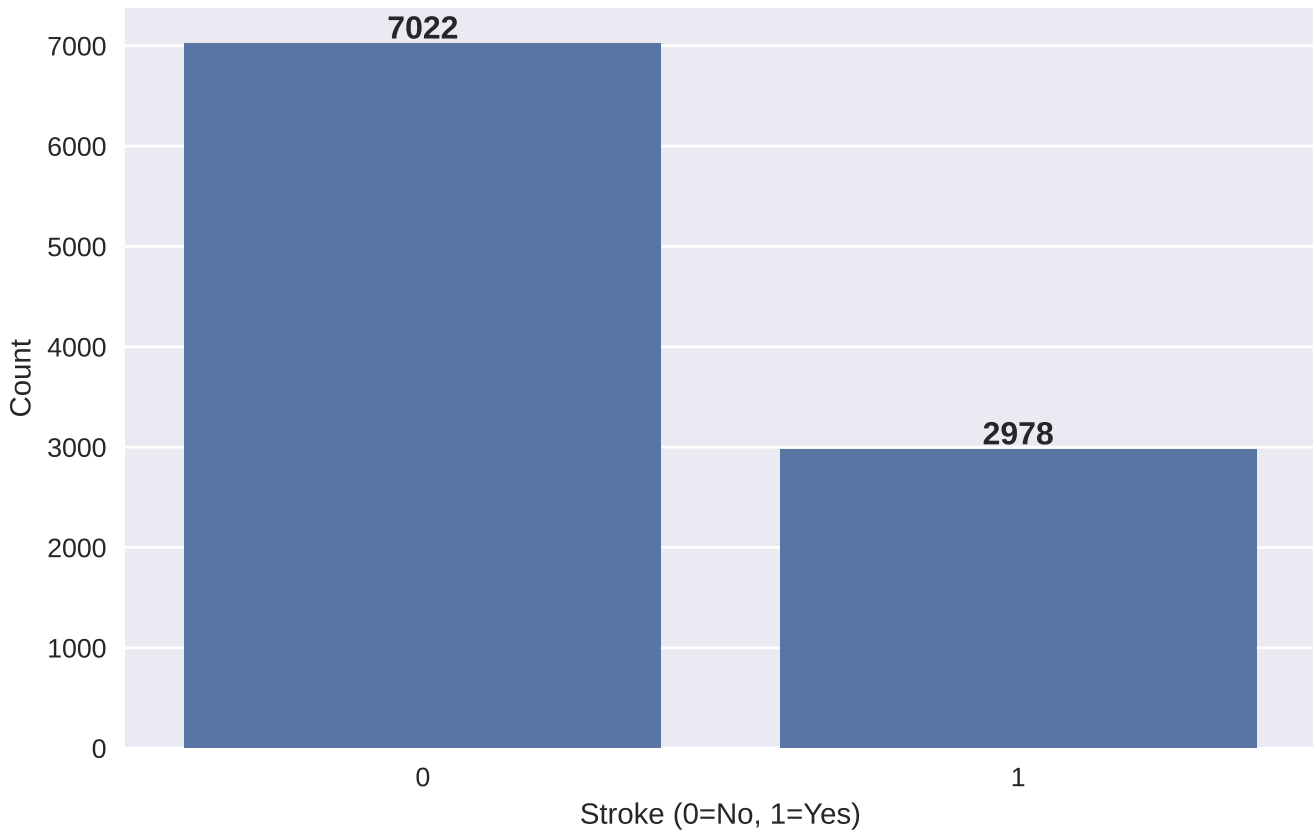
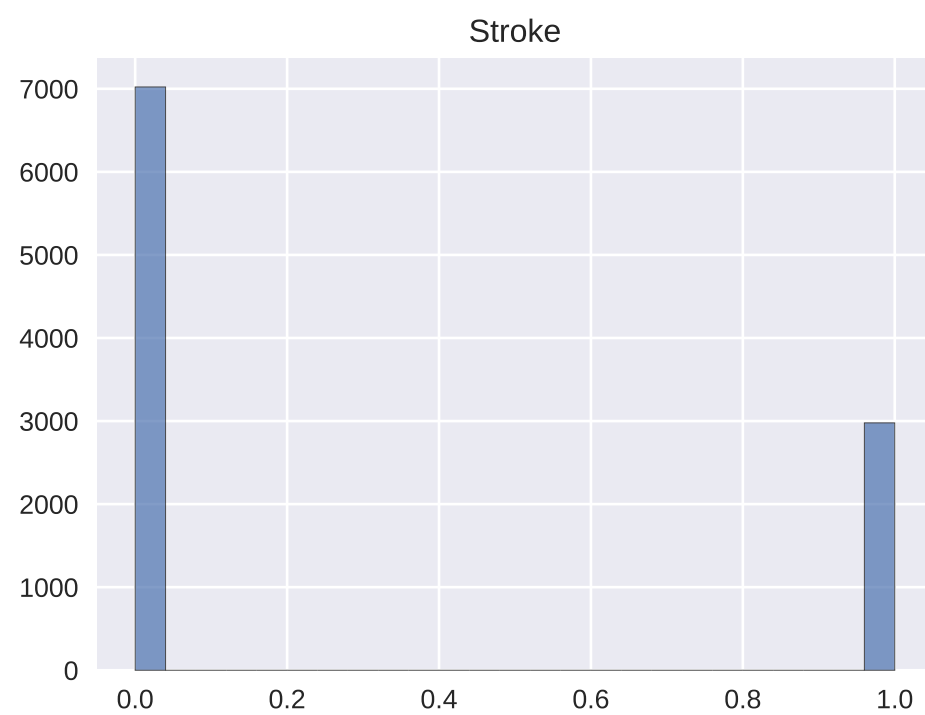
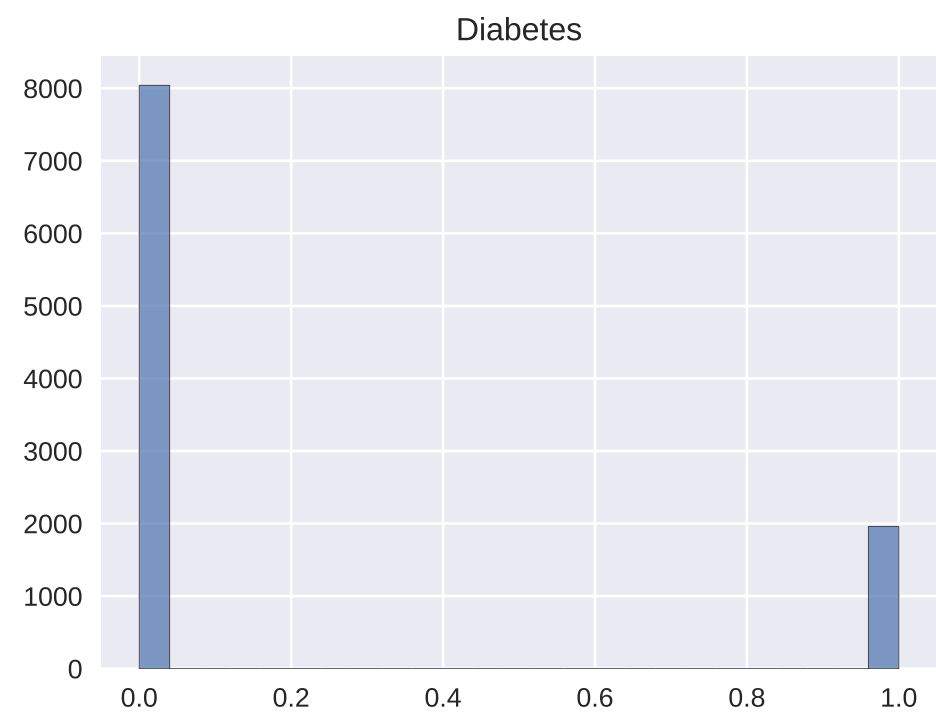
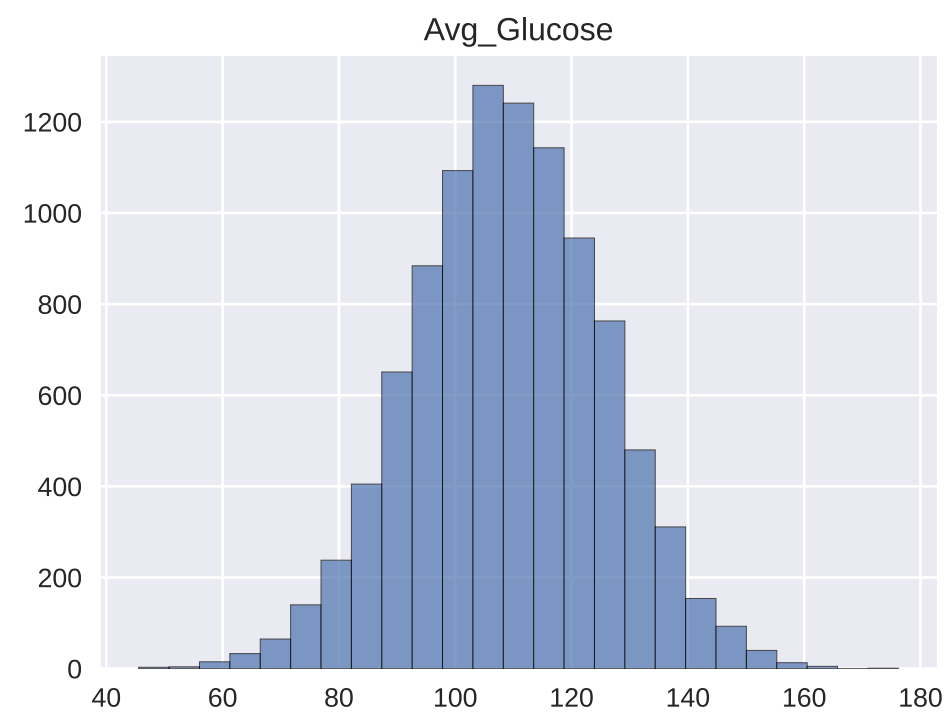
