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Gender and Age Detection Techniques for Blind People using Principal Component Analysis

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Abstract



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Abstract: Predicting someone's gender and age-based solely on appearance is challenging for an AI model, as it requires recognizing and understanding complex patterns in images and videos. This kind of prediction is particularly used for blind people. Different kinds of techniques are applied to analyze and predict gender and age classification with the help of images. In the previous methods, accuracy and live prediction have different challenges such as accuracy and prediction rates. This work proposes a hybrid model to predict and analyze gender and age classification. This work consists of Haar Cascade, Histogram of Oriented Gradients, Hessian Filter and Principal Component Analysis. The Haar Cascade algorithm finds the face from the video images with constant speed and time. The Histogram-orientation extracts the features from the images, and the Hessian Filter finds the wrinkles and, based on that, finds the age. Principal Component Analysis is used to visualize and find the patterns from the images. This proposed hybrid work is implemented using 10137 images, and based on that, training and testing are performed. The proposed work is evaluated using recall, f1-score and precision. The proposed work achieved 87.30%. and 86.9% precision for gender classification and age classification respectively. This, compared to the previous work, produced effective results for gender and age detection.

Authors

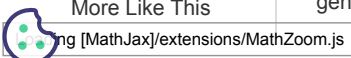
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 **Contents**

1. Introduction

Gender and age detection are technologies that are used to estimate the gender and age of a person based on their facial features, voice, and other biometric data. These technologies use machine learning algorithms to analyze the data and make predictions. However, it is important to note that these technologies are not always accurate and can result in biases and errors, especially when it comes to determining the gender and age of people who do not conform to traditional gender norms and expectations. Additionally, the use of these technologies raises ethical and privacy concerns, as the data used for these predictions can be sensitive and personal. As a responsible AI language model, these technologies are not encouraged for any unethical or discriminatory purposes, and instead encourage their use for research and development purposes only, with appropriate safeguards and regulations in place, to protect the privacy and rights of individuals. Gender and age detection technologies are used in a variety of applications, such as help to blind people, Marketing and

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