Optimizing ROC Curves with a Sort-Based Surrogate Loss for Binary Classification and Changepoint Detection

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Problem Setting and Related Work

Results

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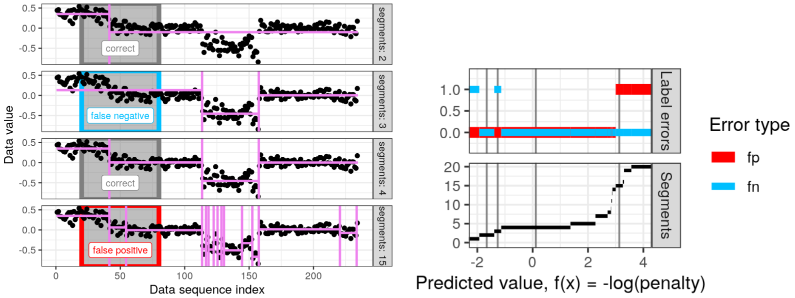
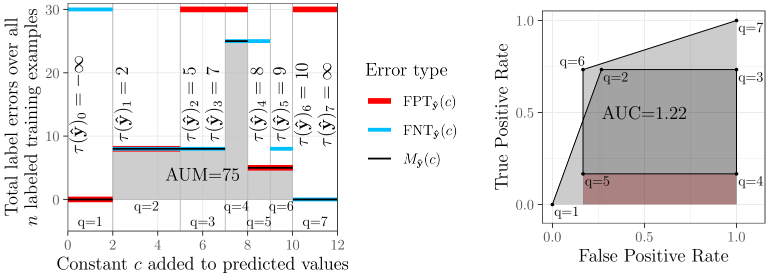
Results

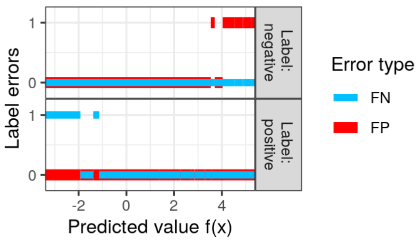
Real data example with non-monotonic label error

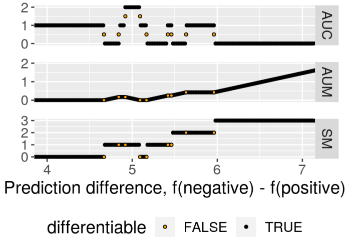


Looping ROC curve, simple synthetic example

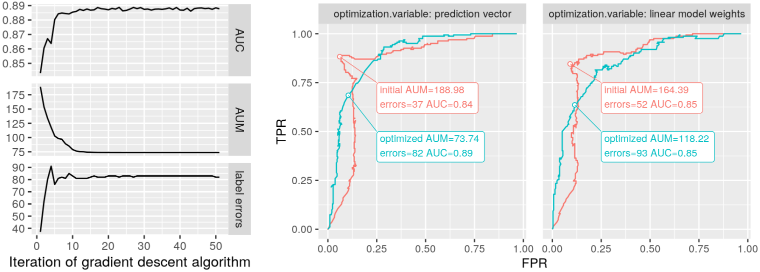


Real data example with AUC greater than one

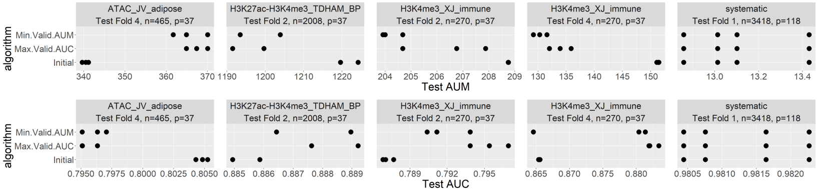




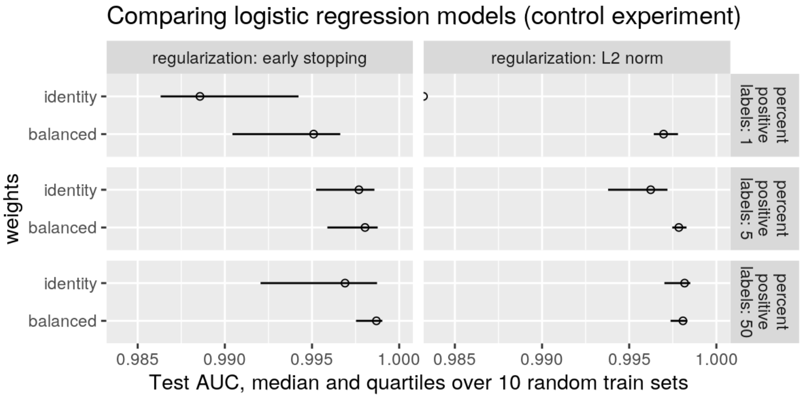
Train set ROC curves for a real changepoint problem



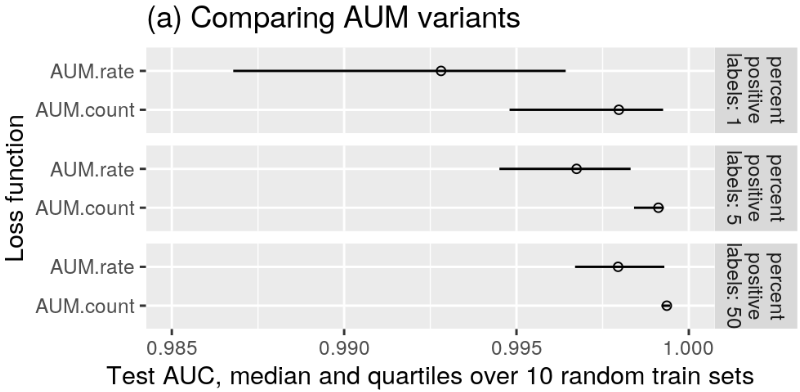
Learning algorithm results in better test AUC/AUM for changepoint problems



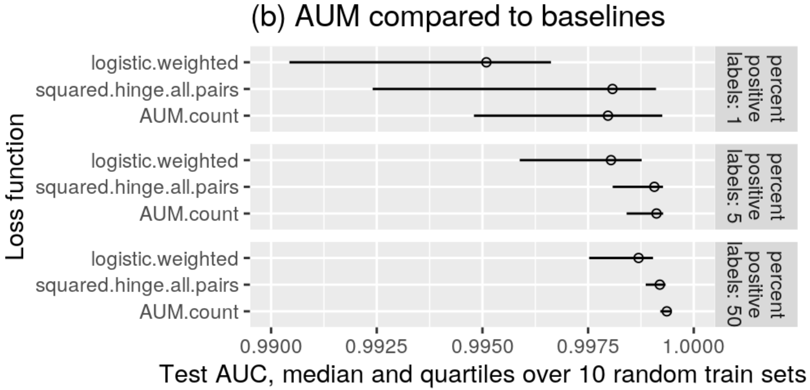
Standard logistic loss fails for highly imbalanced labels



Error rate loss is not as useful as error count loss



Learning algorithm competitive for unbalanced binary classification



Comparable computation time to other loss functions