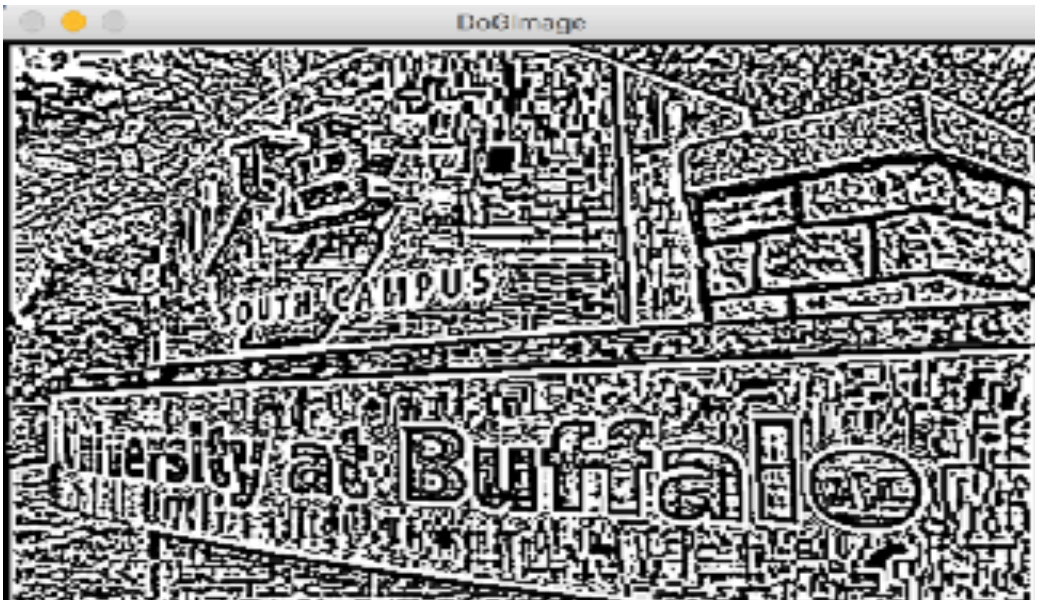
CVIP Homework 4 Report

Problem 1:

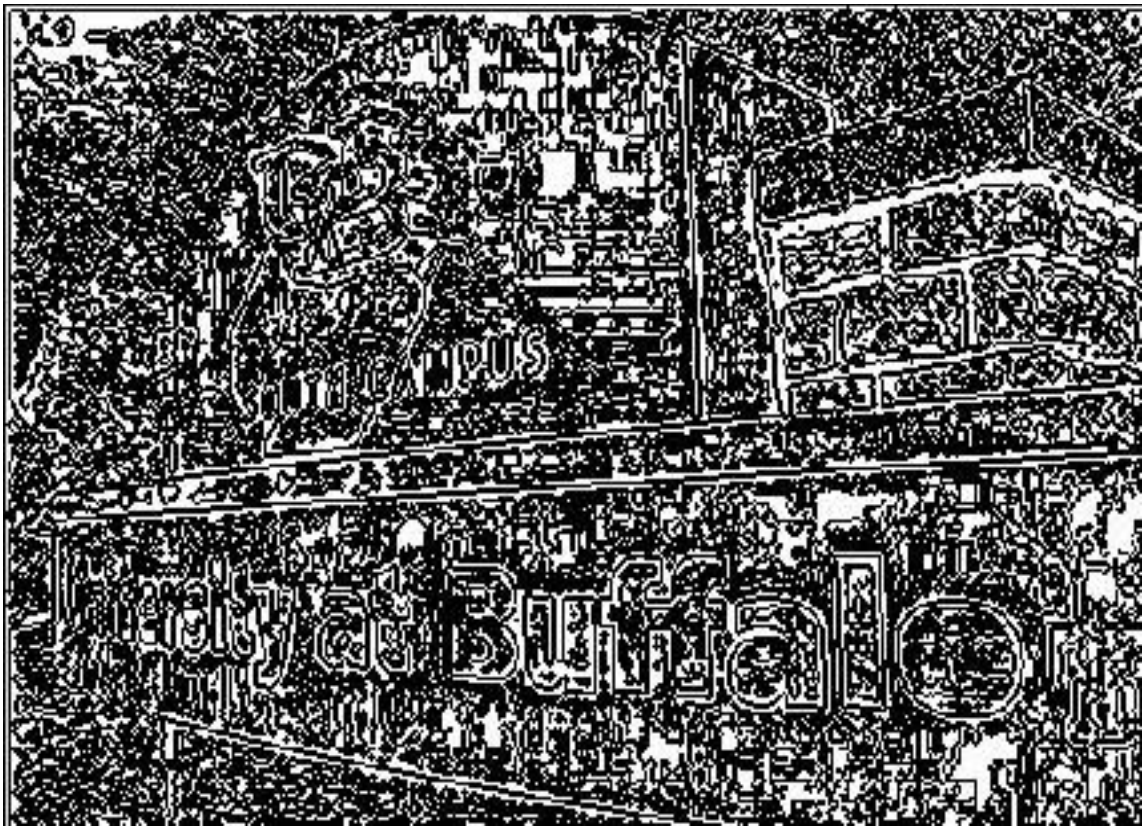
Original Image:

