# Cartooning of real image in python

Submitted in partial fulfilment of the requirements for the award of degree of

**BACHELOR OF ENGINEERING**

**IN**

**COMPUTER SCIENCE &ENGINEERING**


CHANDIGARH UNIVERSITY

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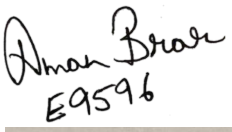
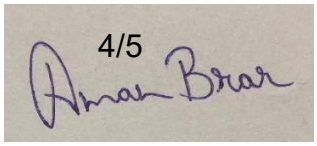


**Mentor Signature**




**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

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**Introduction:**

Cartooning a digital image sounds a very interesting, fun and easy to work on. So as to achieve an animation picture from a digital image, we only need some bilateral filter and edge detection mechanism. These bilateral filters will assist us with reducing the color or shading palette of the image, which is an important step for the animation look, and edge detection are used to get a perfect bold silhouette.

In the past few years, image cartomizer-software has been used for converting the normal image into a cartoon image. In this process, edge detection and bilateral filter are required. The bilateral filter is used to reduce the color palette of an image. Afterward, we can apply edge detection to this image for generating a dark shaped image. Therefore, finally, some tricks can apply for this image to get a cartoon image.

**Feasibility Study:**

Computer Vision as you know (or even if you don't) is a very powerful tool with immense possibilities. So, when I set up to prepare a comic of one of my friend's college life, I soon realized that I needed something that would reduce my efforts of actually painting it but will retain the quality.

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**Methodology/ Planning of work:**

1. The initial step of cartooning image is to apply the bilateral filter to decrease the shading or color palette of the image, which implies first we need to downscale the image and afterward apply the bilateral filter to get an animation flavor and again we upscale the image.
2. The next step is to get a blurred image of the real image. And we just need the blurring of the limits without colors to interfere in this process. So, for this, we first convert the genuine picture to grayscale.
3. The following stage is to apply the median blur so as to diminish image noise in the grayscale image.
4. Next, we make an edge mask from the grayscale image utilizing an adaptive thresholding technique.
5. In the last step, we have to recognize the edges in the image and afterward add this to the recently changed pictures to get cartoonish or sketch pen impact to the picture. After this step, we finally combine the final images obtained from the previous steps.

6. Here we get our cartoonist image.

**Module & Team Member wise Distribution of work**

**Kumar aakarshan:** main module with integration of all module

**Ritik dhand:** applied filter, CV etc

**Vanshika:** poetry.lock module , packeges such as numpy etc.

**Innovations in Project:**

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**Software requirement:**

Programming language: OpenCV- python,numpy,spicy

Operating System: Windows, Ubuntu

**Kit required to develop Cartooning an Image using Open CV:**

No kit

**Technologies you will learn by working on Cartooning an Image using Open CV:**

- Image Processing
- Computer vision
- Python

**Bibliography:**


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https://github.com/