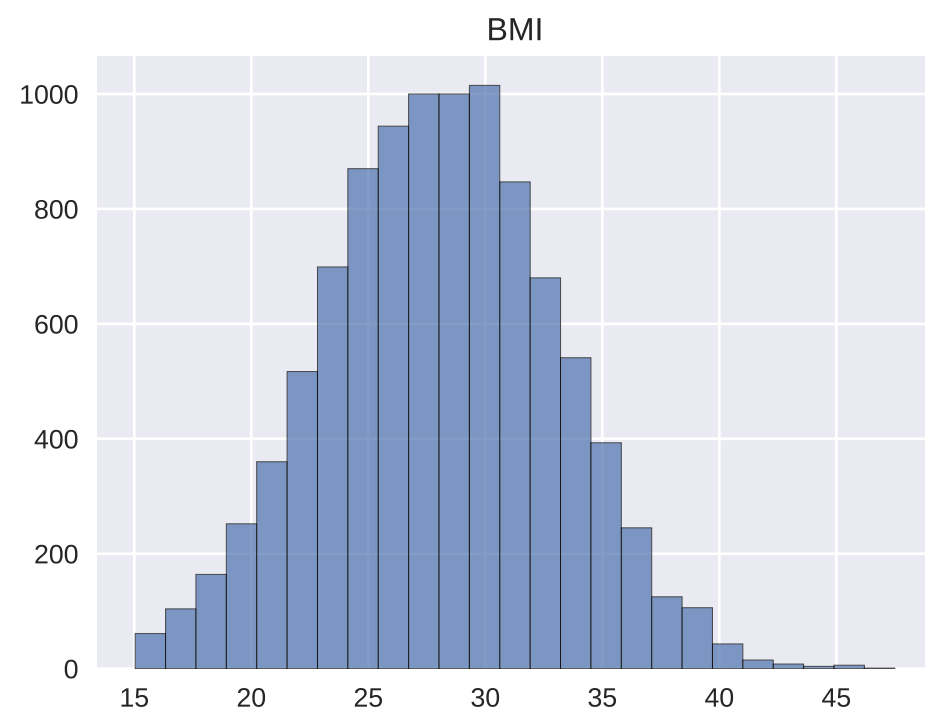
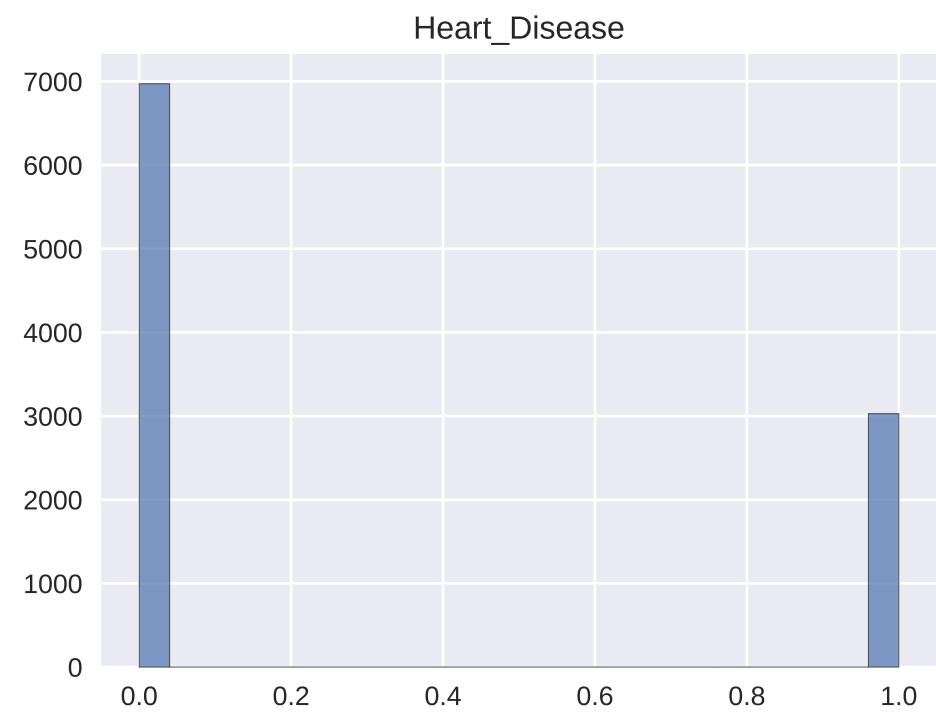
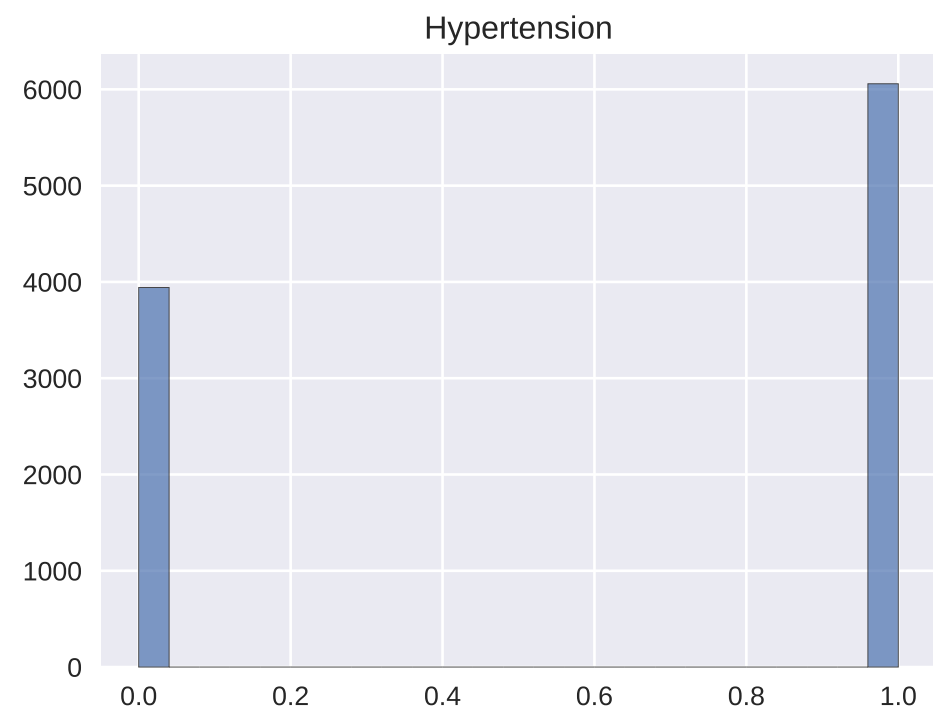
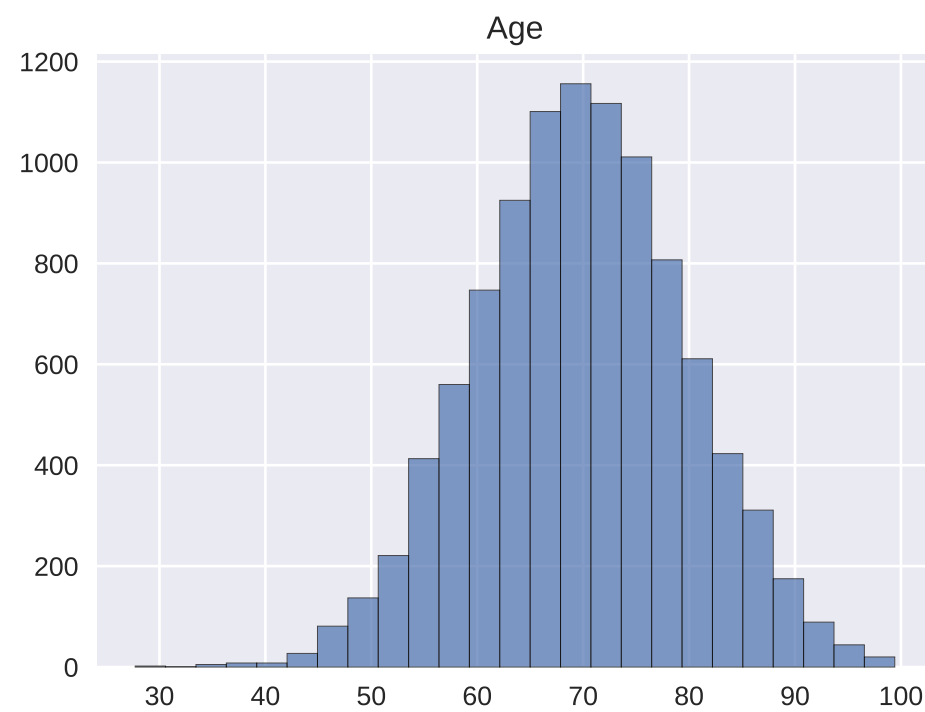


