

## Abstract

Eye tracking is widely used for research in the field of science and psychology. The gaze point of a person can be tracked. This eye movement data can be used to extract information such as point of interest and also helps visualize the gaze plots of a subject. Fixations and saccade are the two movements that make up the eye movement data. Every individual have unique eye movement patterns. Males and females have different strategies for scanning which helps for gender prediction. This study is about the gender differences for the interest in different regions of the human face in varying age groups. The study here is done on a new dataset of 378 participants which comprises 193 males and 185 females. The participants age groups are between 20—72 years. The stimulus in our work are still images of 8 different actors. To investigate the age effect on gender we split the data into 3 different age groups. The main aim of the thesis is to integrate this new and huge dataset into the existing Machine learning pipeline. Region of interests (e.g., bounding box for nose, mouth, left eye, right eye) are to be marked on the stimuli images. The number of the fixations, fixation duration, number of saccades, etc. for every region of interest has to be calculated and used as a feature to train the model to classify the gender. Using the different region of interests features, we can predict gender with accuracies of up to 64.5% in the age group of 31–50 years of age. Statistical analysis results have shown that there is no significant effect of our age groups on gender prediction. Statistical analysis also shows that women make more fixations to the left eye region of the stimulus as compared to males. The analysis shows that males and females might have different regions of interest while gazing at the human face.