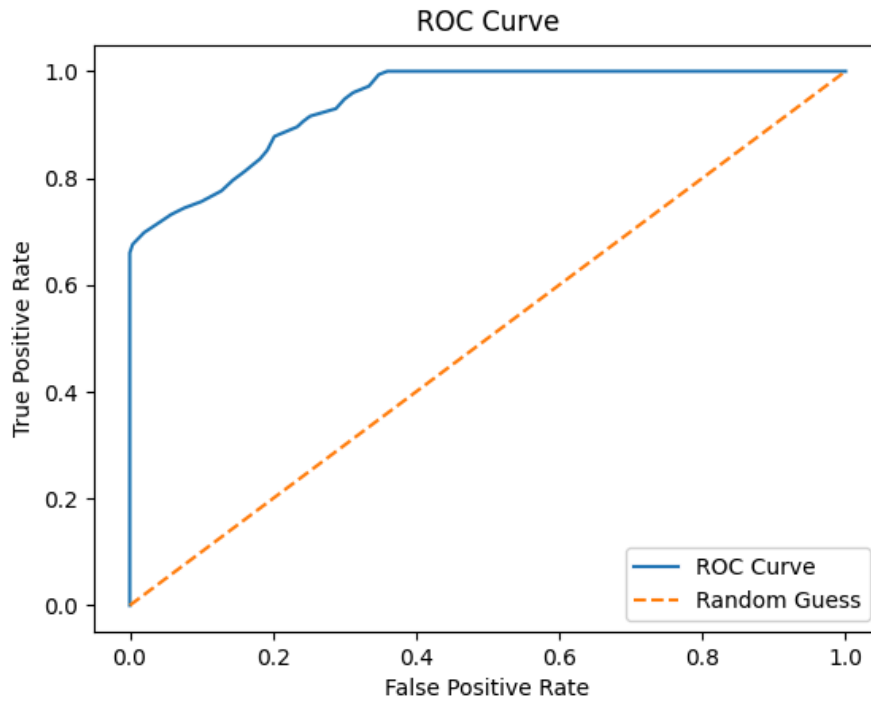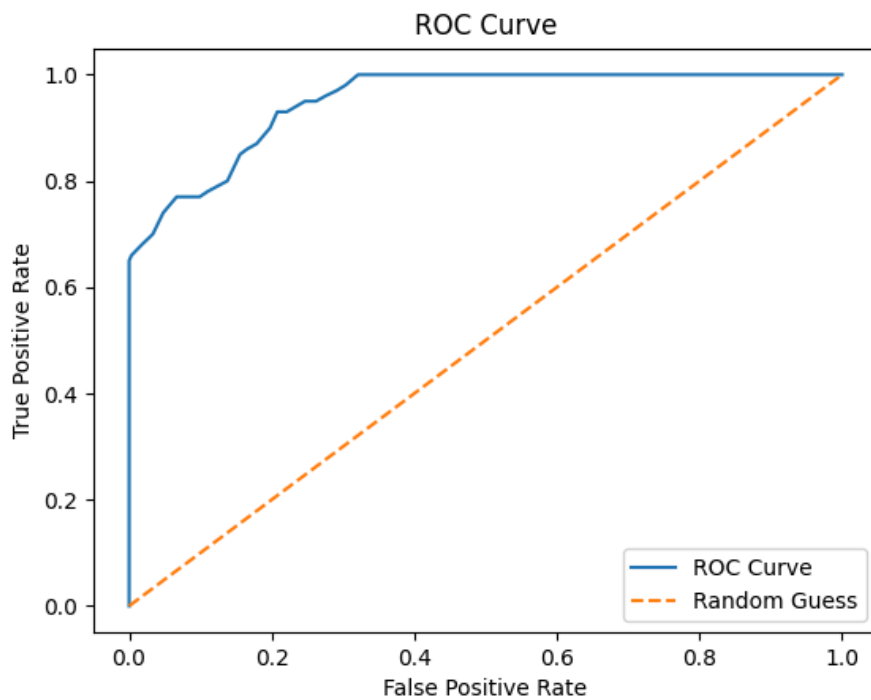# 1. Empirical Analysis

Balanced Dataset (50% True, 50% False):

Imbalanced Dataset (10% True, 90% False):

2. Conceptual Explanation
In your own words, answer whether ROC curves can handle imbalanced datasets, and explain why.

As you can see from the above ROC plots, even with heavily imbalanced data (10%-90%), the ROC plots both have nearly identical shapes. This empirically shows that yes, ROC curves can handle imbalanced datasets. This makes sense, because ROC curves depend on true positive rate and false positive rate, which are normalized by the number of positives and negatives. This normalization means that ROC plots can entirely ignore class imbalance.