

# Image Processing Assignment Results

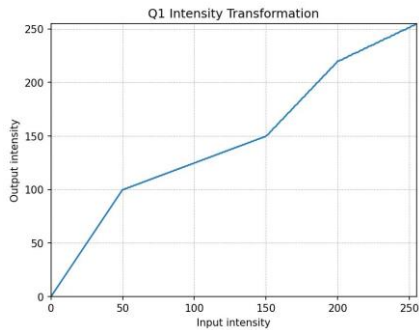
Index Number: 249337B

Name: Paramanathan Thushanthan

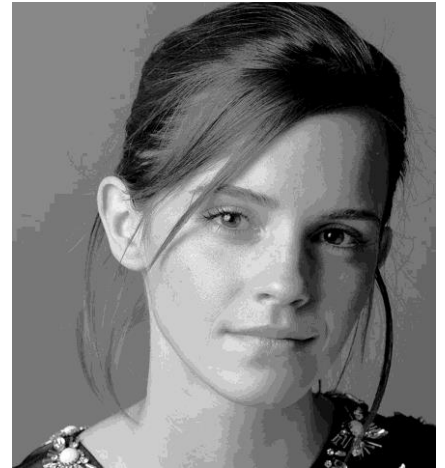
Github: [https://github.com/harithushan/intensity\\_transformations\\_and\\_neighborhood\\_filtering](https://github.com/harithushan/intensity_transformations_and_neighborhood_filtering)