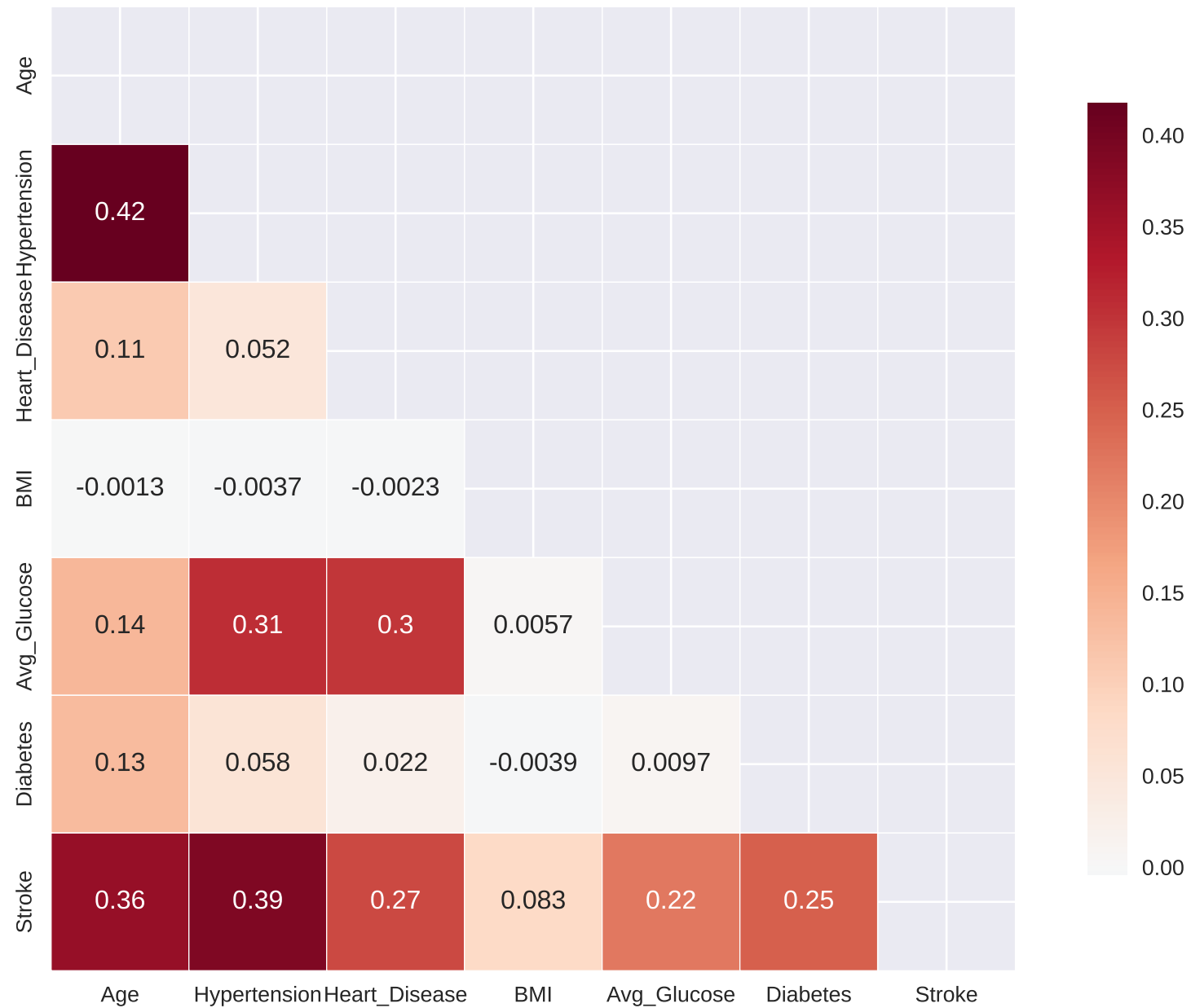
**Class Balance (Stroke vs No Stroke)**



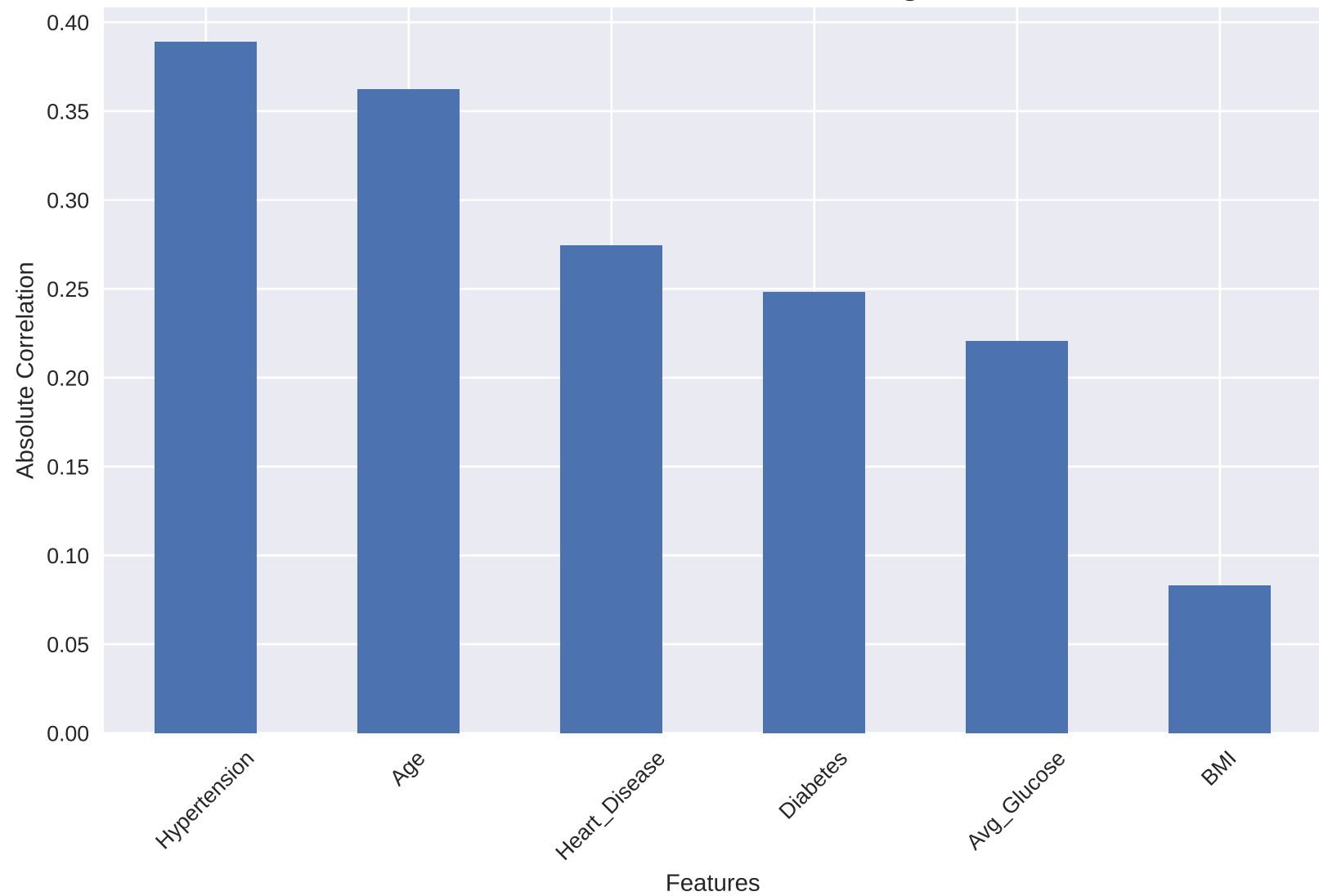
## Feature Distributions



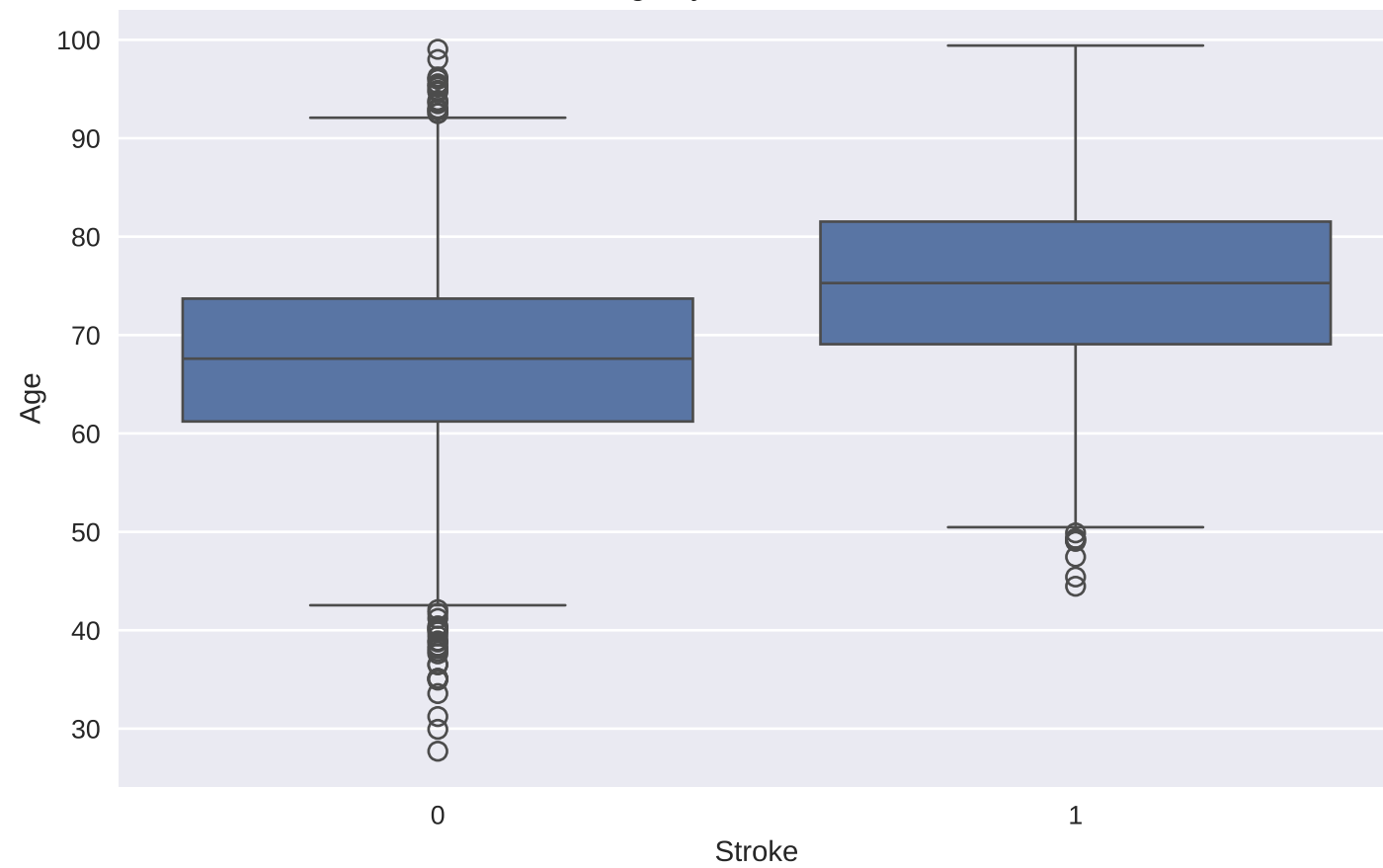
Correlation Heatmap



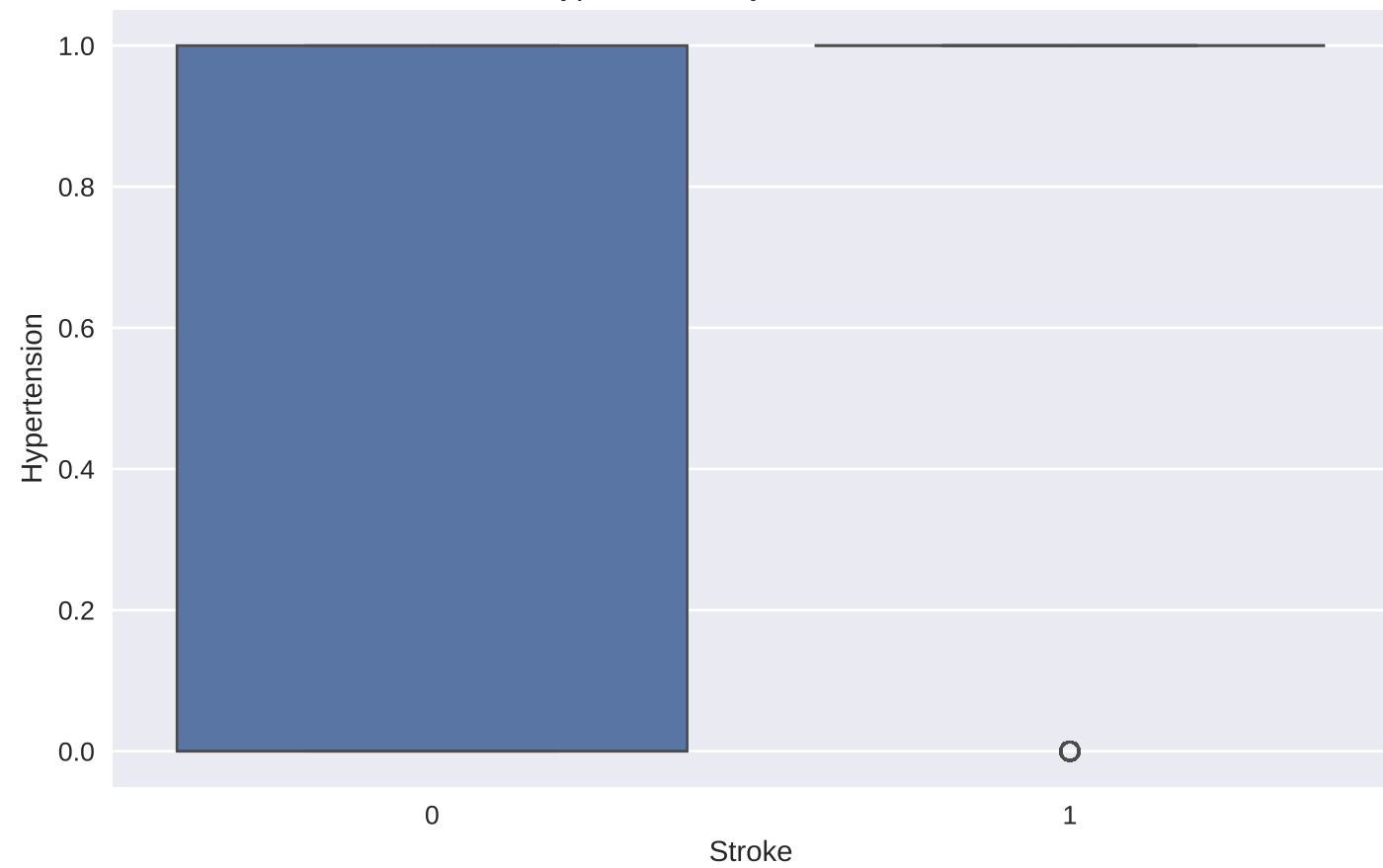