Gray scale image:

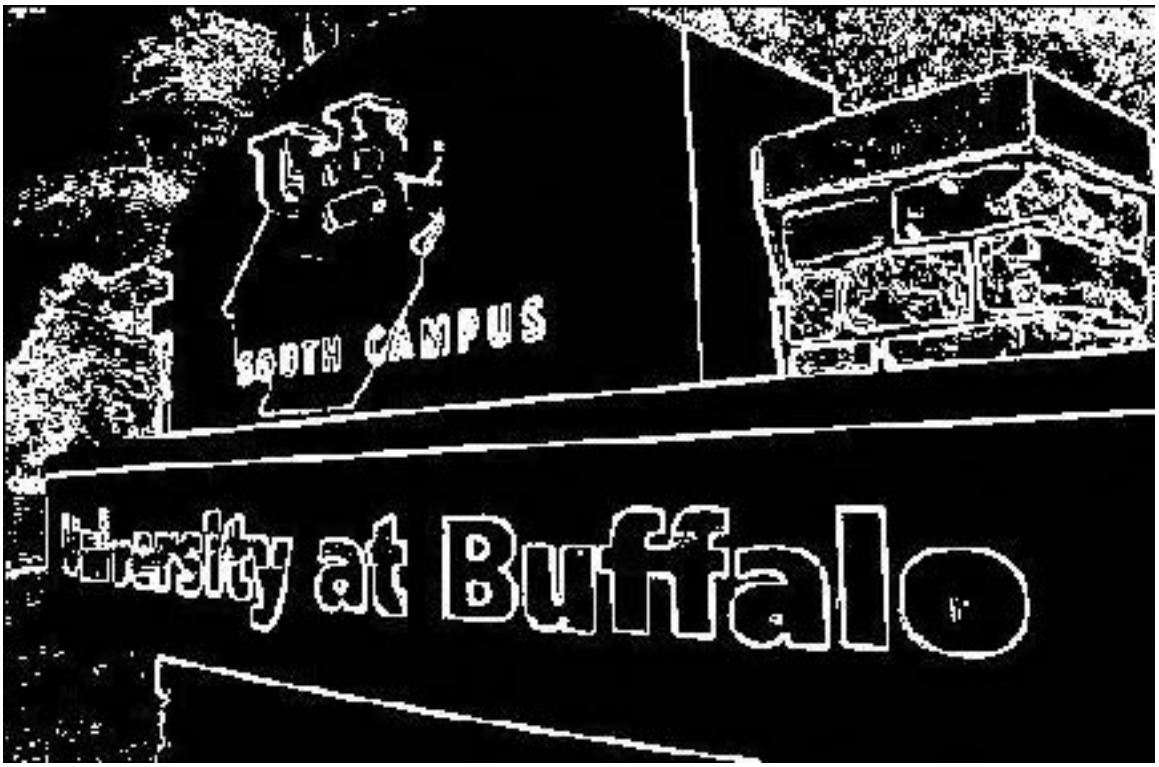
a. DoG image by applying the given DoG mask to the test image