## Question 1 : [Code for q1](#)

emma\_intensity\_transformation

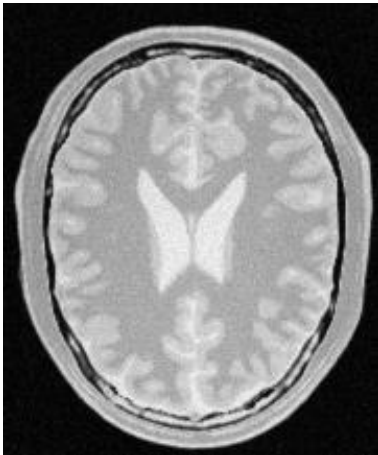


emma\_original

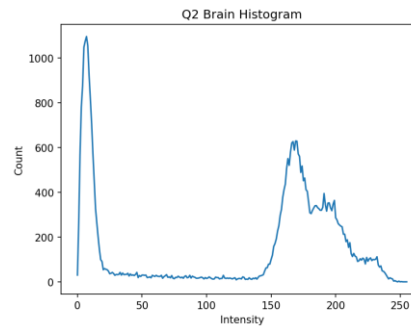


emma\_mapped

## Question 2: [Code for q2](#)



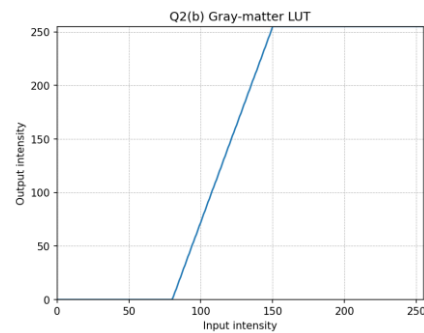
q2\_original



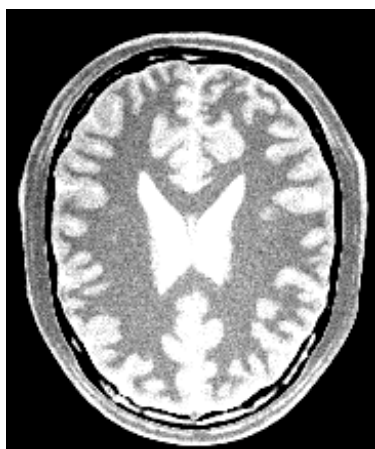
q2\_histogram



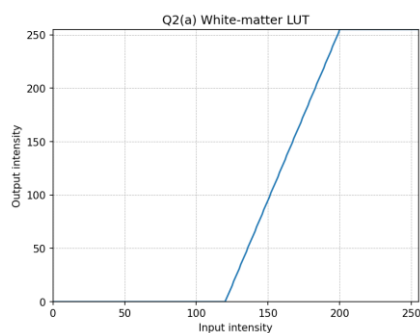
q2\_gray\_matter



q2\_gm\_transfer



qq2\_white\_matter

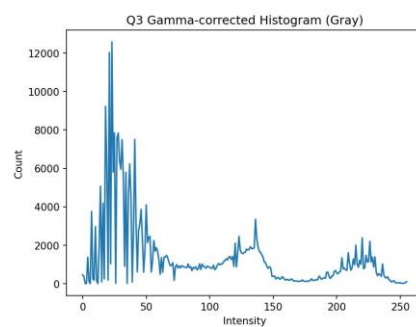


q2\_wm\_transfer

### Question 3: [Code for q3](#)



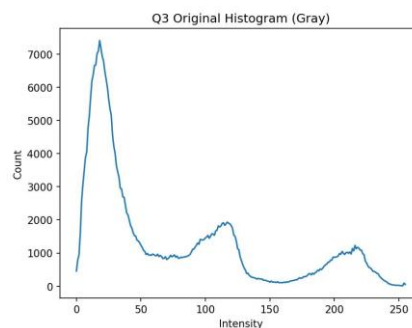
q3\_gamma



q3\_hist\_gamma



q3\_original



q3\_hist\_orig

### Question 4: [Code for q4](#)



q4\_spider\_original



q4\_spider\_h

q4\_spider\_s



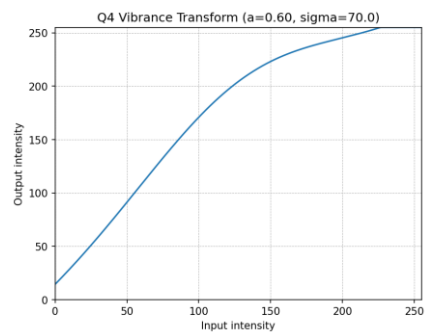
q4\_spider\_v



q4\_spider\_vibrance



q4\_spider\_transfer



### Question 5: [Code for q5](#)

q5\_original



q5\_h



q5\_s



q5\_v



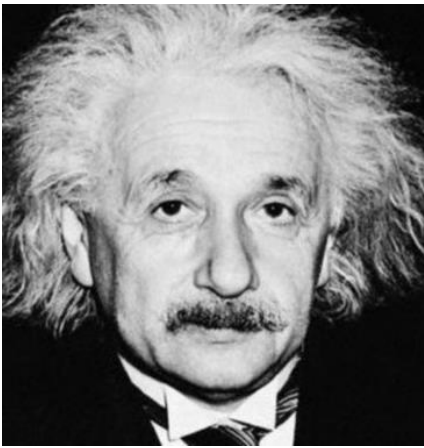
q5\_mask



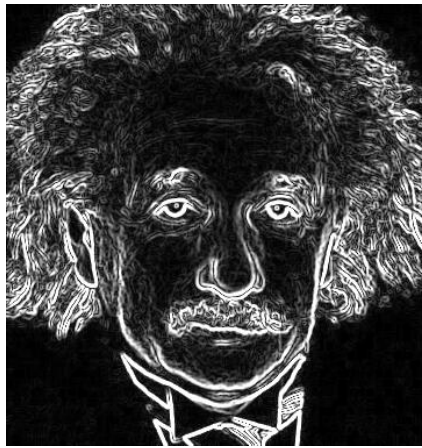
q5\_result



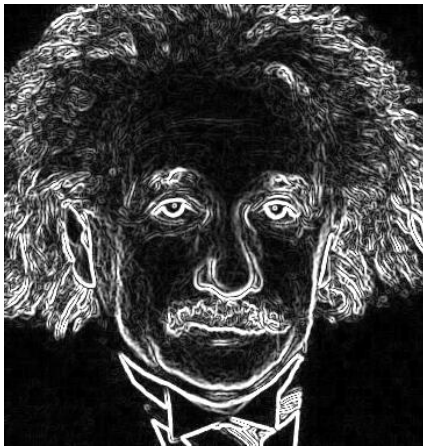
Question 6: [Code for q6](#)



