PROJECT SYNOPSIS

on

GENDER AND AGE DETECTION SYSTEM

towards partial fulfillment of the requirement

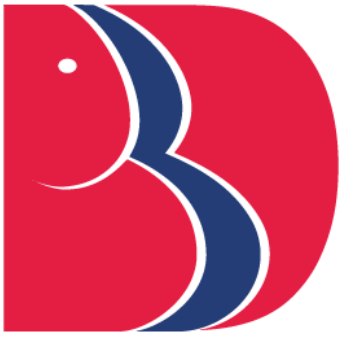
for the award of degree of

Master of Computer Applications

from

Babu Banarasi Das University

Lucknow



Academic Session 2022 - 2023

School of Computer Applications

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Babu Banarasi Das University

Lucknow

CERTIFICATE

This is to certify that Project Report entitled

Gender & Age Detection System using Computer Vision

Being submitted by

Harendra Prajapati

towards the partial fulfillment of the requirement

for the award of the degree of

Master of Computer Applications

to

Babu Banarasi Das University Lucknow

in the Academic Year 2022-23 is a record of the student's own work carried out at BBD University Lucknow and to the best of our knowledge the work reported herein does not form a part of any other thesis or work on the basis of which degree or award was conferred on an earlier occasion to this or any other candidate.

Prabhash Ch. Pathak

HEAD (School of Computer Applications)

1-INTRODUCTION OF THE PROJECT

Age and gender, two of the key facial attributes, play a very foundational role in social interactions, making age and gender estimation from a single face image an important task in intelligent applications, such as access control, human-computer interaction, law enforcement, marketing intelligence and visual surveillance, etc. The enhancing of raw images that are received from the camera sources, from satellites, aircrafts and the pictures captured in day-to-day lives is called image processing. The images have been processed through many different techniques and calculations have been made. In this paper we endeavour to close the gap between automatic face recognition abilities and those of age and gender classification techniques. To this end, we take after the fruitful sample set around late face recognition frameworks: Face recognition systems portrayed in the most recent couple of years have demonstrated that gigantic advancement can be made by the utilization of profound convolutional neural networks (CNN). We show comparative additions with basic system engineering, composed by considering the somewhat constrained accessibility of precise age and gender classification names inexisting face information sets.

Objective:

To build a gender and age detector that can approximately guess the gender and age of the person (face) in a picture using Deep Learning on the Audience dataset.

Scope:

Automatic age and gender classification has become relevant to an increasing number of applications, particularly since the rise of social platforms and social media. Nevertheless, performance of existing methods on real-world images is still significantly lacking, especially when compared to the tremendous leaps in performance recently reported for the related task of face recognition. A Convolutional Neural work is a deep neural network (DNN) widely used for the purposes of image recognition and processing and NLP. Also known as a ConvNet, a CNN has input and output layers, and multiple hidden layers, many of which are convolutional. In a way, CNNs are regularized multilayer perceptron. It is very difficult to accurately guess an exact age from a single image because of factors like makeup, lighting, obstructions, and facial expressions. And so, we make this a classification problem instead of making it one of regression. The major applications are Detect faces Classify into Male/Female Classify into one of the 8 age ranges Put the results on the image and display it

Modules

1.Webcam controller

2 Dataset collection

3.Dtaset preprocessing

4.Frame capture and conversion

5. Gender and Age algo creation

7. Gender and Age algo training

8. Gender and Age visualization

9. Gender and Age prediction

10.View display system

Module Description

1.Webcam controller -This module contain all the code related to accessing the webcam using code.

2. Dataset collection – In this module where we will write the code for loading thedataset into the project so that we can read the files and images.

3. Dataset preprocessing- This module will remove all the unimportant files and unimportant folders and it will take only the important content that code will be stored in mask dataset preprocessing.

4.Frame capture and conversion- For detecting faces we have to convert the images into grey color and we have to capture that from the webcam so this module contain that process.

5. Gender and Age detection system- This module will contain the logic and code for detecting faces and Age in the camera.

6. Gender and Age Algo creation- This module will contain the CNN algorithm for handling the code of creating architecture of algorithm.