Feature Correlations with Target



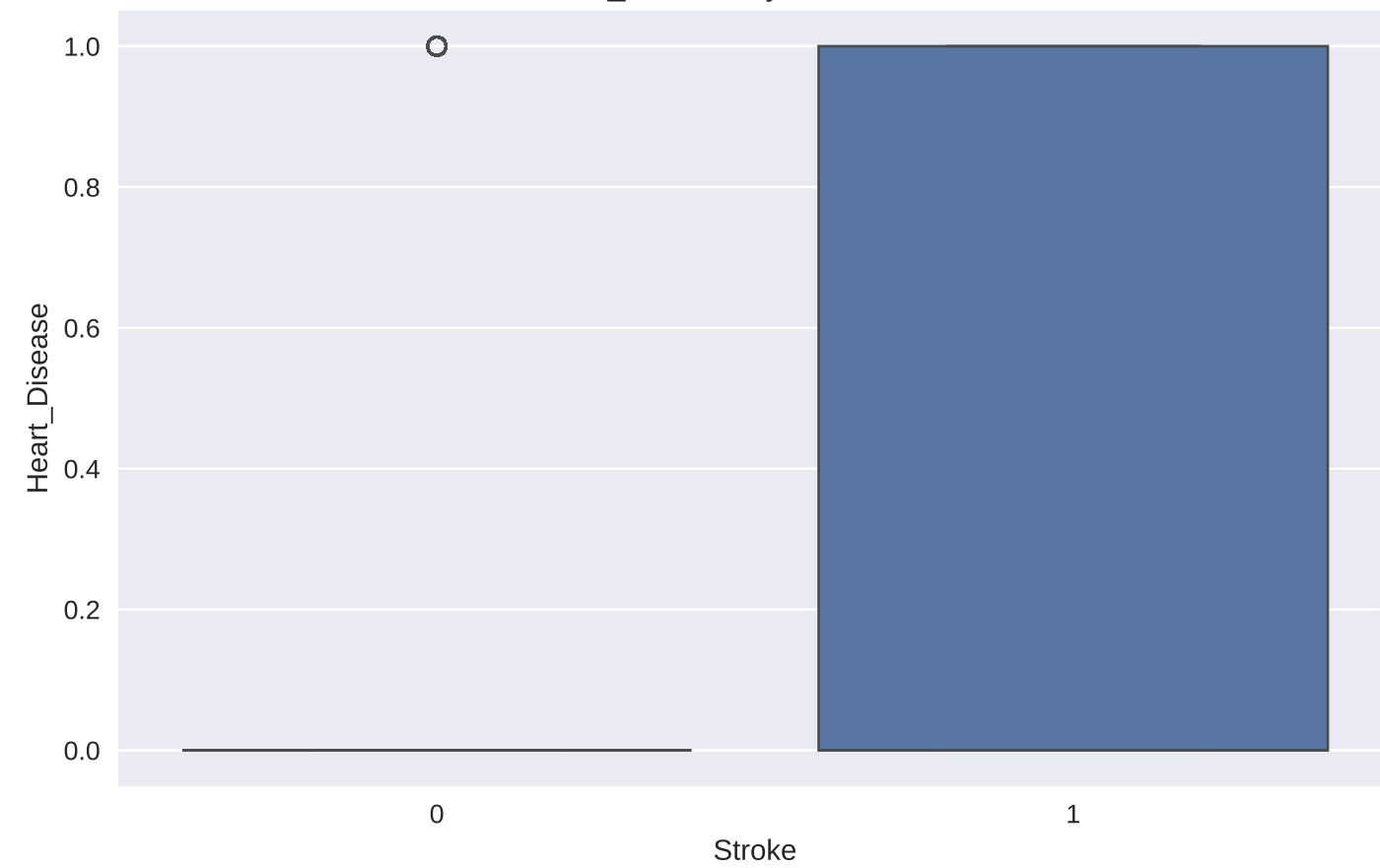
Age by Stroke Status



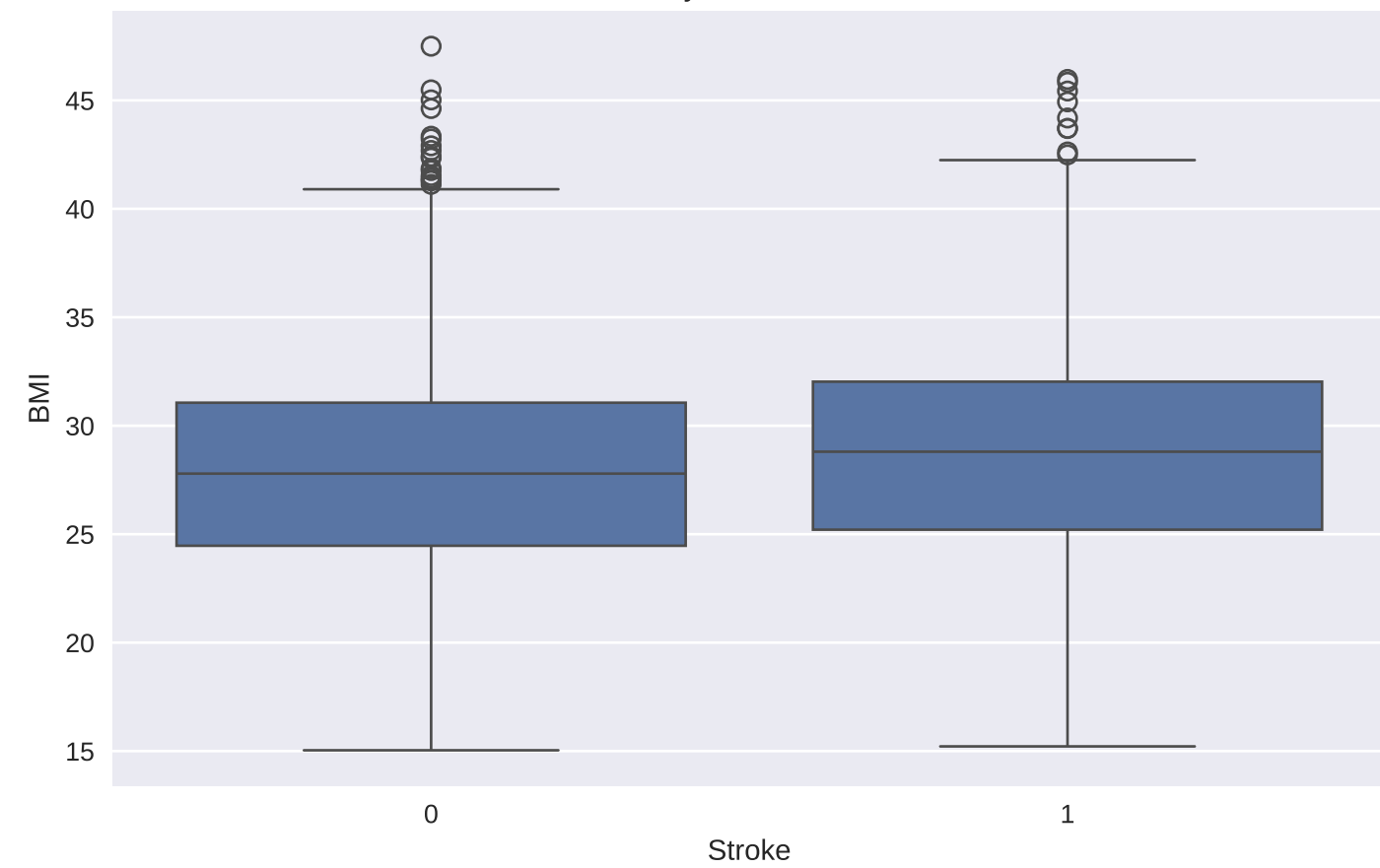
Hypertension by Stroke Status



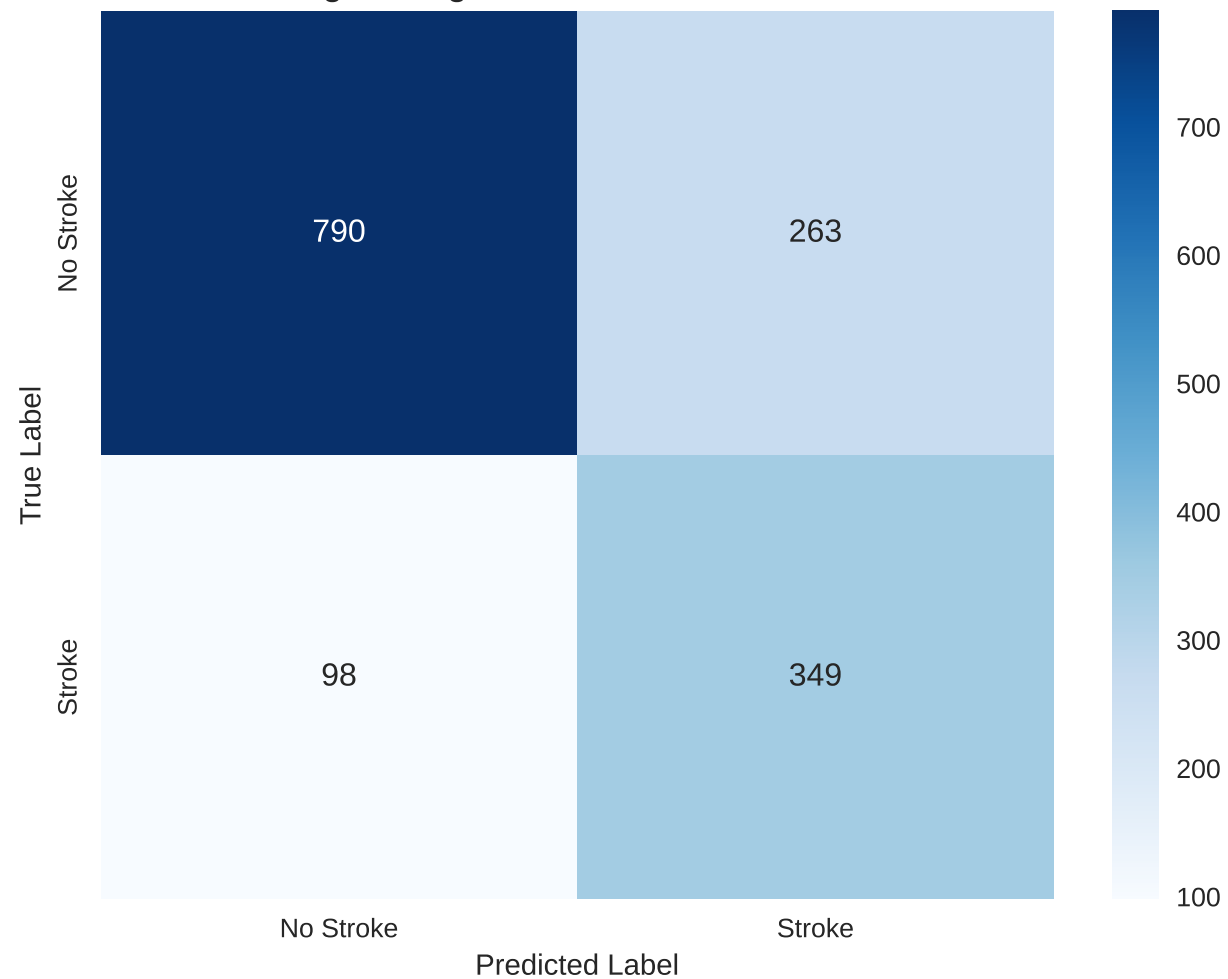
Heart\_Disease by Stroke Status