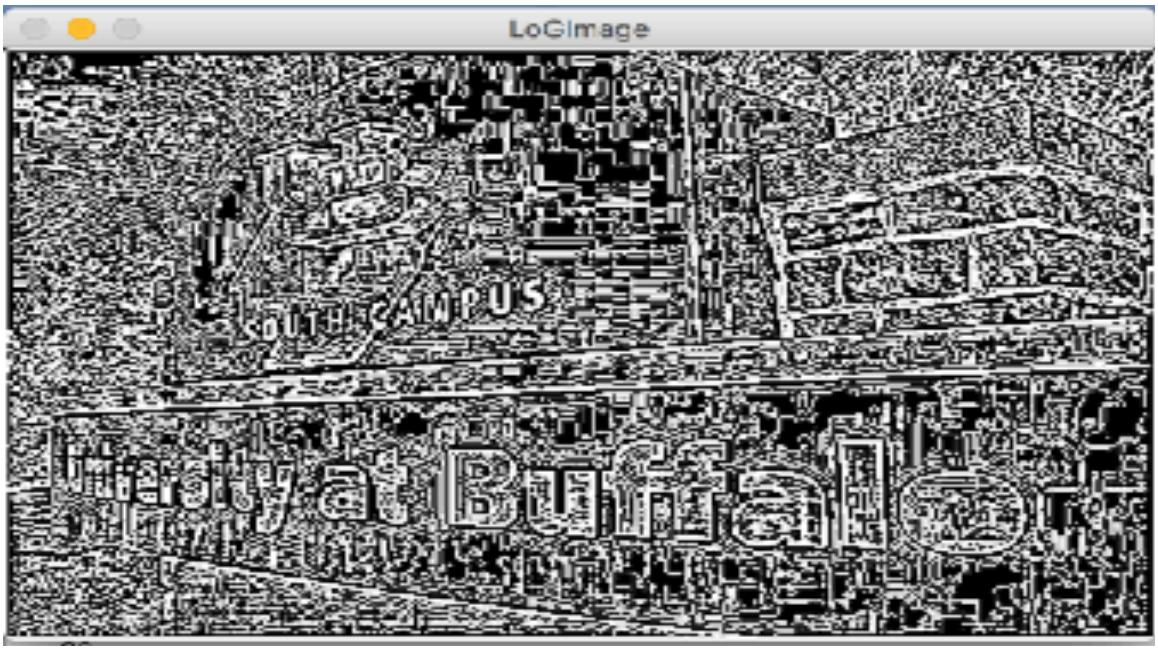
b. Zero crossing of obtained DoG image:



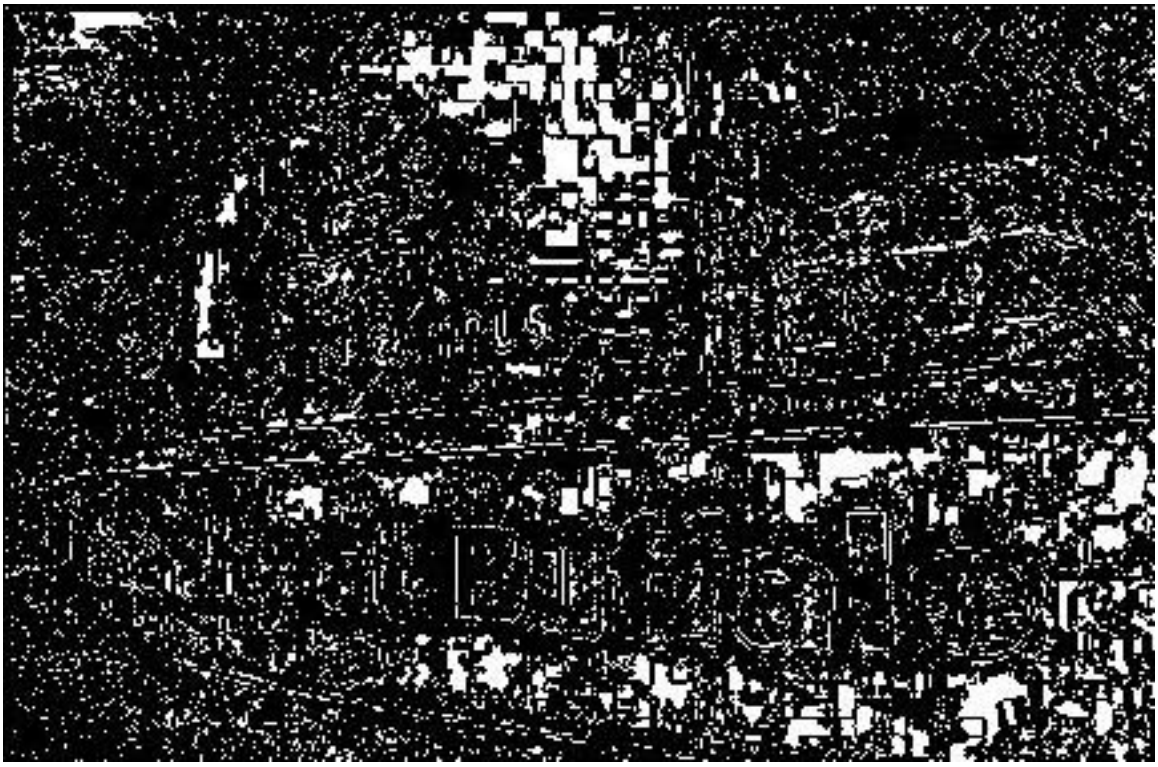
c. zero-crossing strong edges by removing weak edges that do not have first derivative support in (b)


