Our goal for proposed a model that is originally train on gender prediction on a huge amount of data scale. The facial image pre-processed algorithm handles some of the variability observed in the real world faces . and this confirms the model relevancy for gender classification in efficient and effective manner . For future works, we will consider a Convolutional Neural Network(CNN) architecture for pre-processed an facial image prediction and recommendation a system . a human's face will be interesting to explore in the future.

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