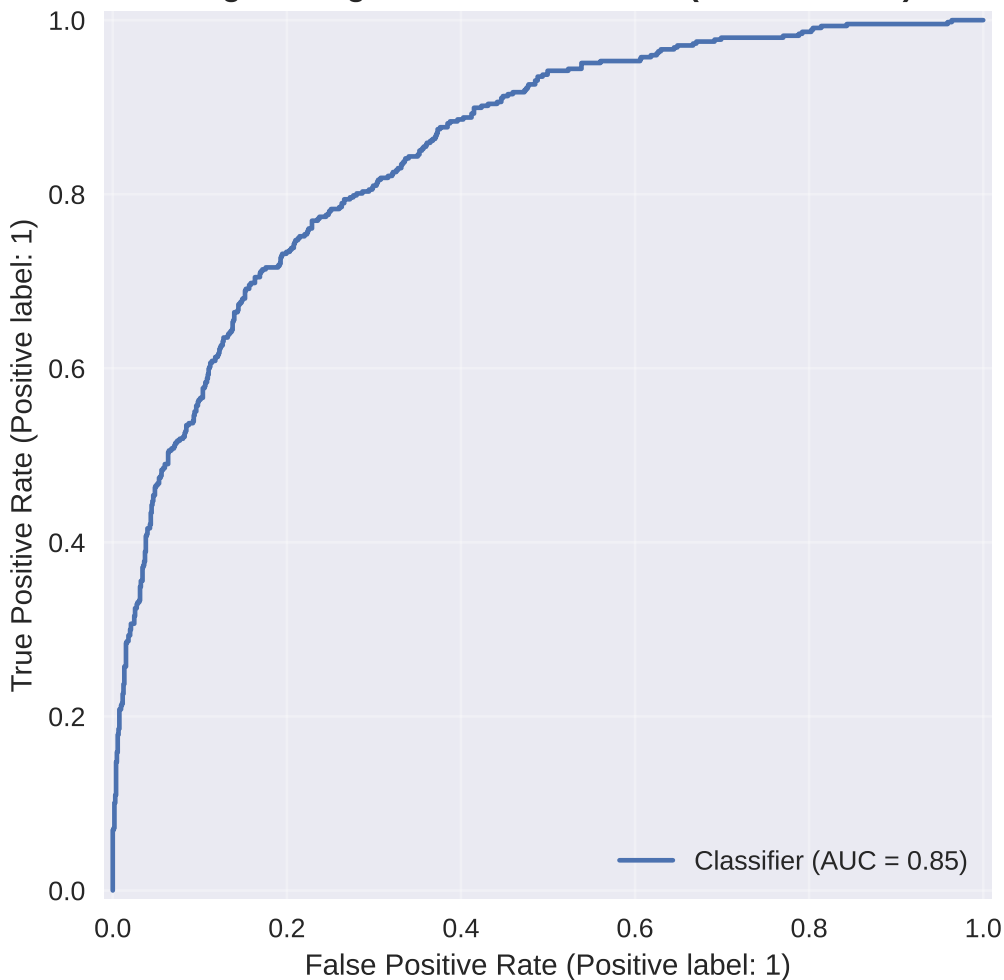
BMI by Stroke Status



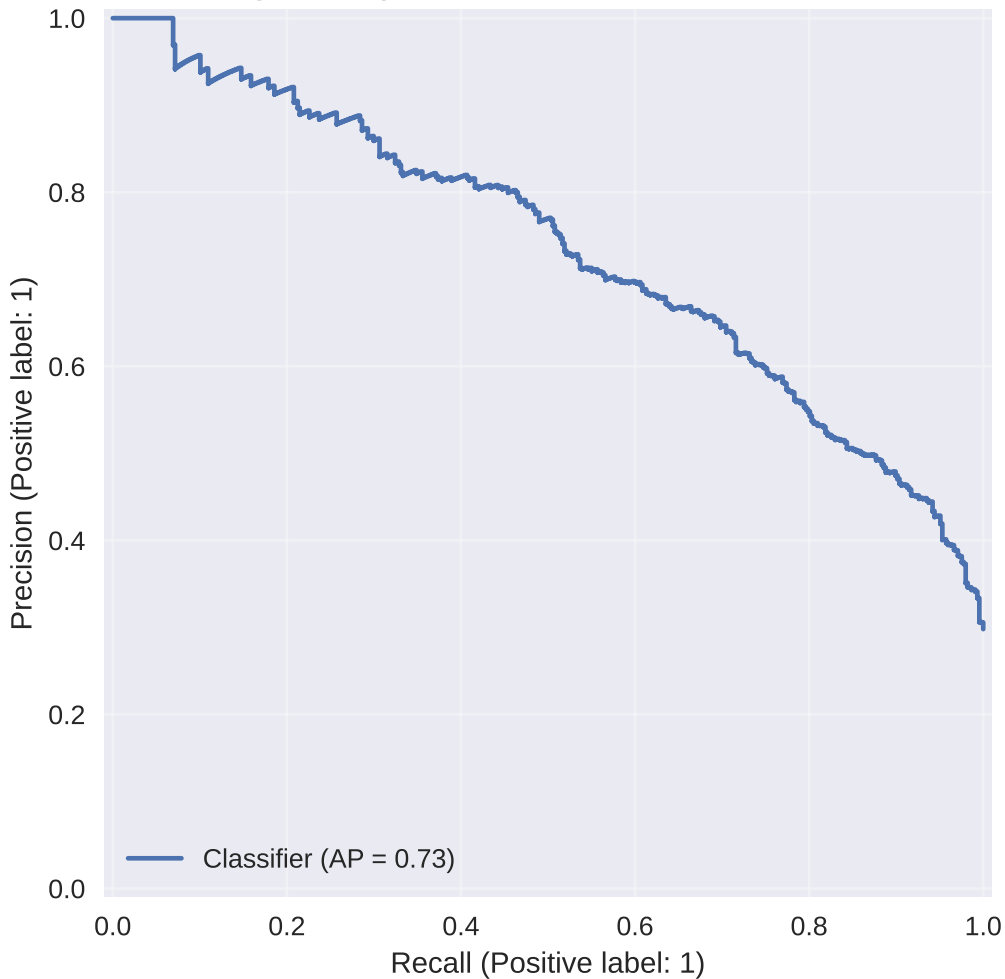
LogisticRegression - Confusion Matrix



**LogisticRegression - ROC Curve (AUC = 0.8504)**

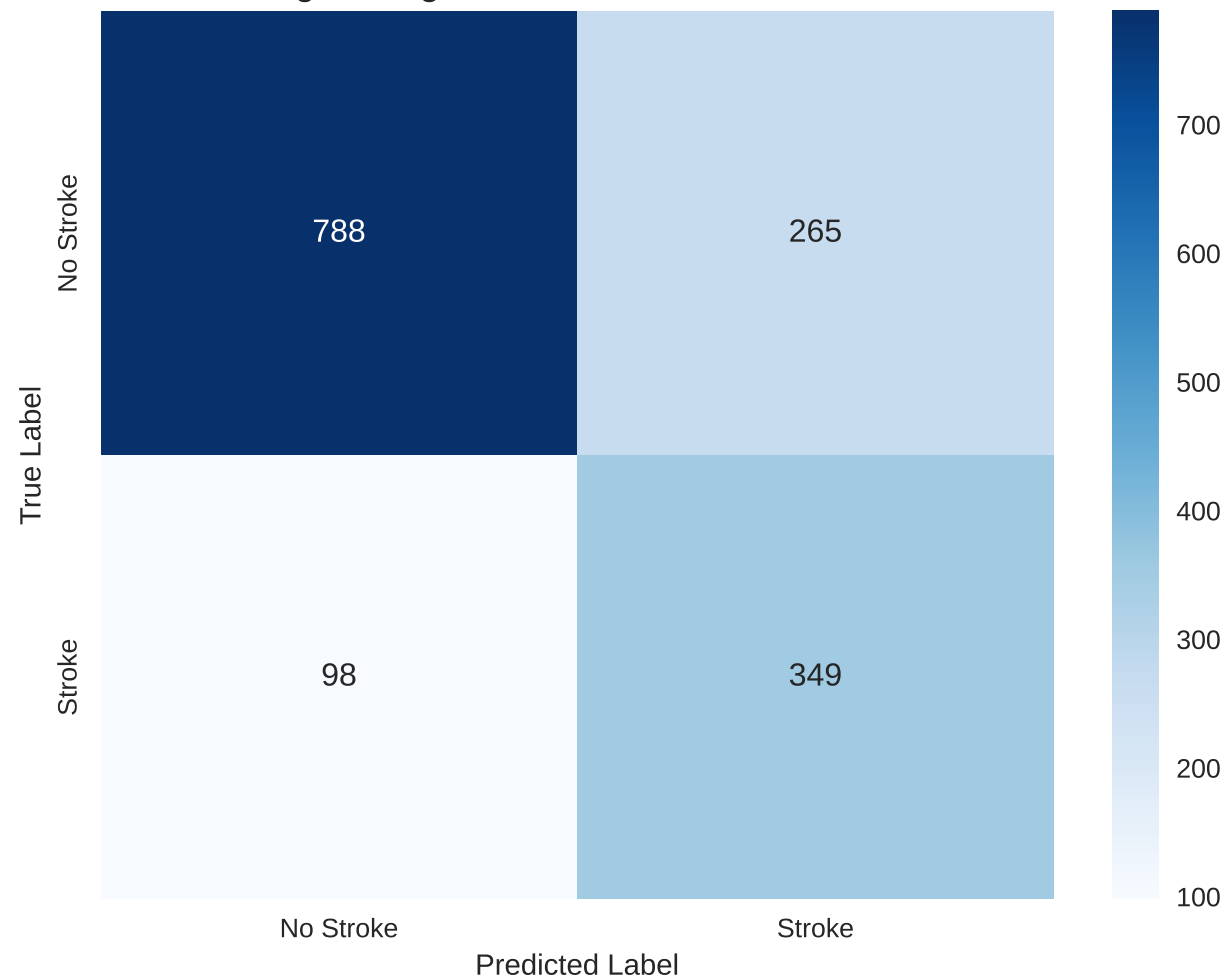


