For the machine learning project, I started off trying to use the deep learning libraries but I kept getting an error about how I didn’t have tensorflow, even though I definitely did. Then I tried to adapt the neural network that I made for the previous assignment but translating from matlab to python was too hard, especially with all of the matrices. Finally, I gave up and decided to use the random forest and added the following features.

As Greg suggested, I added the standard deviation of the image, which increased the f1 score by about 2 points. Then I added the hessian matrix, which is a matrix of all of the second order derivatives of the Gaussian kernel. This raised the score by .04 points to 0.82. Then, I added a histogram of oriented gradients which bumped it up another .01.