COGNITIVE COMPUTING – HOMEWORK 1

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Release Date: 09/18/2018.

Due Date: **09/25/2018**.

Cheating Policy: If you are caught cheating, you will get an F.

Submission: Please submit (1) code, (2) input image "input.png", and (3) output image "output.png" to ceiba, name your zip file with your **student ID.** i.e. d06944009.zip

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In this homework, you are required to implement an edge detector with **Python 3**. You can use any library or package to finish this homework. **You are encouraged to discuss with classmates, but copying is strictly prohibited.**

1. (20%) Get a photo of the NTU CSIE building. You can take it yourself or find one on web, but you have to claim the sources. Read the image into python and show it, the tools you can use include, but not limited to PIL.Image.read() or scipy.misc.imread().

2. (40%) Detect edges in this image with Sobel Operator, you can use scipy.ndimage.sobel(), cv2.sobel(), or implement it by yourself if you are interested in.

3. (30%) Write your school ID in the lower-left corner of the image with font size 12. You can use PIL.ImageDraw and PIL.ImageFont modules.

4. (10%) Save the output image (combining both 2 & 3) as "output.png"

Note. Sobel operator is commonly used for edge detection. You can refer the following for more information: https://en.wikipedia.org/wiki/Sobel_operator