clear all;

clc;

I = imread('retina\_images\1.tif');

I = imresize(I,.8);

figure, imshow(I);title('Input retina image');



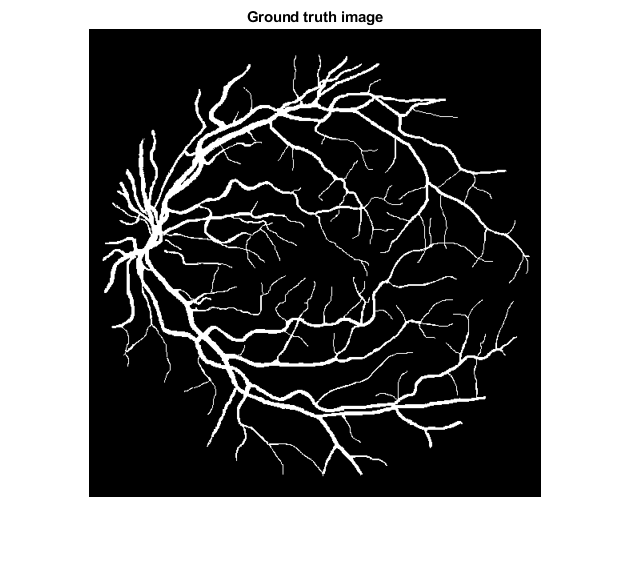
input = rgb2gray(I);

gt1 = imread('label\_images\1.tif');

gt1 = imresize(gt1,.8);

gt\_image = im2bw(gt1);

figure, imshow(gt1);title('Ground truth image');



% segmented\_image = segmentRetina(input);

segmented\_image1 = segmentRetina(input,32,0.35, 0.7);

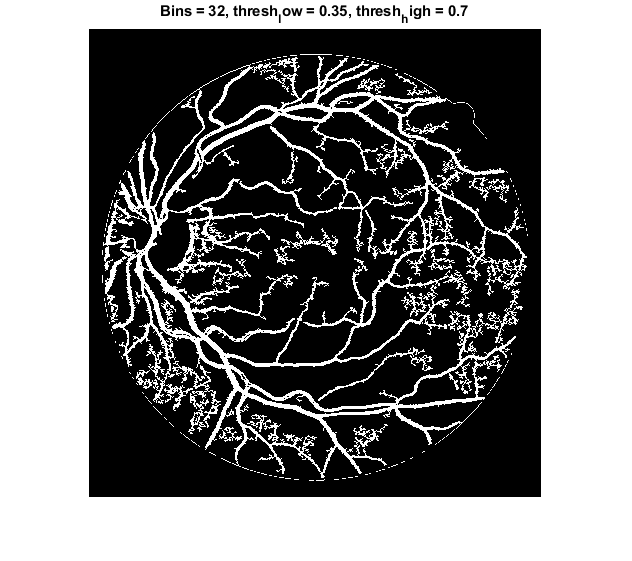
segmented\_image2 = segmentRetina(input,64,0.35, 0.7);

segmented\_image3 = segmentRetina(input,32,0.2, 0.8);

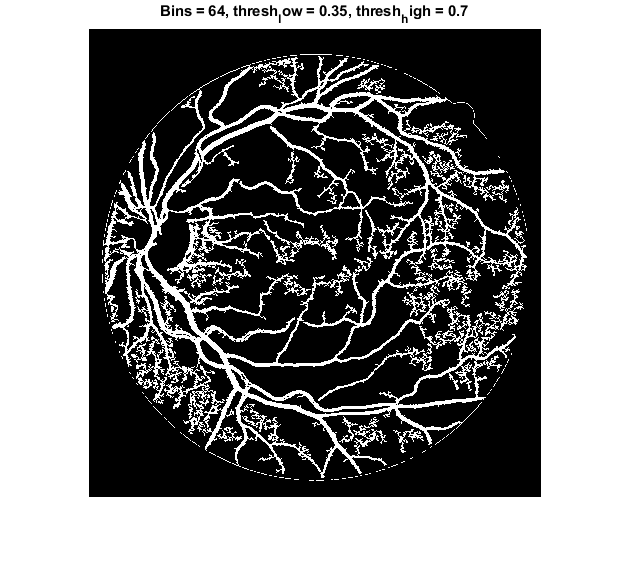
segmented\_image4 = segmentRetina(input,64,0.2, 0.8);

segmented\_image5 = segmentRetina(input,128,0.2, 0.8);

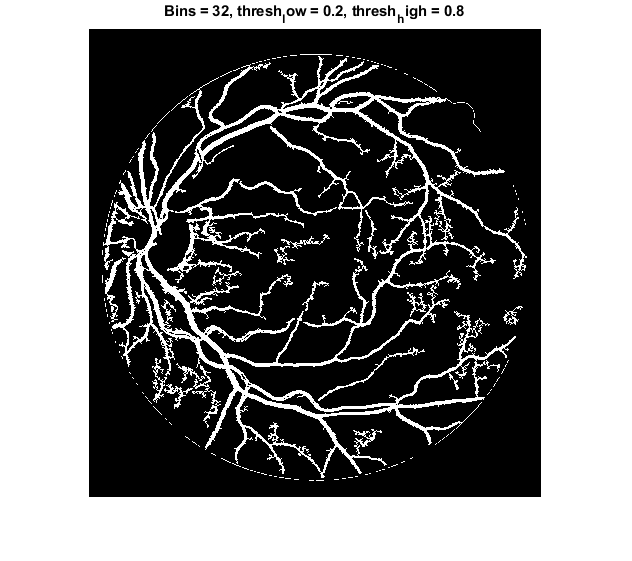
figure,imshow(segmented\_image1);title('Bins = 32, thresh\_low = 0.35, thresh\_high = 0.7');



