

An Approach towards to Real Time Face Detection using Haar Cascade Algorithm and Machine Learning Technique

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Abstract: Human visual awareness is currently a trending subject within the realm of machine vision. In domains like video monitoring, human-machine interaction, facial identification, and image organization, the initial step often involves locating and recognizing human faces. However, this task can prove challenging. Despite the availability of generic facial images, the processes of facial recognition and expression analysis are necessary. The exploration of computer-based recognition of unbiased facial data remains a relatively uncharted area of study. Facial recognition stands out as one of the remarkable achievements of AI research, captivating the interest of many tech enthusiasts eager to comprehend its underlying mechanisms. Let's delve deeper into this topic to gain insight into its functioning. This study elucidates how deep learning, a crucial component of computer science, can be employed to detect faces using various libraries within OpenCV and Python. The article will propose a cutting-edge technology for real-time human face detection, applicable across a spectrum of platforms including computers, smartphones, and software applications. This approach proves both efficient and effective in detecting faces within images. Furthermore, the article delves into popular OpenCV applications and classifiers utilized in tasks such as image manipulation, facial identification, object detection, and facial recognition. Lastly, various literary assessments are discussed, focusing on applications within computer vision disciplines like facial detection and recognition, as well as identifying emotions such as sorrow, anger, and joy, along with determining gender and age

Keywords: Python, OpenCV, Haar Cascade Algorithm, Machine Learning

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