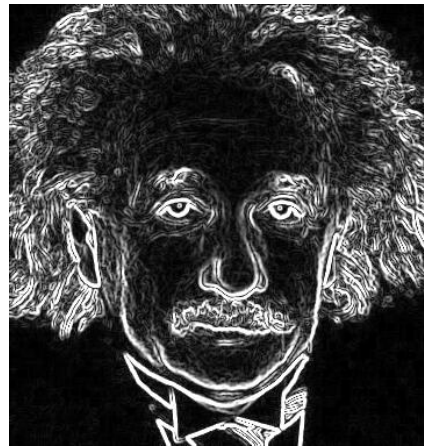
q6\_orig



q6\_a\_mag



q6\_b\_mag



q6\_c\_mag



Question 7: [Code for q7](#)



q7\_pair1\_blx4



q7\_pair1\_large



q7\_pair1\_nnx4



q7\_pair2\_blx4



q7\_pair2\_large



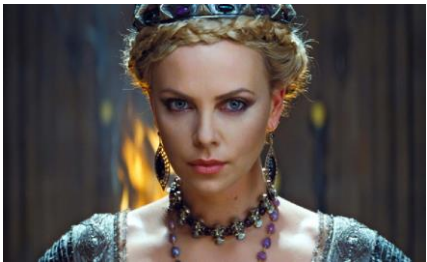
q7\_pair2\_nnx4



q7\_pair3\_blx4



q7\_pair3\_large



q7\_pair3\_nnx4



q7\_pair4\_blx4



q7\_pair4\_large

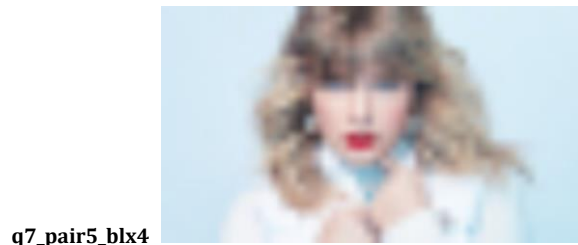
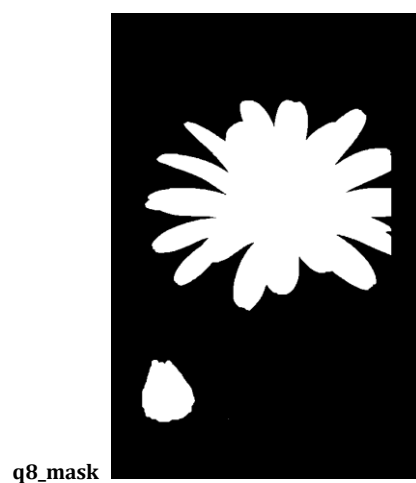
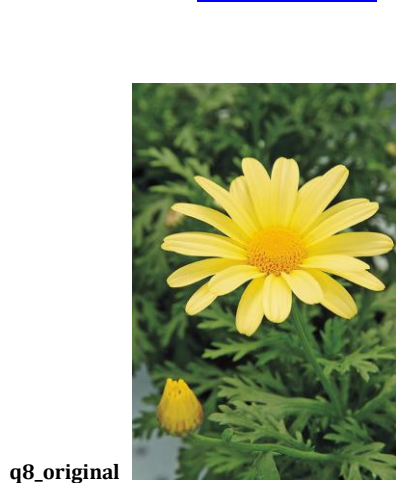
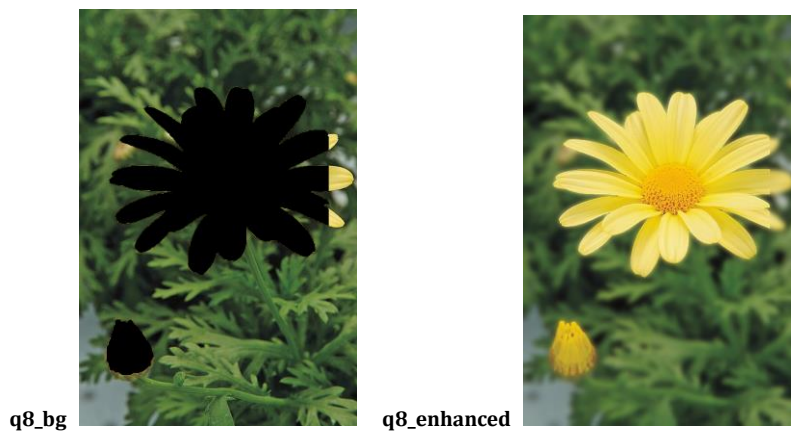


Image Pair	SSD (Nearest Neighbor)	SSD (Bilinear)
pair1	0.02259	0.01019
pair2	0.01024	0.00291
pair3	0.01472	0.00568
pair4	0.00686	0.00527
pair5	0.01579	0.01062

