

DEVISING A SIMPLE SKIN COLOUR DETECTOR

(GROUP 2)

INTRODUCTION

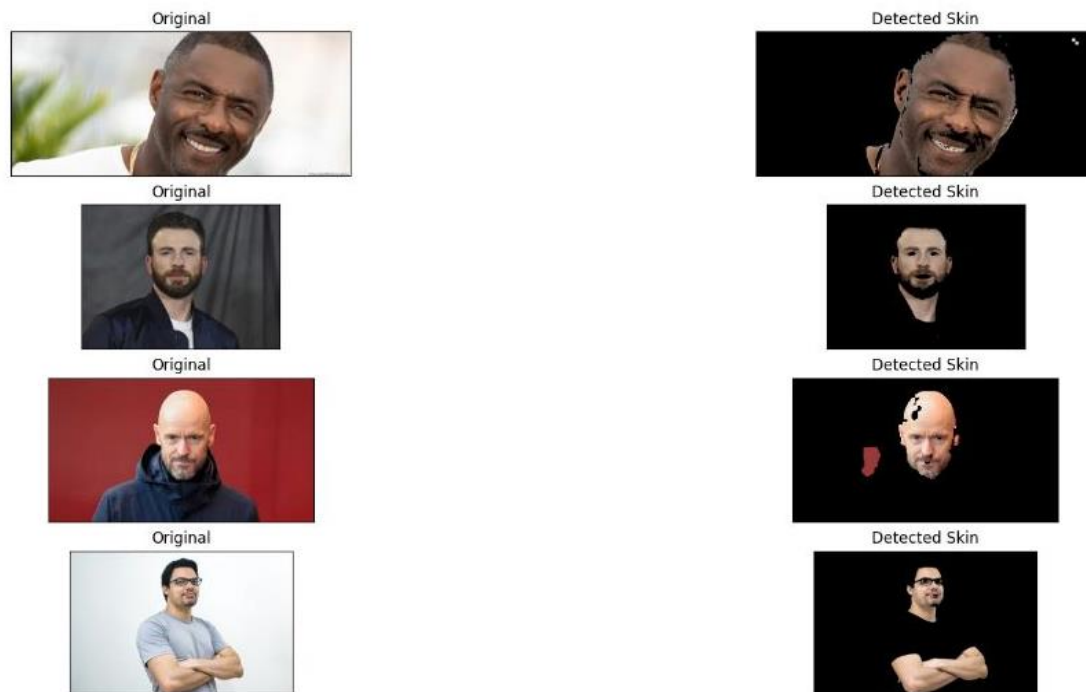
Process of detecting skin color from input images using OpenCV.

Skin detection is the process of finding skin-colored pixels and regions in an image or a video. This process is often used as a cue for detecting, localizing, and observing targets containing skin (like faces and hands in an image). It plays an important role in human motion analysis and face detection. In this project, we aim to devise a simple skin color detector using chromaticity analysis and visualize skin regions in the image.

METHODOLOGY

1. Read the image and convert it to HSV color space
2. Create a mask by defining skin color range in HSV color space using cv2.inRange function
3. Convert the original image to YCbCr color space
4. Create a mask by defining skin color range in YCbCr color space
5. Merge above created mask using bitwise and operation
6. Apply the merged mask to the original image to get the final output.

RESULT



DISCUSSION

This code will also detect any objects in background that has same color as skin.

The sensitivity of the algorithm to color balance (scene lighting) can vary depending on the lighting conditions of the scene. The algorithm uses the HSV and YCbCr color spaces to detect skin color, which are more robust to changes in lighting than RGB color space. However, if the lighting conditions are very different from the conditions used to set the skin color ranges, then the algorithm may not detect skin color accurately. To improve the robustness of the algorithm to changes in lighting conditions, one can dynamically adjust the skin color ranges based on the average color values in the image.

The use of chromaticity measurement, such as a color ratio, could potentially work as well for skin detection. However, the effectiveness of such a method would depend on various factors, such as the lighting conditions, the skin tones in the image, and the accuracy of the chromaticity measurement method. Therefore, it is important to evaluate the performance of any skin detection algorithm on a range of images and conditions to ensure its accuracy and effectiveness.