SOUTH CAMPUS
Buffalo

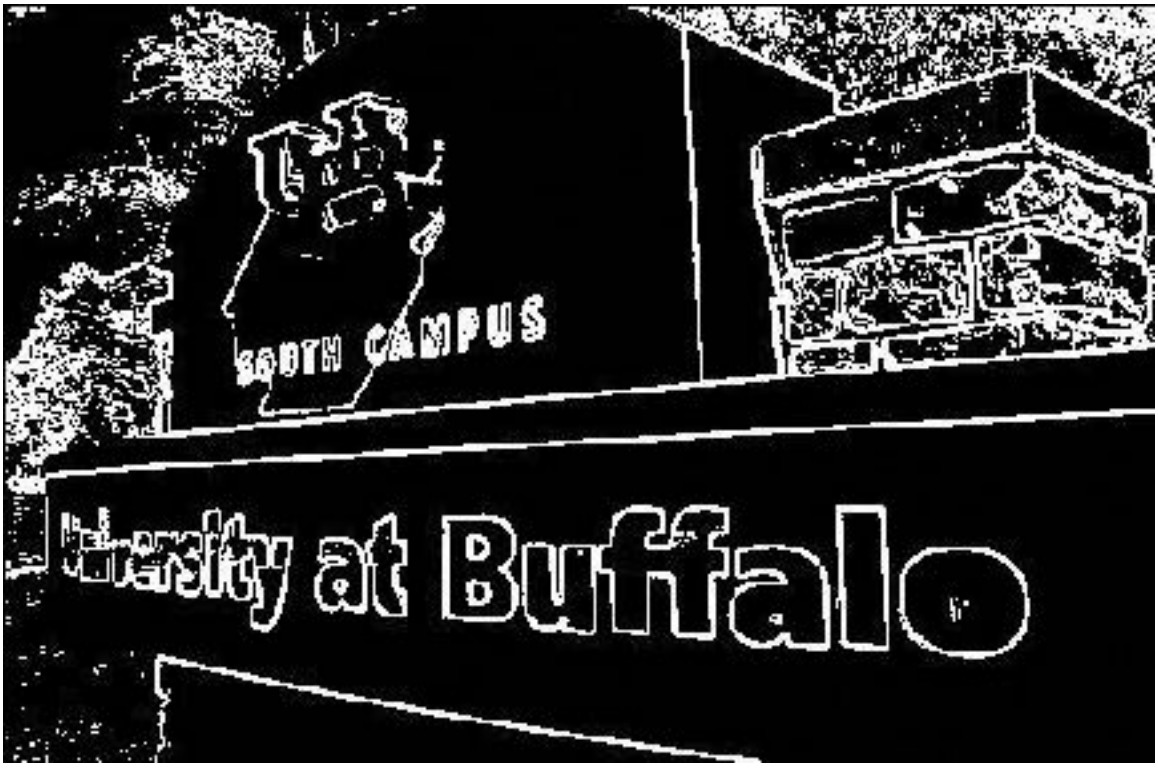
d. LoG image applying the given LoG mask to the test image



