Face Swapping

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Description of Goals:

The goal of the project is to replace faces in an image with other faces. The motivation for this project stems from the growing concern of online privacy with today's large collections of high-resolution images. Online systems such as Google Street View allow users to browse photos of public images. Many of these photos contain people who have not consented to be photographed, much less for commercial purposes. While the current practice of obfuscating face regions using blurring or pixelation, it can often decrease the visual appeal of the image. One solution to this problem is to replace every face in the image with stock faces.

The algorithm for face swapping will involve a number of techniques learned in class, including: feature detection, image transformation, and color balancing. First, faces in the image will need to be recognized and located. Then, the orientation/pose of the face will need to be calculated. The color and lighting of the face will need to be extracted as well. Then, a suitable image from a database of stock faces will be chosen as a replacement. The stock face will need to be transformed into the correct orientation / pose and the color and lighting will be balanced with the original face to achieve a natural looking picture. The boundary of the adjusted stock face and the image will need to be blended as well to obtain a realistic look.

We will not be using an Android device for this project.

References:


