1) I started the assignment at 11:00 AM, and I estimate it will take me 4 hours to complete.

2)

a) If a tie is needed to be broken, and public safety needed to be maximized, the threshold with the lowest number of misses would need to be picked. Limiting the number of missed would ensure that the maximum amount of people intending to speed recklessly would be pulled over.

b) If a tie needed to be broken and maximizing traffic flow was the number one priority, the threshold with the largest number of true positives would need to be maximized. The true positives are only the people who are driving with reckless intent, so they should be pulled over.

c) The decision will be if the person was reckless or not. The value below the threshold will be less than or equal to the threshold.

e) I calculated the 57.5 - 58.0 threshold to have the lowest miscalculation rate of 0.0625. Cars that get pulled over are going greater than 55.5 mph.

f) The 57.5-58 threshold will let 5 people through.

g) The 57.5-58 threshold will pull over 3 non-reckless drivers

h) In homework 2, the Otsu method gave the bin 52-54 . The bin selected in this method was much lower, but the two assignments used different bin sizes. When the Otsu's method was rerun with a bin size of .5, the threshold went to 53.5-54.0; still within the limits of the first run.

3) Plotted using matplotlib. (http://matplotlib.org/)

Misclassification Rate by Threshold
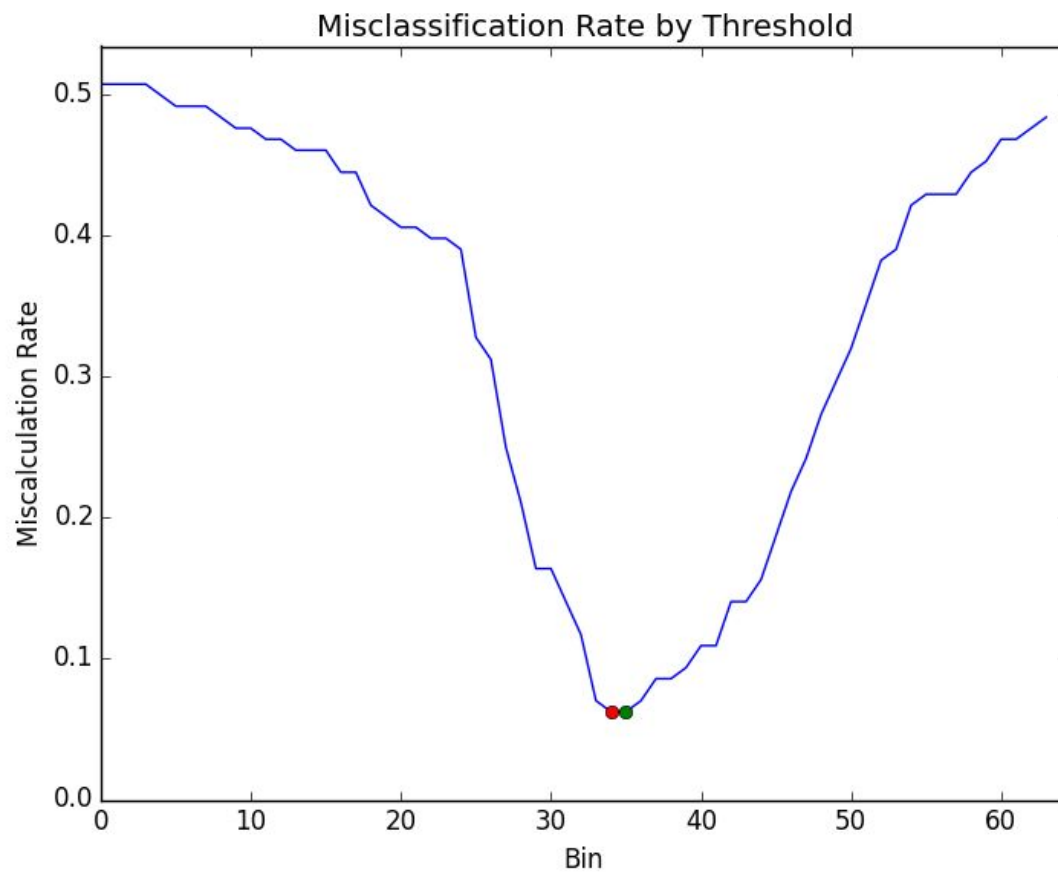
4) Finish the homework 3 in about 6 hours. the original estimate vs the actual is 6/4 = 1.5.

5) I worked alone.

6) ROC curve plotted by matplotlib