LoG zero crossed image:



LoG final image after removal of weak edges



e. Comparison between results obtained:

- After the application of respective masks of DoG and LoG, DoG has more clearly visible edges in the image compared to LoG.
- We can clearly see that the mask of DoG is more spread out than the mask of LoG.
- Straightforward zero detection on LoG and DoG images may produce broken edges and extraneous edges that are of negligible visual significance – post-processing is needed to obtain desired edges.
- Zero crossing on both the acquired DoG and LoG images, give distinct results and some are not clearly visible in the zero crossing of LoG image.
- But after the application of sobel filter on a selected threshold, the final results of DoG and LoG appear to be similar. This can be due to the normalization factor of magnitude performed in the sobel operator.

Problem 2:

Original Image:

Grayscale Image:

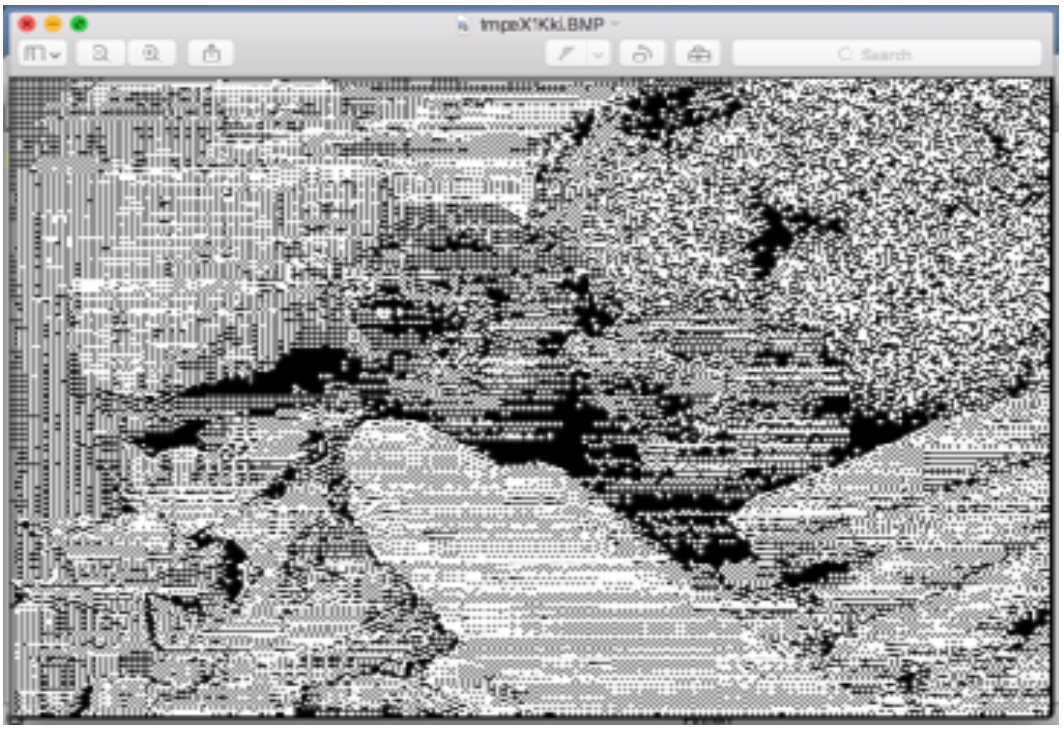
Supergrid image:

Supergrid image made by inserting the original grey image pixel values surrounded by 0's.

Cracked image which contains the pixel values of an applied threshold of T1=27 which provides a comparatively clearer understanding of the image segments.

After applying the threshold, we calculate the pixel value as the average of two adjacent pixel values.

The following image is obtained after averaging the adjacent pixel values for every image pixel with its 4 adjacent neighbors.


ImpeX'tKki.BNP
Search