

Face Blurring Algorithm:

1. Reads an image using **cv2.imread()** function. since **matplotlib.pyplot** displays images in the RGB format, the code **cv2.cvtColor()** function. converts the BGR image to an RGB image.
2. Load Face detection classifier from the **haarcascade_frontalface_default.xml** file using the **cv2.CascadeClassifier()** function. Then, use the **detectMultiScale()** function to detect the faces in the **image** and returns the face data as a list of rectangles.
3. Iterate over the face data list, drawing a green rectangle around each face in the **image** using the **cv2.rectangle()** function.
4. Selects the region of interest (ROI) by cropping the **image** using the face coordinates obtained in the previous step.
5. Apply a Gaussian blur to the cropped image using the **cv2.GaussianBlur()** function to create a blurred image of the face.
6. Impose the blurred face ROI back onto the original **image** using the same face coordinates to replace the original face with the blurred face. Then Display the final output **image**.

