King Fahd University of Petroleum & Minerals
College of Computer Sciences and Engineering
Information and Computer Science Department

ICS 411: Senior Project (Term 172)

AGE AND GENDER RECOGNITION USING DEEP LEARNING

Initial Plan Document

Mustafa Al-Turki	**201351850**
Majed Alshaibani	**201381710**
Haythem Albetairi	**201379790**

FEBRUARY 8, 2018

DEEPVISION
KFUPM

Table of Contents

Introduction

Purpose of this document

This document first introduces the need of age and gender recognition system that automates the process of detecting the age and gender of a person using an image of their face. In addition, it provides an initial tentative plan for the project in the entire 15-week period including deliverables expected after each week.

Introduction and scope of the project

Project Overview

This project will result in a model capable of classifying age and gender of a person using deep learning algorithms. The images are acquired from a camera using OpenCV camera handling package in Python. The classification models will be trained using TensorFlow or Caffe Deep Learning libraries.

Problem statement

The area of face and age recognition receives a great interest in the last decades due to its importance in the cutting-edge web and mobile applications. Every day, social media applications stores dozens of personal photos and the need to analyze them is demanding to facilitate a better user experience [1]. The uses of developed tools in this area varies from personal security to personal identification and human computer interactions. The significant advances in this area produces models that are even able to outperform human abilities! [2]. Another great use of such applications is to aid computer to use proper linguistic attributes and wordings when interacting with humans. Many languages differentiate between men and women during communication and this is where this area provides a better solution [3].

Planned Schedule

Week	Tasks and events	Description	Deliverables	Date	Weight
2,3	Research, literature survey and getting familiar with necessary concepts, tools and libraries.	Efforts to understand the scope of the problem and environment that is intended to be used in the project.	Initial Plan Document	8/2	5%
4	Data Collection Requirement specification	Preparing a detailed plan of the incremental development iterations.	Requirements Document and Detailed Plan	15/2	10%
5	Performing preprocessing on the dataset.	Applying various image preprocessing techniques before using the dataset in learning.			10%
6,7,8	Using prebuilt models like Coffe and Tensorflow on the dataset. Analysis, tuning and testing of DNN model.	Using Coffe and Tesnorflow to classify age and gender of the dataset and assessing the performace. Designing and building the deep neural network that is intended to be used in learning.	Initial release Version 0.1	15/3	15%
9	Progress report	Writing a report about the achieved work.	Progress report	22/3	10%
10,11	Deployment on Android	Moving the project to the Android platform and preparing it to be used and tested by using the camera.	Release 0.2	5/4	10%
12,13	Finalization and Testing	Extensive testing and quality assurance measures to be applied on the project.		19/4	
14-15	Preparing the final report and presentation.	Writing a report about the project and the achieved product.	First version, Version 1.0	3/5	20%
14-15	Project demo and presentation	Performing presentation and demo.	Presentation	3/5	15%
14-15	Video about the projects (3-5 minutes)	Preparing a short video about the project	Video	3/5	5%

References

[1] Convolutional Neural Networks for Age and Gender Classification, Ari Ekmekji.

[2] DAGER: Deep Age, Gender and Emotion Recognition using Convolutional Neural Network, arXiv:1702.04280

[3] Age and Gender Classification using Convolutional Neural Networks http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.722.9654&rep=rep1&type=pdf