7. Gender and Age training- Algorithm training module will handle all the code related to training and controlling how many times we train our model for accuracy.

8. Gender and Age algo visualization- This module will handle the output and performance of the model so that we can understand if the model is good or bad.

9. Prediction- **Gender and age** prediction system will predict the Age and gender in the camera and it will display output as Gender (Male/Female) and age.

10.View display system- This module will contain code related to frontend application we will be creating.

Resources (Hardware & Software) to be used:

1. Hardware Requirements

Client Side

Processor	Dual Core or above
RAM	2 GB
Disk space	120 GB
Monitor	Standard
Others	Keyboard,mouse,Internet Connection

Developer Side

Processor	Quad Core or above (1.5 GHz or more)
RAM	4 GB or above
Disk space	500 GB
Monitor	standard
Others	Keyboard, mouse, Internet Connection

2. Software Requirements

Client Side

- Web Browser (Google Chrome, Firefox, IE9 or above)
- Python
- Required libraries

Developer Side

- Web Browser (Google Chrome, Firefox, IE9 or above)
- Python 3.7 or above
- Vs code(IDE)
- SQLite manager
- Libraries(NumPy..)

Project Schedule Plan:

The objective of Software Planning is to provide a framework that enables the manager to make reasonable estimates of resources, cost, and schedule. These estimates are made within a limited time frame at the beginning of a software project and should be updated regularly as the project progresses. In addition, estimates should attempt to define best case and worst case scenario so that project outcomes can be bounded.

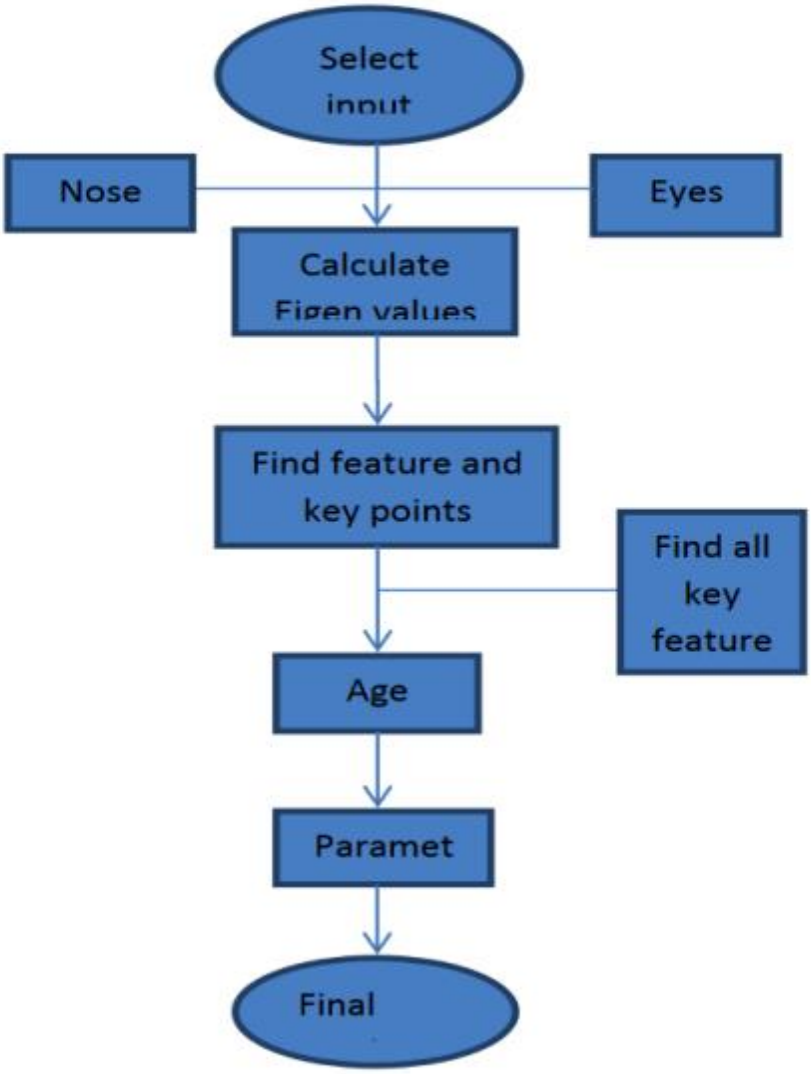
Gantt Chart

A Gantt chart is popular type of chart that illustrates a project schedule. Gantt Chart illustrates the start and finish dates of the terminal elements and summary elements of a project. Terminal element and summary comprise the work breakdown structure of the project.

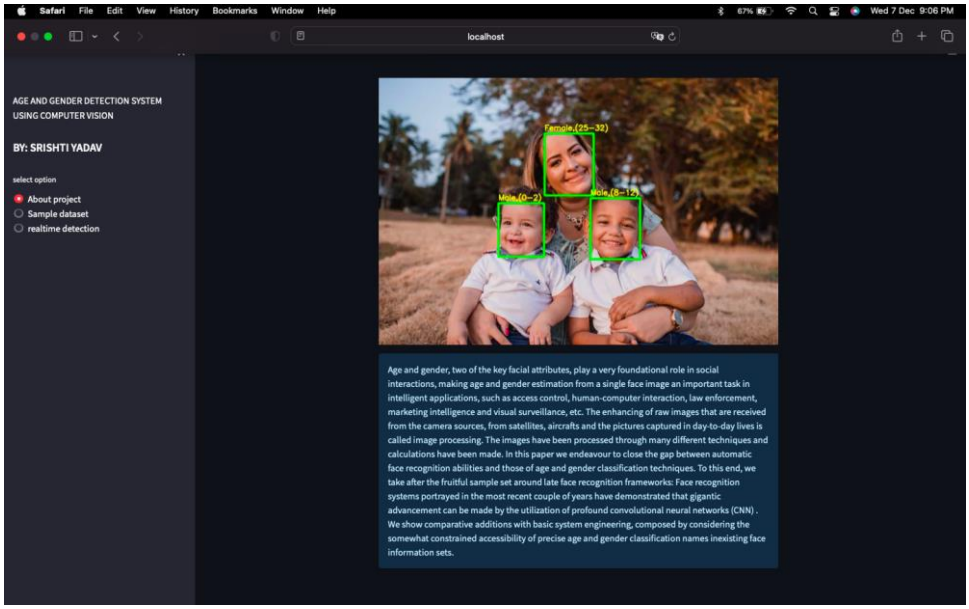
Task	4Aug-28Aug	29Aug-9Sep	10Sep-12Oct	13Oct-16Nov	17Nov-22Nov	23Nov-28Nov
Develop project proposal	27 days					
Analysis		10 days				
Designing			30 days			
Coding				34days		
Unit Testing					5 days	
Implementation						5 days

