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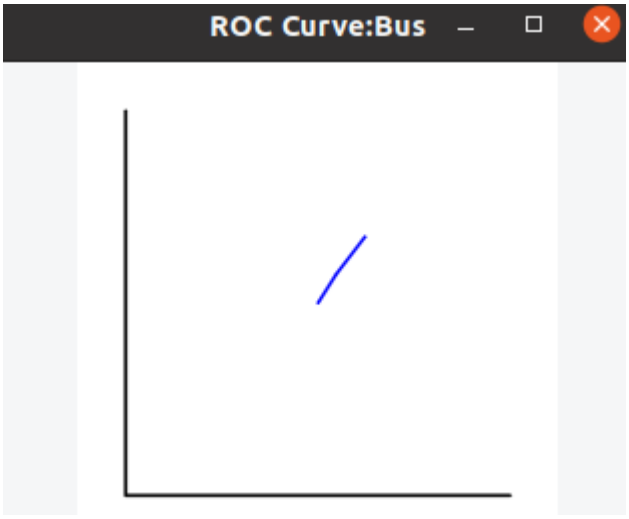
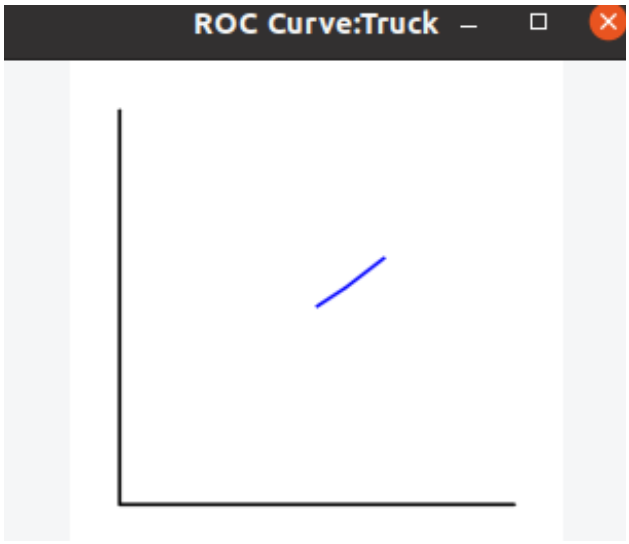
HW5

In this project, I learned representation, learning and recognition. In the first part of this project, I choose 2 related objects:Truck and Bus. I extracted BOW representation for each object and stored at variables named “truck_features” and “bus_features”.
At the second part of this project, SVM apı is used to learn the object.
At final part, learned model is used on dataset. 3 different threshold is used for both truck and bus. In the table, the values for recall and precision are shown for each class (bus and truck) at three different threshold values (0.5, 0.75, and 0.9).

Threshold	Bus Recall	Bus Precision	Truck Recall	Truck Precision
0.500000	0.623762	0.272727	0.672000	0.727273
0.750000	0.549505	0.278894	0.574000	0.721106
0.900000	0.501650	0.288425	0.500000	0.711575

The ROC curves are plotted by using opencv. ROC curves can be seen below:





Bus model performed better since its area is bigger.
This can be explained by quality and quantity of training data, the complexity of the model architecture, the hyperparameters used during training, and the characteristics of the object class itself.