***FACE ANALYZER - FACE ANALYSIS IN A VIDEO CALL THROUGH IMAGE PROCESSING***

***ABSTRACT***

A real-time, GUI based automatic Emotion, age and Gender classification system is developed in this project. The system is implemented on a desktop with a Graphical User Interface. Initially it detects the faces in the images that are grabbed from a web camera. We describe a methodology and an algorithm to estimate the real-time age, gender, and emotion of a human by analysing the images of faces on a webcam.

Here we discuss the CNN based architecture to design a real-time model. We implement a general Convolutional Neural Network (CNN) for designing and validating our model by creating a real time vision which accomplishes the task of face detection, gender and emotion classification simultaneously. We got accuracies of 95% in the IMDB-/WIKI age and gender dataset and 66% in the FER emotion recognition dataset.

Emotion, gender and age detection of facial images in webcam play an important role in many applications like forensics, security control, data analysis, video observation and human-computer interaction. All the tools and operating, used to develop this system are opensource tools.

***Aim of the project***

The aim is to predict the emotions, age, gender of individuals using image data sets. An growing number of applications, especially after the increase in social networks and social media, are being concerned with automatic emotion, age, Gender classification. Age and gender, emotions are the two most fundamental facial qualities in social interaction. In smart applications, such as access control, human computer interaction, enforcement, marketing intelligence and visual supervision, etc, it is important to make age evaluations using one’s facial image.

***Scope***

The main scope of the project is to build a real time robust emotion, age and gender detection model by using convolutional neural network model and use it to predict the emotion, age and gender of the person in an image. This project can also be used in a supermarket to gather client statistics to make informed decisions, increase the quality of their service, and improve customer service. This is done making use of face recognition and age/gender classification algorithms applied over client’s images, which allows for such statistics to be generated.

***Applications***

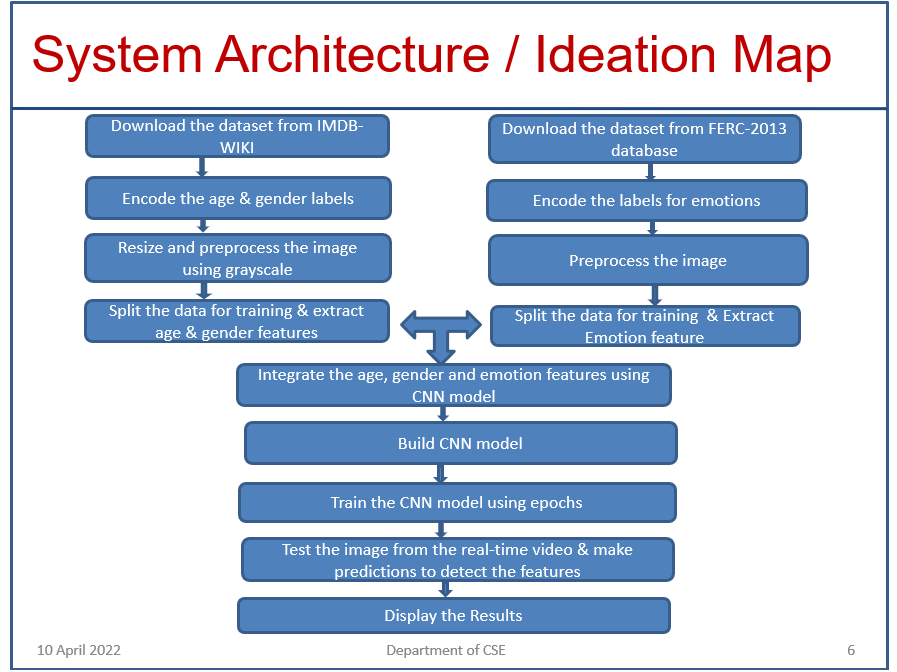
There is a huge amount of image data in the world and growth of itself is increasing. Facial expression recognition likes gender classification and emotion recognition is a robust system that can be used in the following section.

* Medical research
* Security
* Targeted Marketing
* Augmented Reality
* Better selfies!
* Virtual makeup
* Driver monitoring
* Face filters
* Biometrics
* Eyewear try-on

***Datasets***

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| IMDB-WIKI | For age and gender detection |
| FER 2013 | For emotion detection |

***IDEATION MAP***

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