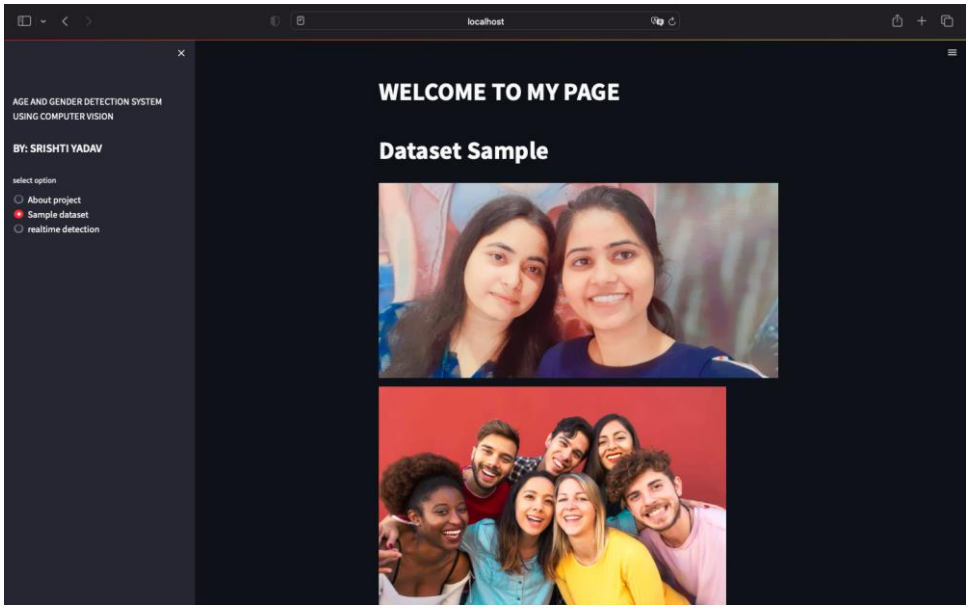
Gantt Chart

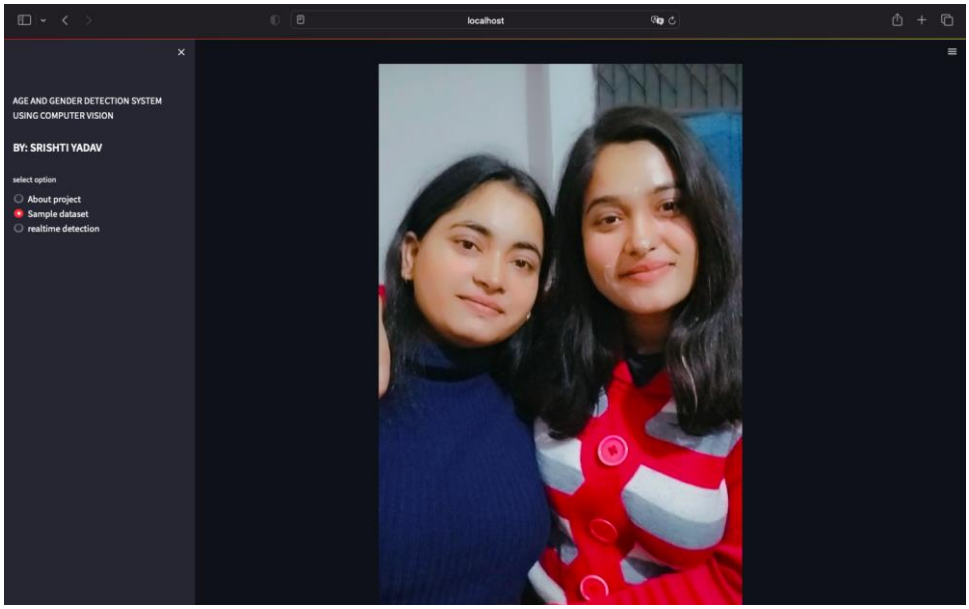
Flow Chart of Proposed Technique



SCREENSHOTS OF PROJECT



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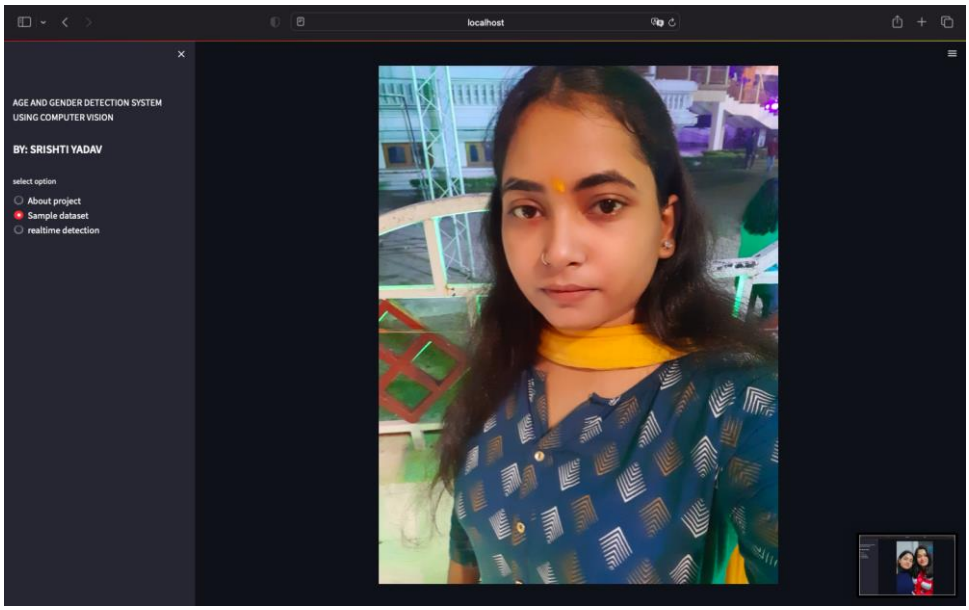
AGE AND GENDER DETECTION SYSTEM
USING COMPUTER VISION
BY: SRISHTI YADAV
select option
About project
Sample dataset
realtime detection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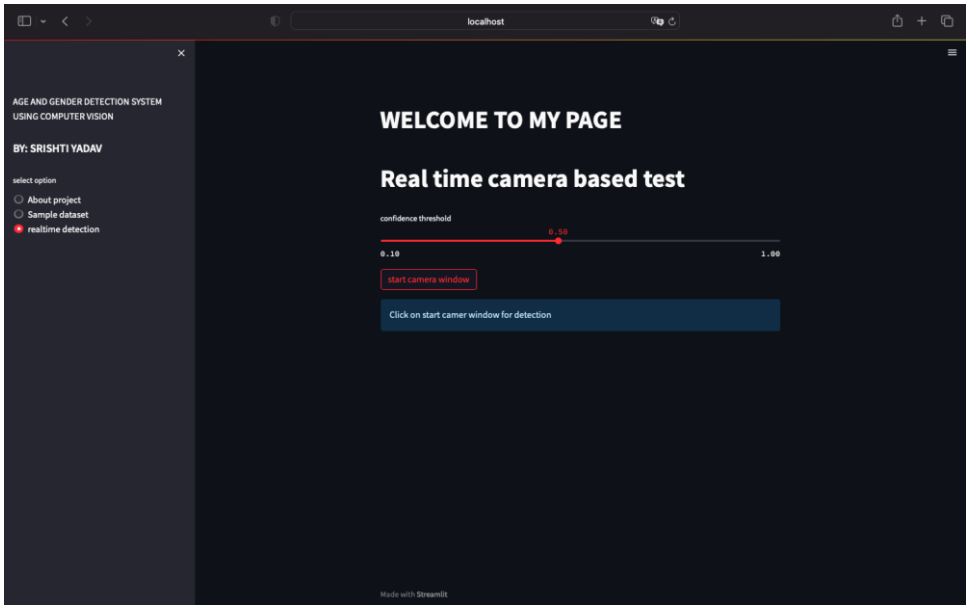
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AGE AND GENDER DETECTION SYSTEM
USING COMPUTER VISION
BY: SRISHTI YADAV
select option
About project
Sample dataset
realtime detection
WELCOME TO MY PAGE
Real time camera based test
confidence threshold
0.50
0.10
1.00
start camera window
Click on start camer window for detection
Made with Streamlit

FUTURE SCOPE

When changing a dataset, the same model can be trained to predict the feelings of race etc. Age and gender classifications can be used to predict age and gender in uncontrolled real-time situations such as train stations, banks, buses, airports, etc. For example, depending on the number of male and female passengers by the age on the train station, toilets and restrooms can be built to facilitate transportation.

CONCLUSION

acknowledgment, we investigate how well profound CNN perform on these assignments utilizing Internet information. We provide results with an incline profound learning architecture designed to keep away from over fitting because of the impediment of constrained marked information. Our system is "shallow" contrasted with a portion of the late system designs, along these lines diminishing the quantity of its parameters and the chance for over fitting. We advance swell the extent of the preparation information by falsely including trimmed variants of the images in our preparation set. The subsequent framework was tried on the Adience benchmark of unfiltered images and appeared to fundamentally beat late cutting edge. Two critical conclusions can be produced using our experimental outcomes. In the first place, CNN can be utilized to give enhanced age and gender arrangement results, notwithstanding considering the much little size of contemporary unconstrained image sets named for age and gender classification. Second, the straight forwardness of our model suggests that more involved frameworks utilizing more preparing information might well be able to do significantly enhancing results beyond the one reported here.