Fix Closed-Eye Images

Taking photo of people, especially group photo, could be challenging because some of them might accidentally close their eyes at the wrong moment. This is usually caused by flash light, anxiety, etc. I suppose we can fix closed-eye image by copy and paste seamlessly the eyes from another picture.

In the initial approach, I choose another photo of the same person, warp the face to the shape and position of the original face, then use alpha blending to combine the eyes with the original face.

![Original photo](image1) ![Same person](image2) ![Warping](image3) ![Alpha blending](image4)

This simple approach does not yield a convincing result. Thus, I have some ideas to improve the procedure:

- Use gradient blending to avoid the ring effect around the eyes.
- Figure out which landmark points is important to capture the eye.
- Find the most similar photo from a given set of pictures.
- Use 3D Morphable Face Model (such as Surrey models) to support different poses.