# LogisticRegression - Precision-Recall Curve

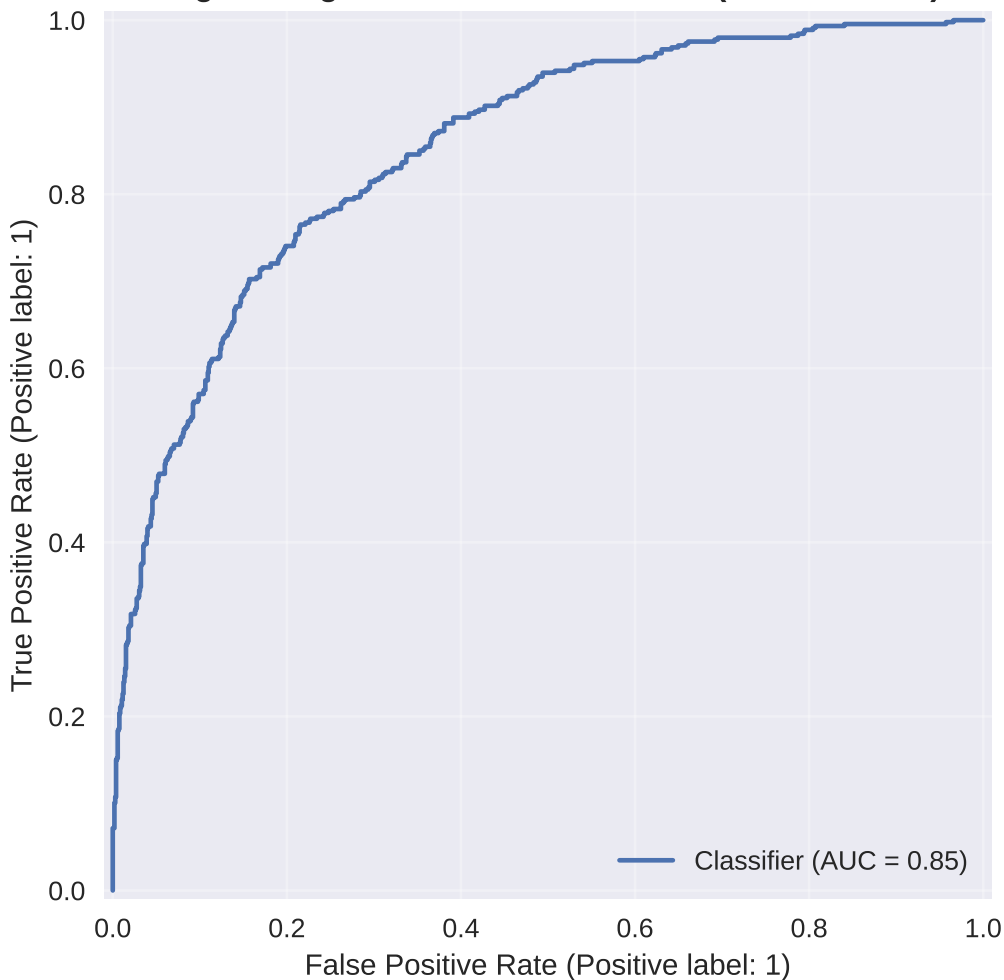




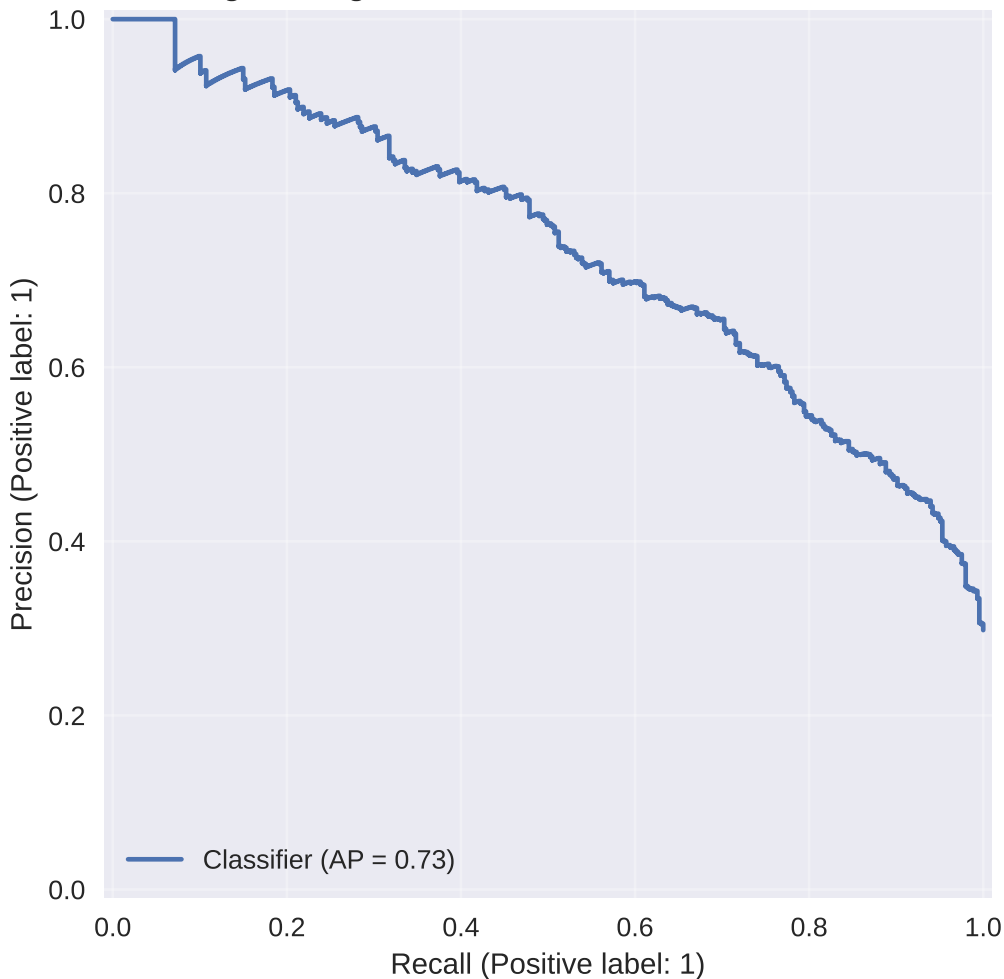
LogisticRegression\_L1 - Confusion Matrix



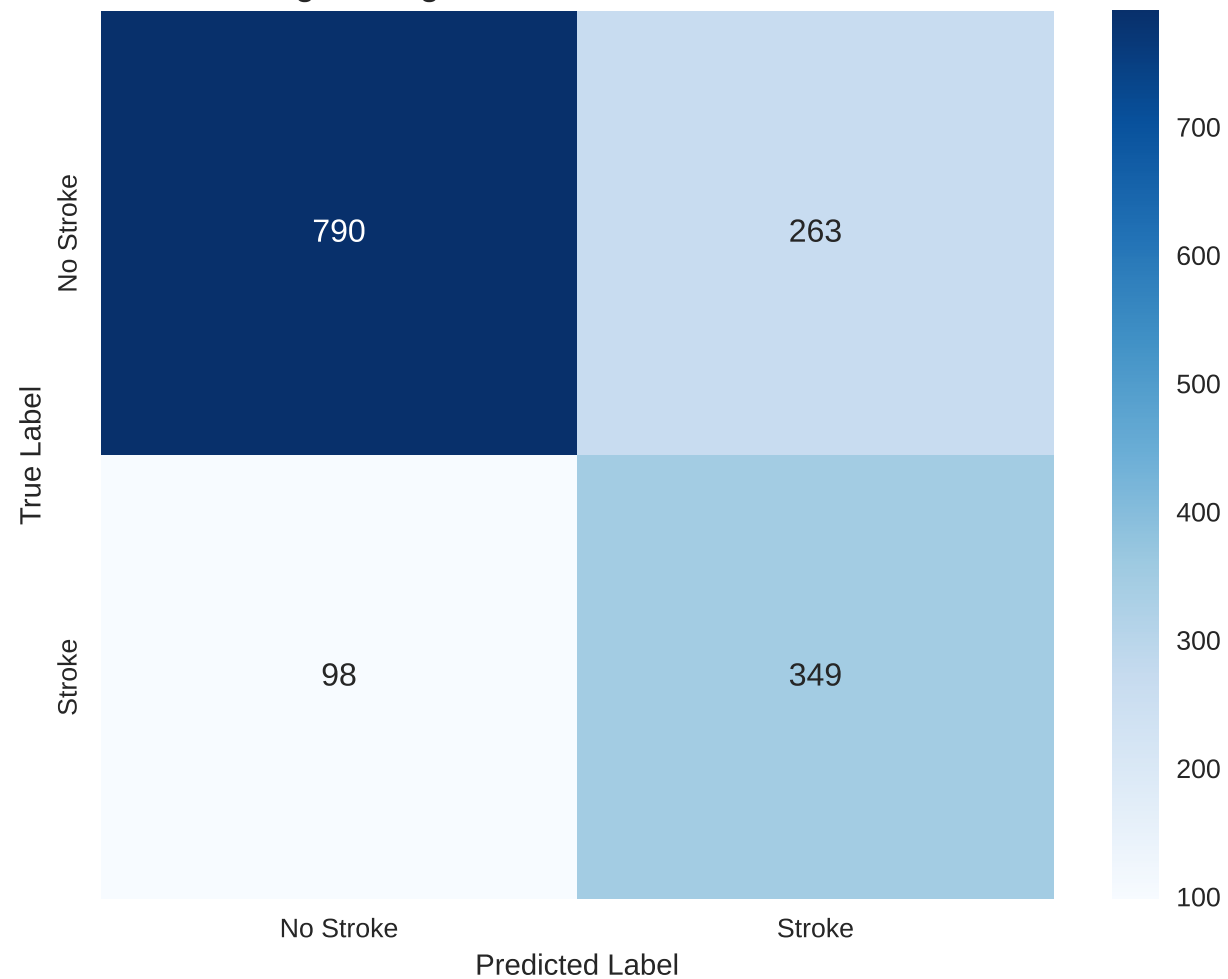
**LogisticRegression\_L1 - ROC Curve (AUC = 0.8513)**



