

Literature Review on Gender Prediction Model using CNN Algorithm

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Abstract – In Gender Prediction model using the CNN Algorithm to the establishment of an Automatic gender detection has now pertinent to a supplement of its using hardware and software, because of the growth of the online social networks, malls. Nowadays prediction of gender is a very challenging task in real-time application. Prediction of a gender enhancement in future growth using a CNN(Convolutional Neural Network) for preprocessing the images and checking the accuracy of a model. CNN(Convolutional Neural Network) architecture includes the derivation of facial and classification of the model. The CNN algorithm purpose how to preprocess the input image and converting into a floating-point tensor delivered into Convolutional Neural Network. For knowledge, purposes tensors are used to store data they can define a multidimensional array. The tested result, analyzing for accuracy of classification or checking the accuracy result for predicting his/her image.

The tested result show accuracy which is 98.7% using the open-cv dataset and 94% accuracy using CNN dataset.

Key Words: CNN -algorithm, K-means clustering algorithm, machine learning, Open-CV, recommendation system, grayscale detection.

1. INTRODUCTION

Gender detection plays a significant role in modern technology. detection of gender has vast 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 occupied a great space in the field of facial recognition. The main purpose of gender detection is to differentiate males and females based on the different features of humans.

In this paper, we have used Open-CV and CNN algorithm K-means clustering algorithm for gender recognition to extemporize the previously used method and to obtain an accurate result. depicts how to process face image through K-means clustering algorithm and find the pattern, extract feature to recognize gender from image accurately. The performance of the K-means clustering algorithm depends upon the highly efficient clusters that it forms. But choosing the optimal number of clusters

is a big task. accommodate to the real-time of gender prediction, it is crucial to improve the algorithms from ever so often to achieve high accuracy levels and

build more efficient and accurate systems. Based on the features used extracting the facial images approaches can be divided into 2 different categories: geometric feature-based methods and appearance-based methods. Configuration refers to the distance between various facial image features such as eyes, nose, chin, and lips. Facial features can be extracted from the facial image using a k-means algorithm that returns the coordinates of various features. In current works for classification gender and age group an inspiring sign of performance in machine learning and Convolutional Neural Network. The aim of this paper is end-to-end 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. reading the images.
2. Decode JPEG content into an RGB grid of pixels.
3. converting into Floating points tensors taking input to neural network
4. Rescale the pixels values between 0 to 255. Trained the neural network efficiently or effectively.

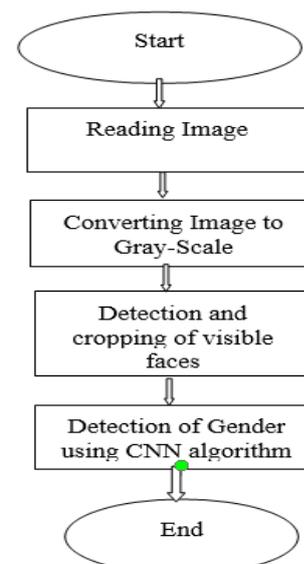


Fig:- Flow Chat

2. Clarification of Prediction Model

To locate a human face, the system needs to capture an image using a camera and a frame-grabber to process the image, search the image for important features and then use these features to determine the location of the face. Spontaneous predicting his/her image and preprocessing the image, checking the accuracy of the model.

Convolutional neural network(CNN)that uses a high recall fast face detector for generating region proposals to improve the speed of the algorithm. Considerable experiments show the model or system able to collect local and global data related to facial images and perform significantly better than a competitive algorithm or method four tasks. Age and gender, two important facial attributes, play a very infrastructure role in social interactions, making age and gender approximation from a face image is an important task in applications, such as access control, human-computer interaction, law enforcement, marketing intelligence, and visual surveillance, etc. we will be doing face recognition, face prediction and, we will be using CNN (Convolutional Neural Networks) for age and gender predictions.

3. LITERATURE REVIEW

In this section, we briefly review the age and gender classification literature and describe both the early methods The main aim of this method fixing age and gender classification and check the accuracy of the model for his or her images.

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

The models using an algorithm for detecting an image pose prediction and recognition of his or her images using convolutional neural network algorithm it enhances performance and high face detector for improving the speed of the model significantly better in performance .and performing many more tasks[1].

We have the prospect 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 VGGnet architecture which can be used in an extreme level of training data for CNN-based algorithms we supposed our work on current unfiltered pictures for his or her gender prediction.

