

# CS412 – Individual Lab 1

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## Problem

In this assignment, you must implement some simple image manipulation using OpenCV in C++. Your program is called by command line arguments and perform the following functions

1. Load an image by reading it from a file.
2. Convert a color image into a grayscale image. The command line is

```
<Program.exe> -rgb2gray <FileNameInput >
```

3. Change the brightness of the color image. Add a trackbar in the output window to modify the brightness parameter. The command line is

```
<Program.exe> -brightness <FileNameInput >
```

4. Change the contrast of the color image. Add a trackbar in the output window to modify the contrast parameter. The command line is

```
<Program.exe> -contrast <FileNameInput >
```

5. Filter a color image/ a grayscale image using **average filter operator**. Add a trackbar in the output window to modify the kernel size parameter. The command line is

```
<Program.exe> -avg <FileNameInput >
```

6. Filter a color image/ a grayscale image using **Gaussian filter operator**. Add a trackbar in the output window to modify the kernel size parameter. The command line is

```
<Program.exe> -gauss <FileNameInput >
```

7. Show the input and output images.

## Submission

Your submission must organize into 2 folders and compressed in 1 file *StudentID.zip*

1. Document (contains your own report and user guide)
2. Release (contains executed file)
3. Sources (contain source code)