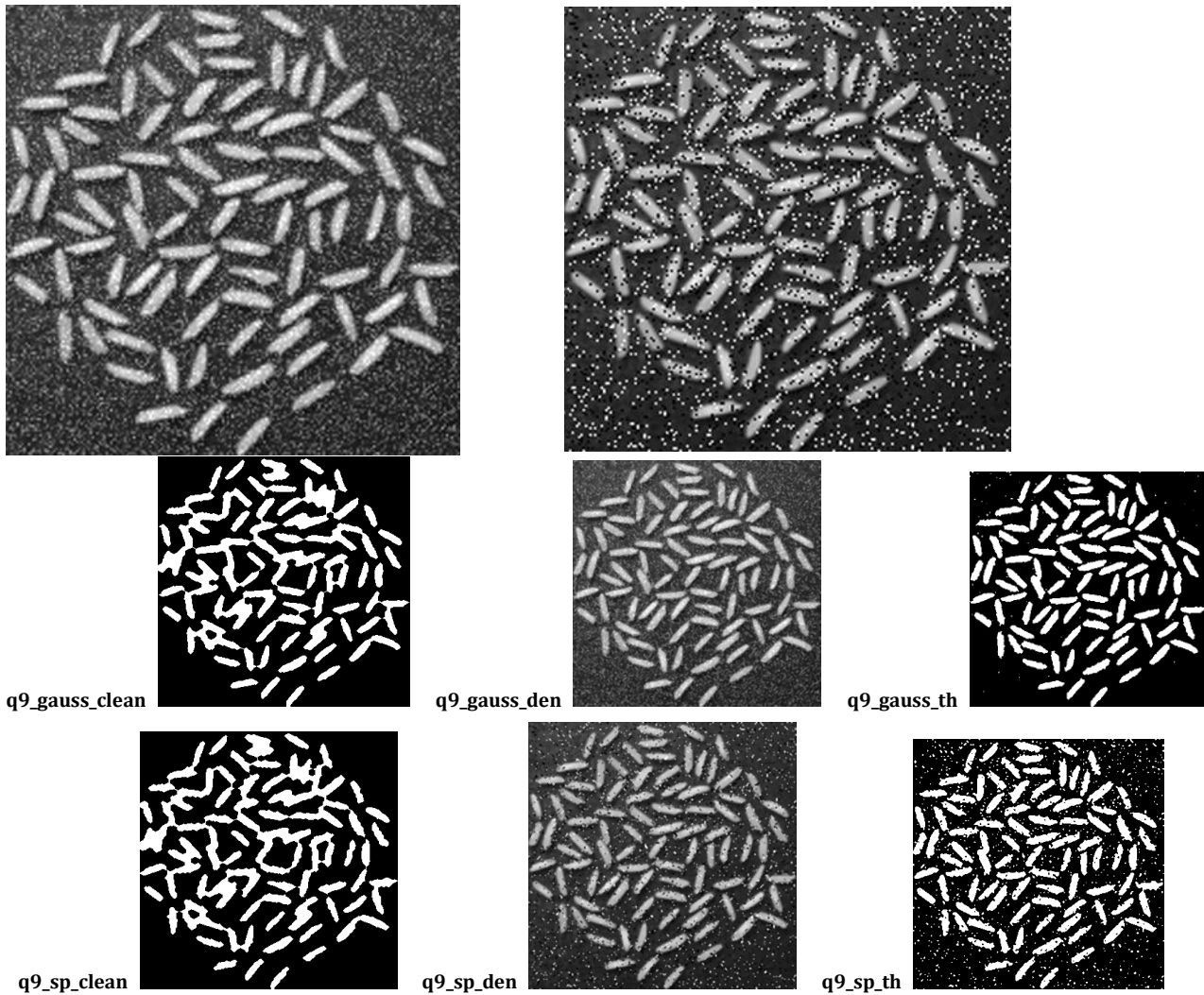
### Question 8: [Code for q8](#)



Dark rim occurs due to uncertain boundary labeling and blur mixing darker background near edges.



**Question 9: [Code for q9](#)**



**number of rice grains in Gaussian filter:36**

**number of rice grains in salt-and-pepper noise removal filter: 35**

Question 10: [Code for q10](#)

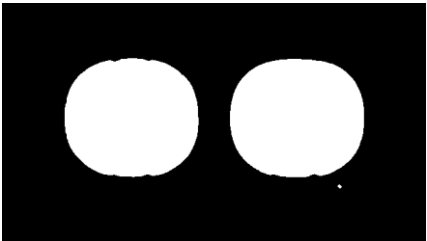
q10\_original



q10\_mask



q10\_filled



Sapphire Area (mm<sup>2</sup>)

1	1,710.8
2	1,719.0