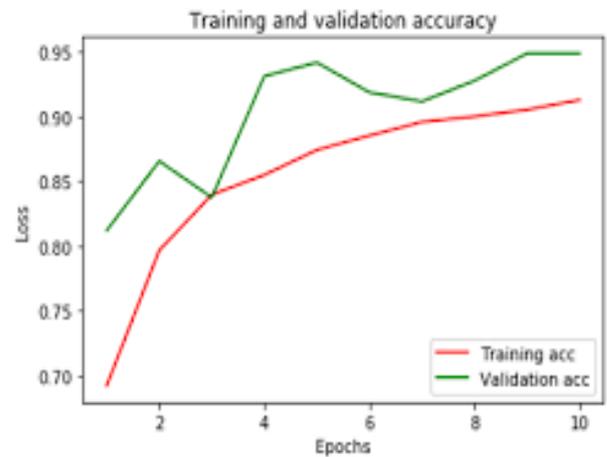


Fig:- Graph of Accuracy

This paper introduces an approach of gender detection of a person using facial images using a technique for data mining. prediction of gender is a very useful technique in human-computer Interaction and classification of the model or a system, classification is a powerful technique used in categorical data, classify males and females also using a functional tree, J48, and other is used for checking a maximum accuracy of a model[3]. The model used in this paper for attaining an accuracy level of 95.66%

This research suggests that the new algorithm for automatic live gender recognition using a support vector machine is used for the classification of the model. The implementation of work results on FEI, live images, and detection accuracy is 97% in the FEI dataset, 95% in own dataset this proposed methodology is compared to the previous method for better prediction and which will be helpful in the real-time system[4].

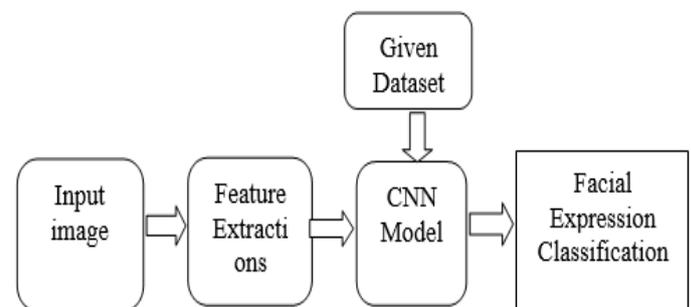


Fig:- Working Model

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

Prediction of gender and age of classifying unconstrained facial images. This research area is useful in the real-world application or real-world area traditional methods not providing security in real-world application lots of security issues are arises[6]. Now this model uses Convolutional Neural Network (CNN) it is commonly used for classification purposes and also performing classification tasks due to face images or analysis of a face In This model performs an end-to-end Convolutional Neural Network approach to accomplish gender classification and robust group of age.

The automatic age and prediction of gender extracting from human face images. The Convolutional Neural Network approach is used to accomplish a task for predicting age and gender prediction. In this model using various hardware and software are used to increase's the accuracy of the model for predicting age and gender (his/her) and used in online social networking websites, social networks. In this, we use a classification method and Convolutional Neural Network technique [7].

That Deep Age Distribution Learning (DADL) in this estimating age and generating Gaussian age. taking multiple face images with labeled finding age using a standard deviation. Give a mean age and standard deviation and find out a Gaussian age distribution for each face image using a target training dataset. First, detect the region of face and alignment of face[8]. Then using a Convolutional Neural Network for training based on VGG face and predicting an age distribution using a trained age dataset. Finally using Ensemble method for combining multiple models and enhance the accuracy of the model.

The Gender prediction from social media comments with artificial Intelligence In this used artificial Intelligence for predicting an age group and also used a machine learning technique[9]. Nowadays many companies and organizations delivered a product and provide a service to their customer via an online platform but not all customers are the same or have different interests. Gender is the main reason behind these problems. If Gender is determined correctly on an online platform or social media then the amount or cost of the product increases using a machine learning technique for analyzing the comments of companies. Predicting the gender enhances the accuracy level of the model.

4. DISCUSSION

We use our method for classification dataset accuracy for the prediction of gender and age. also predicting an age group. Classifying the correct gender of a person. containing dataset for labels of gender like male and female.

Using a Deep Convolutional Neural Network (D-CNN) for recognition and predicting of an object. In modern Convolutional Neural Network(CNN) like VGGNet, LeNet-5 network architecture is completely moderate because of the limited number of resources such as time, memory, processing power, and another algorithm for challenging huge networks. The aim is to learn to preprocess the input image and convert it into meaningful floating-point tensors. A neural network with a huge number of neurons layer is there, the have vogue because of unpredicted rise in both the computational power with the use of Graphical processing units and dataset easily available on the Internet. We are going to collect a dataset and also used a dataset for our experiment. It contains 100k celebrity face images for reading images and convert into Gray-Scale for the detection or predicting cropping of visible faces using Convolutional Neural Network (CNN)

It measures the percentage of face images that were classified into the correct age group and gender :

$$\text{Accuracy} = \frac{\text{Accurate prediction}}{\text{Total prediction}}$$

5. CONCLUSION

We initiated the classification of gender(his or her image) and age group unfiltered real-world facial images. We passes a task as a multiclass classification of the problem, trained the model or a system according to prediction, and trained the model for the accomplishment of our result. our approach achieves the best result not only for gender but also on age estimation. We trained our network model to classify facial images into eight age groups and enhance the performance or increase the accuracy of the model. Our aim for proposed a model that is originally trained on age and gender prediction on a large data scale. The image preprocessing algorithm handles some of the variability observed in the real world faces. And this confirms the model relevancy for gender classification and age estimation. For future works, we will consider a Convolutional Neural Network(CNN) architecture for preprocessing an image and age prediction. Also age prediction or estimating the age of a human's face will be interesting to explore in the future.

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