Image processing (Gender + age recognition) via deep learning

Software Engineering Project proposal

Team members:
153157 Muhammad Omer Affan
153181 Muhammad Abdullah
153187 Sohail Asghar
153200 Muhammad Sohail

Introduction

The purpose of this project is to produce a software that predicts the gender of a person and his/her age. By using different algorithms, procedures and techniques, the software shall produce stated results through image processing via deep learning.

Clear Statement of the Problem

It's often seen on social networking platforms/resumes/curriculum-vitaes have people lying about their age. Prediction of gender and age of a person from an image, shall help correct depiction of age of the person, whose image is being processed.

Objectives & Scope

The project aims to implement a software capable to analyse features and details of human faces and predict gender, plus age group of a person, in a particular image. This image could be a frame from a live video at a particular moment/instant, or just a photo of someone.

Getting to know the age and gender of a person would help in analysis of data, perhaps calculate the ratio of genders by successfully analysing a crowd of people. Analysing surveys and feedbacks for gender and/or age group ratio.

Motivation

The possibilities in future to progress object analysis to a higher and more sophisticated level. Imagine a scene, discrete objects analysed, in a live broadcast, to minimize acts of terrorism.
Now imagine another scene, a jewellery store being robbed by some guys, with pistols, if only a cctv camera was intelligent enough to contact the police automatically.

Related Work

- 2D to 3D image prediction,
- Security implementation for mobile technology,
- Real life pictures to animation conversion

Project Plan / Schedule

The project would follow the procedure of incremental process model, with detailed documentation of each and every step. Each stage of the model will be explicitly documented on 'release basis'.

Requirements:

- Python IDE
- OpenCV (not confirmed to be used)
- NumPy (not confirmed to be used)
- Video camera (not confirm to be used)

[**NOTE:** ***The requirements stated as 'not confirmed to be used' have a possibility to be used as a combination in a module, to be used individually in a module, or not used at all.***]