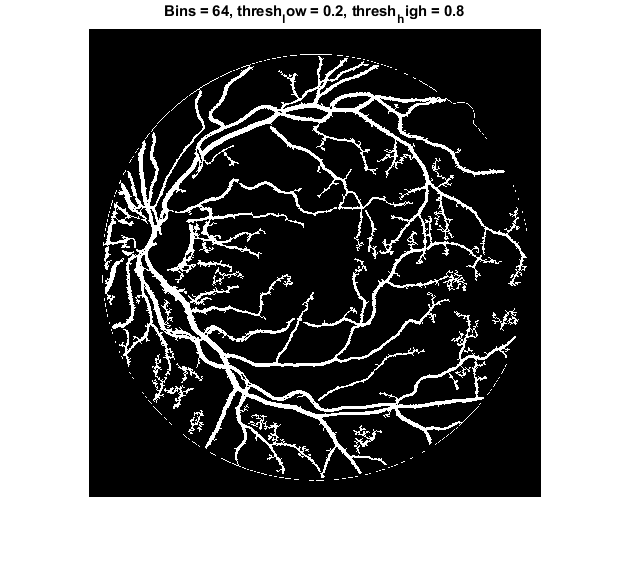
figure,imshow(segmented\_image2);title('Bins = 64, thresh\_low = 0.35, thresh\_high = 0.7');



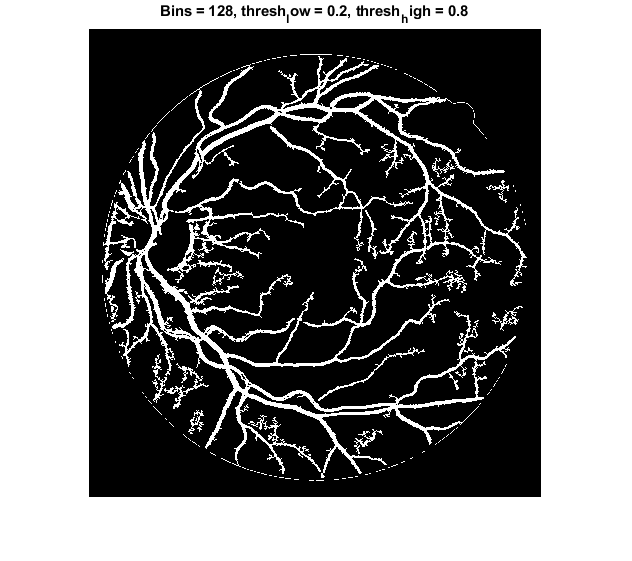
figure,imshow(segmented\_image3);title('Bins = 32, thresh\_low = 0.2, thresh\_high = 0.8');



figure,imshow(segmented\_image4);title('Bins = 64, thresh\_low = 0.2, thresh\_high = 0.8');



figure,imshow(segmented\_image5);title('Bins = 128, thresh\_low = 0.2, thresh\_high = 0.8');



% Calculate evaluation metrics for each segmented image

[P1, N1, T1] = calculatePNT(segmented\_image1, gt\_image);

[P2, N2, T2] = calculatePNT(segmented\_image2, gt\_image);

[P3, N3, T3] = calculatePNT(segmented\_image3, gt\_image);

[P4, N4, T4] = calculatePNT(segmented\_image4, gt\_image);

[P5, N5, T5] = calculatePNT(segmented\_image5, gt\_image);

% Display the evaluation metric values

fprintf('Bins = 32, thresh\_low = 0.35, thresh\_high = 0.7\n');

Bins = 32, thresh\_low = 0.35, thresh\_high = 0.7

fprintf('Value of P is: %.2f\n', P1);

Value of P is: 81.78

fprintf('Value of N is: %.2f\n', N1);

Value of N is: 92.34

fprintf('Value of T is: %.2f\n', T1);

Value of T is: 91.39

fprintf('\nBins = 64, thresh\_low = 0.35, thresh\_high = 0.7:\n');

Bins = 64, thresh\_low = 0.35, thresh\_high = 0.7:

fprintf('Value of P is: %.2f\n', P2);

Value of P is: 83.07

fprintf('Value of N is: %.2f\n', N2);

Value of N is: 90.75

fprintf('Value of T is: %.2f\n', T2);

Value of T is: 90.07

fprintf('\nBins = 32, thresh\_low = 0.2, thresh\_high = 0.8:\n');

Bins = 32, thresh\_low = 0.2, thresh\_high = 0.8:

fprintf('Value of P is: %.2f\n', P3);

Value of P is: 79.68

fprintf('Value of N is: %.2f\n', N3);

Value of N is: 94.91

fprintf('Value of T is: %.2f\n', T3);

Value of T is: 93.55

fprintf('\nBins = 64, thresh\_low = 0.2, thresh\_high = 0.8:\n');

Bins = 64, thresh\_low = 0.2, thresh\_high = 0.8:

fprintf('Value of P is: %.2f\n', P4);

Value of P is: 79.42

fprintf('Value of N is: %.2f\n', N4);

Value of N is: 95.22

fprintf('Value of T is: %.2f\n', T4);

Value of T is: 93.80

fprintf('\nBins = 128, thresh\_low = 0.2, thresh\_high = 0.8:\n');

Bins = 128, thresh\_low = 0.2, thresh\_high = 0.8:

fprintf('Value of P is: %.2f\n', P5);

Value of P is: 79.38

fprintf('Value of N is: %.2f\n', N5);

Value of N is: 95.15

fprintf('Value of T is: %.2f\n', T5);

Value of T is: 93.74