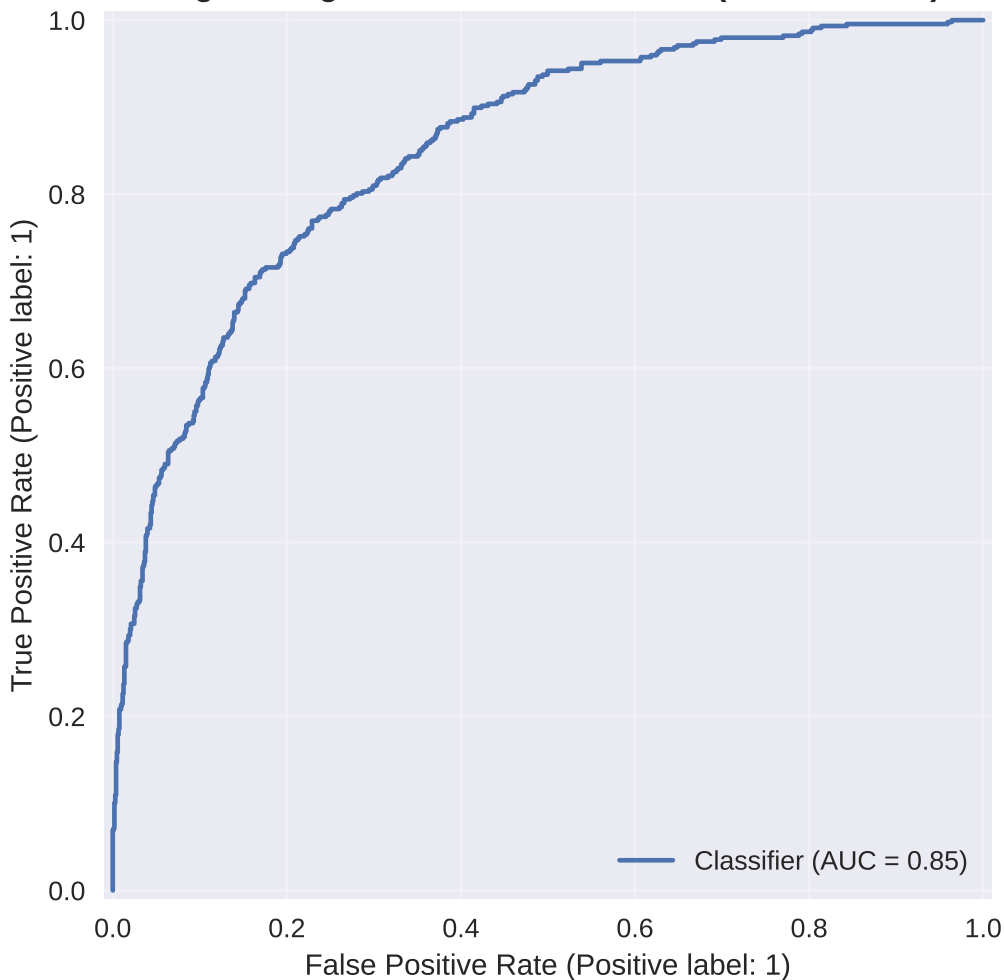
**LogisticRegression\_L1 - Precision-Recall Curve**



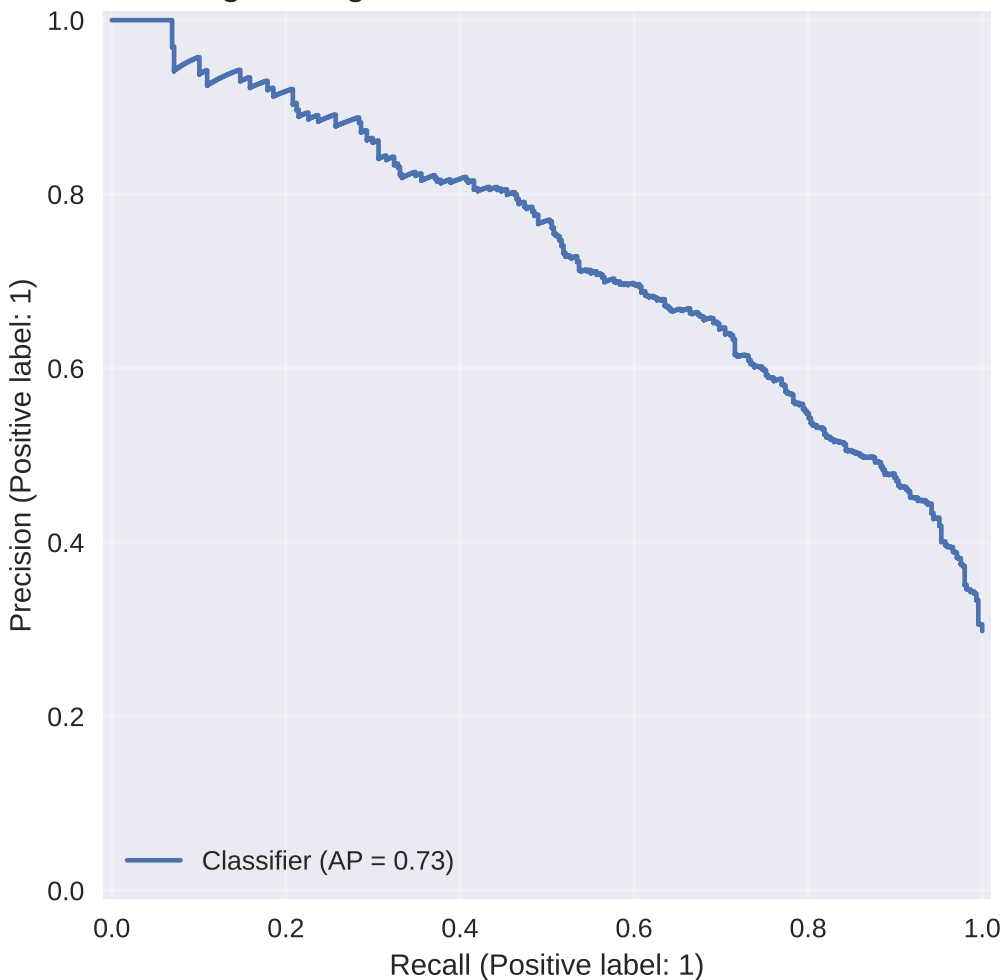
LogisticRegression\_L2 - Confusion Matrix



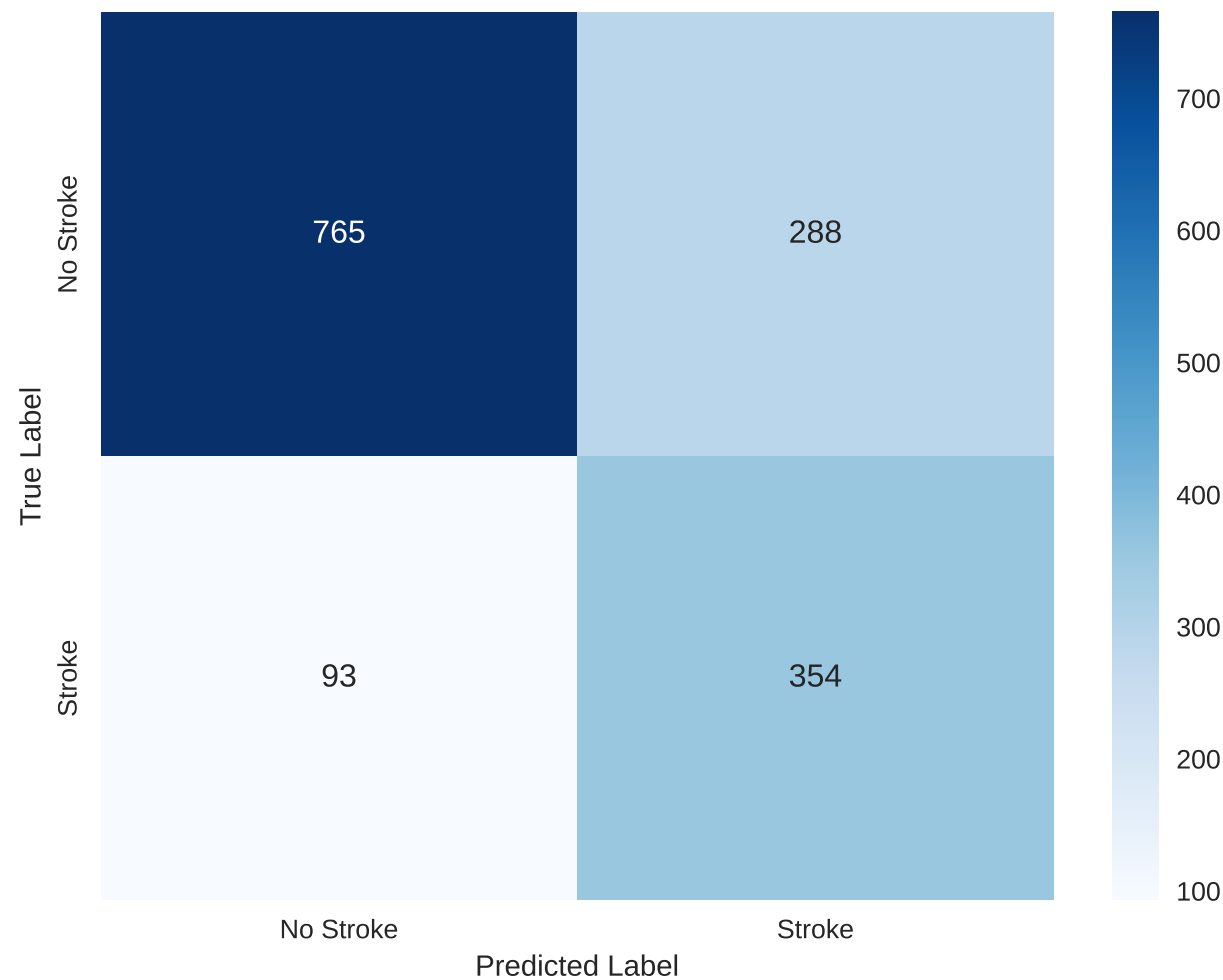
**LogisticRegression\_L2 - ROC Curve (AUC = 0.8504)**



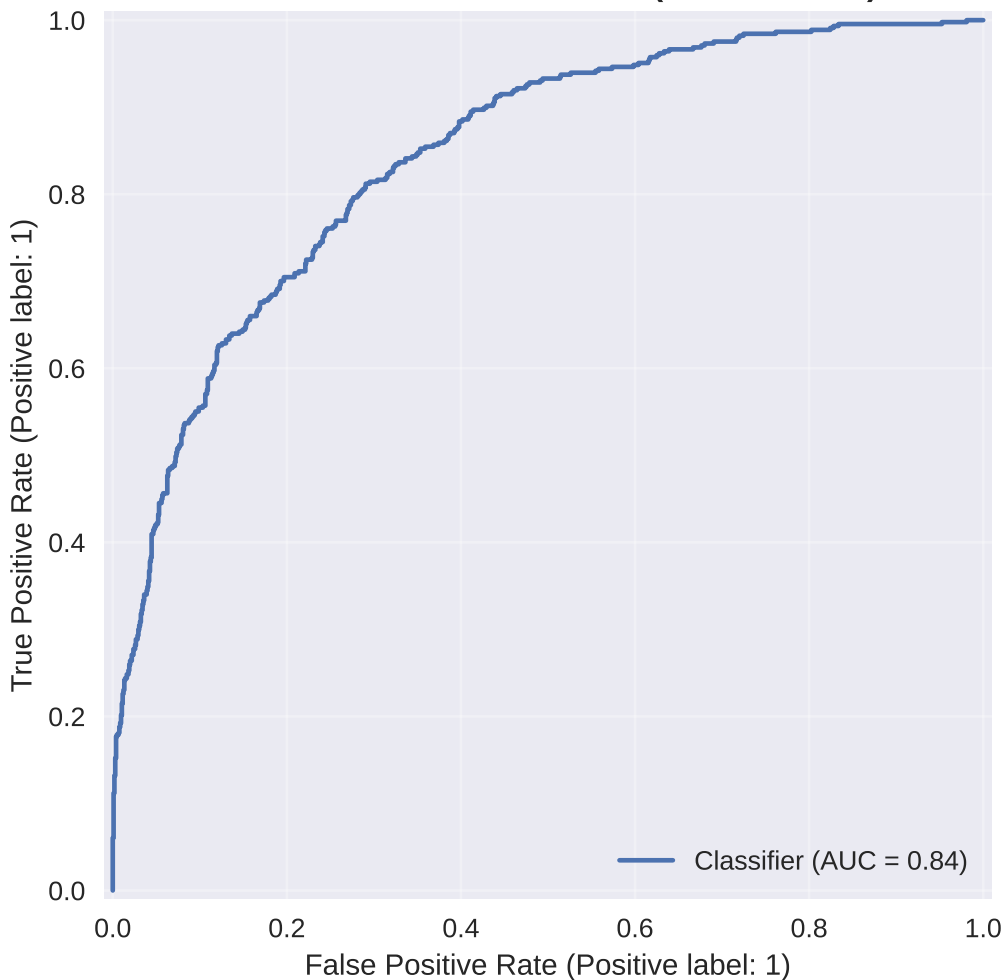
LogisticRegression\_L2 - Precision-Recall Curve



