04/15/19 Weekly Report

Hunter Kippen

1 What I worked on last week

- I updated my feature extraction code to allow for the training of an AR model on the fingerprint sequence $\hat{s}$.
- I then trained an AR model for every video in my AsusZenFone3 dataset and trained an svm to classify the videos. The results are shown in Fig. 1 below:

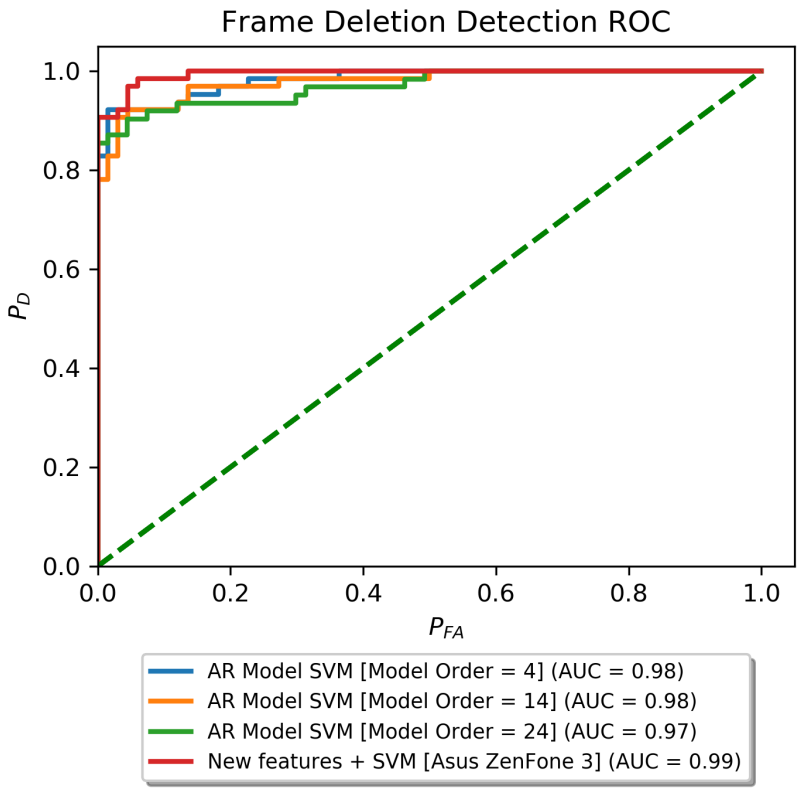

Figure 1: Graph of SVM ROC Curves for SVMs using traditional features versus an AR model for an ASUS Zen Fone 3

2 Problems I encountered

- The AR model features don't seem to produce a better classifier than the energy of $\hat{s}$, mean, variance, etc. features. As well, an increase in the model order of the AR model produces worse classification results. I would imagine this is likely due to over fitting on the AR model side of things. The maximum length of a video in any of the tests is around 200 frames long, and is not quite an order of magnitude larger than the number of model parameters. Though

I am likely misinterpreting this. I am having a hard time understanding how these models are supposed to work.

3 What I plan to do this week

- I plan on helping move the servers on Tuesday to the ECE server room.
- I plan to continue testing the AR model and regular models on more data, as perhaps the AR model has less variance between phone models.
- I plan to create more data to use for more complex experiments.
- I plan to start writing the (throwaway) introduction to my thesis so that I can ground my future writings and set myself up for finishing. My completed draft is due by the end of week 8.