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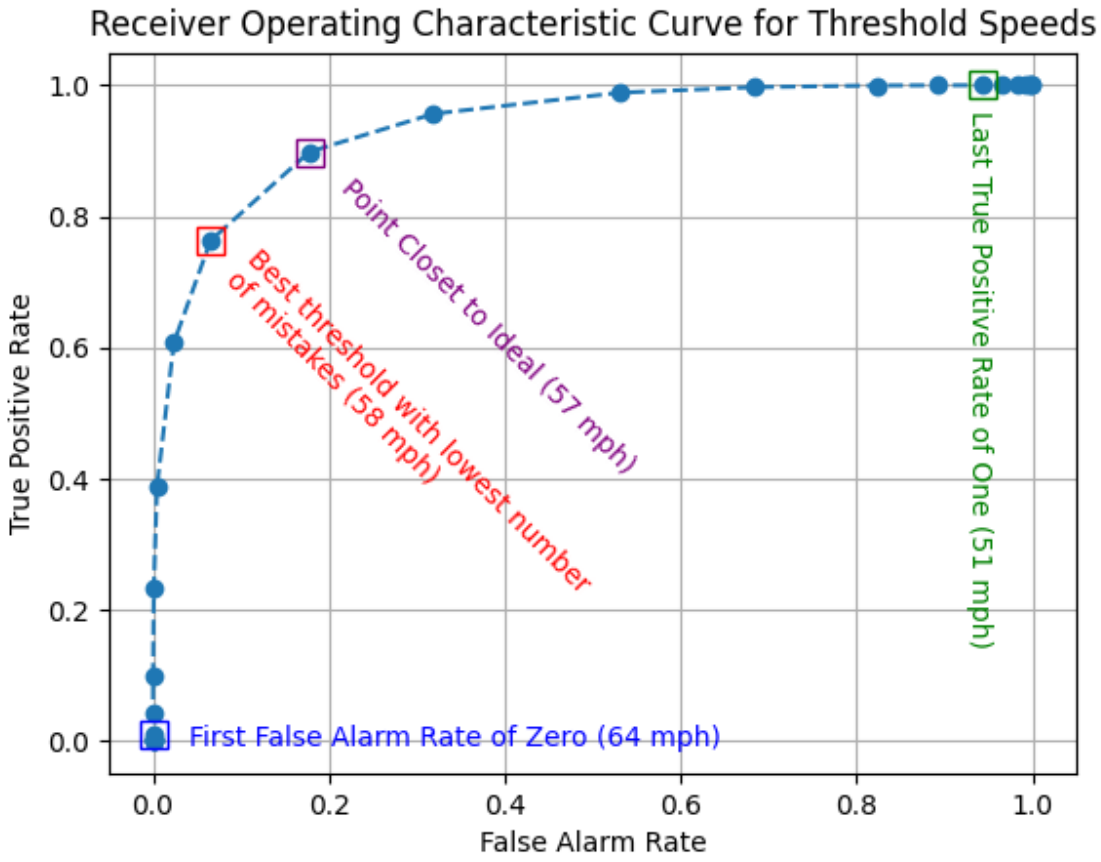
Homework: HW03
Class: CSCI-420 Section 02



HW03 Conclusion

I learned a number of things by completing this homework. First and foremost, I learned about ROC curves. When I started this homework, I realized that I had forgotten what "ROC" stands for, but I then learned that it stands for "Receiver Operating Characteristic". I learned about how to interpret ROC curves, and how to use them to get an idea of what the best threshold is: the point nearest the top left. However, I also learned that the threshold with the lowest overall rate of mistakes may not be the same point as the point nearest the top left of the ROC curve.

Secondly, this homework helped to solidify the idea of the confusion matrix into my brain. I understood the confusion matrix prior to completing this homework, but I struggle to remember what each quadrant is, the formula for calculating true positive rate, and the formula for calculating true negative rate. Continuing to work with the confusion matrix helps embed into my brain how the confusion matrix works and what the formulas are. In doing this, I discovered an easy way to remember the quadrants of

the matrix as TP, FP, FN, and TN, which will help me using confusion matrices in the future.

Lastly, this homework taught me more about the data-related libraries available for use in Python. Specifically, I learned about plotting pieces of text in matplotlib. In order to match the example provided for the homework, I had to be able to place text within the graph, which proved easier said than done. I had to do lots of research online to figure out how to do this, but eventually I came across the “plt.text()” function. Through lots of trial and error, I was able to adjust the x and y coordinates of my text to get it just right. I think I generated at least 40 plots trying to adjust the coordinates appropriately, but the result is something that I am very happy with. In addition to plotting text, I had to learn to use the “plt.plot()” function in a different manor to plot individual points. I used square markers and colors that matched the text to help indicate which point goes along with each text box.

Overall, this homework taught me about ROC curves, helped solidify my knowledge of confusion matrices, and gave me insight into how to better use the libraries available for data analysis and interpretation in Python.