Introduction

In the recent years, recommendation system has become popular in many e-commerce websites. It helps users by suggesting products which they could buy. Traditionally, these systems relied on data-centric descriptors for content recommendation.

Facial analysis from images has gained a lot of interest because it helps in several different problems like better ad targeting for customers, better content recommendation system, security surveillance, and other fields as well. Age and gender are a very important part of facial attributes and identifying them are the very basic of facial analysis and a required step for such tasks. Many companies are using these kinds of tools for different purposes making it easier for them to work with customers, cater to their needs better and create a great experience for them.

Eye gaze tracking is the process of measuring eye activity, also known as the point of gaze. More specifically, it analyses human processing of visual information, measuring attention, interest, and arousal, making it an incredibly useful tool for research on human (and, increasingly, consumer) behavior. It can be used to help advertisers, marketing agencies, and research professionals, across many different industries, measure a person's point of focus and attention.

In this project, user's eye gaze and facial expression are captured while looking at a digital poster and content recommendation are predicted.

Objective

- To analyse visual attention (where, when, and what people look at) using eye tracking technology
- To analyse facial attributes (face and eyes) using deep learning to predict age, gender and emotion
- Explore the use of recommender system machine learning method on eye gaze together with facial analysis to provide content recommendation to user in areas such as retail and marketing

Description

The project seeks to predict content recommendation through the analysis of human's eye gaze and facial expression. An application of such would be in the area of F&B where a user looks at a poster of different food items and the system capture the eye gaze (what the user is looking at), analyse the facial attributes (predicting the age and gender) and suggest (i.e. predict) the dishes that user would consider.