RandomForest - Confusion Matrix

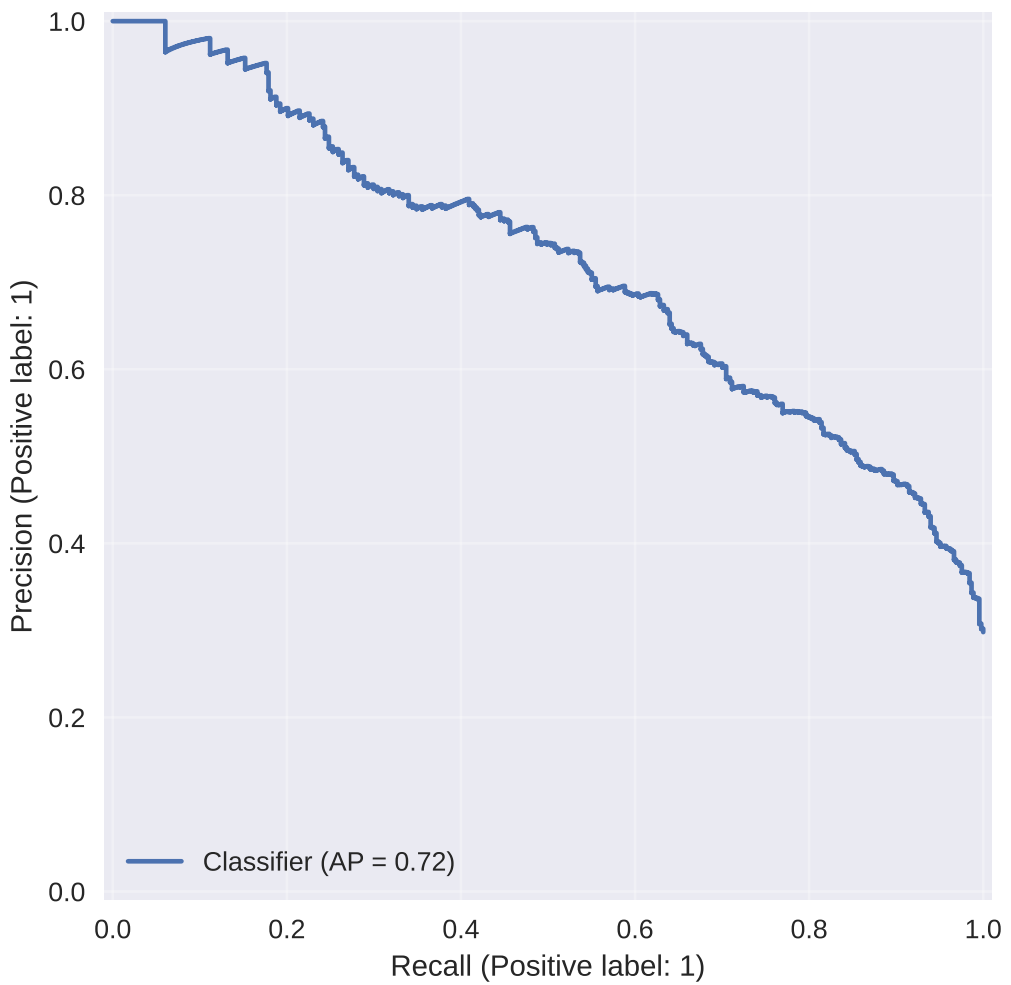


**RandomForest - ROC Curve (AUC = 0.8429)**

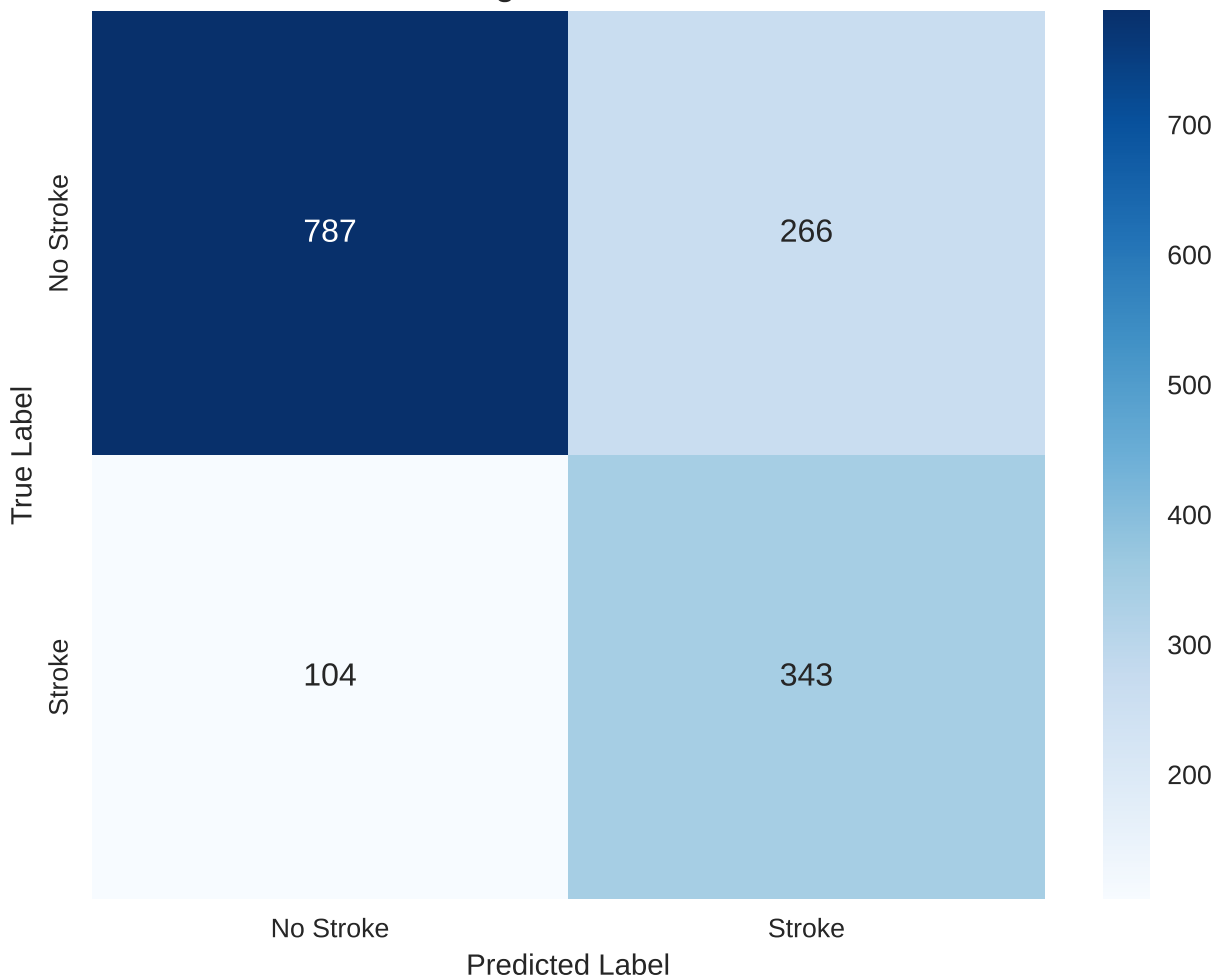




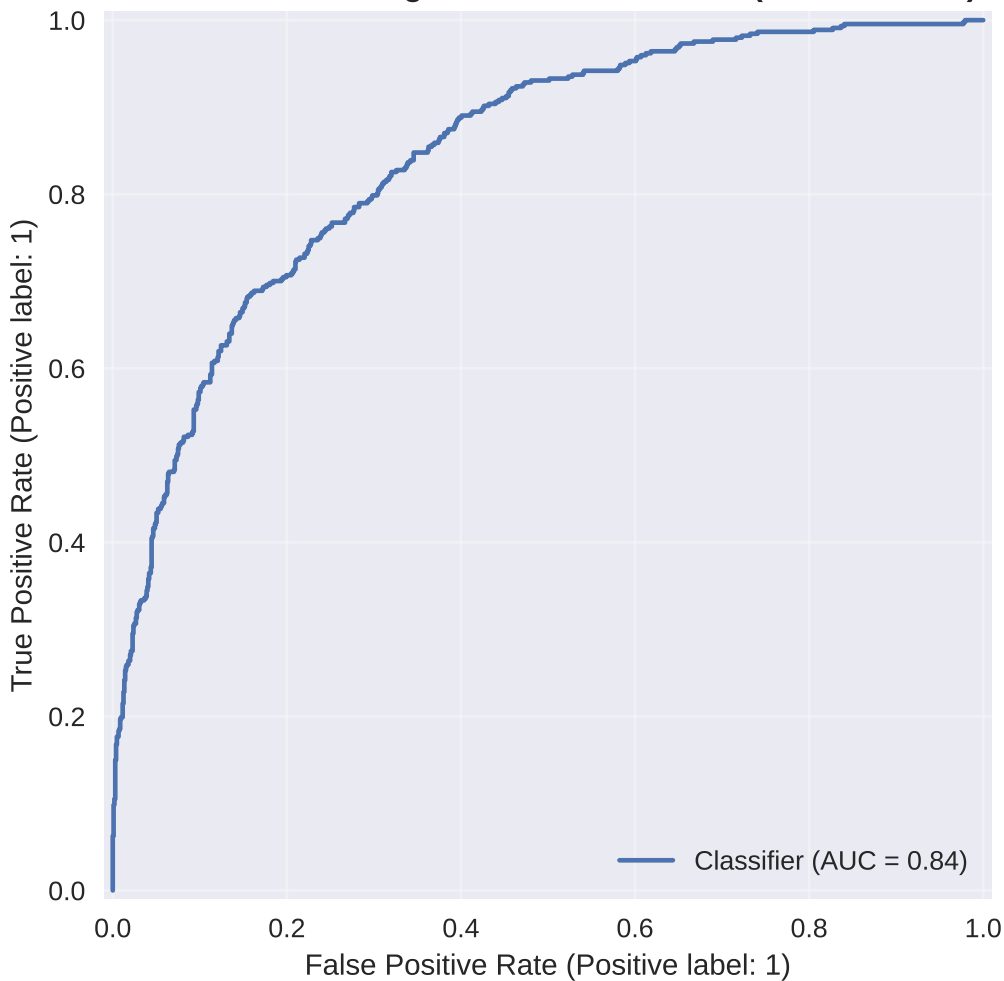
RandomForest - Precision-Recall Curve



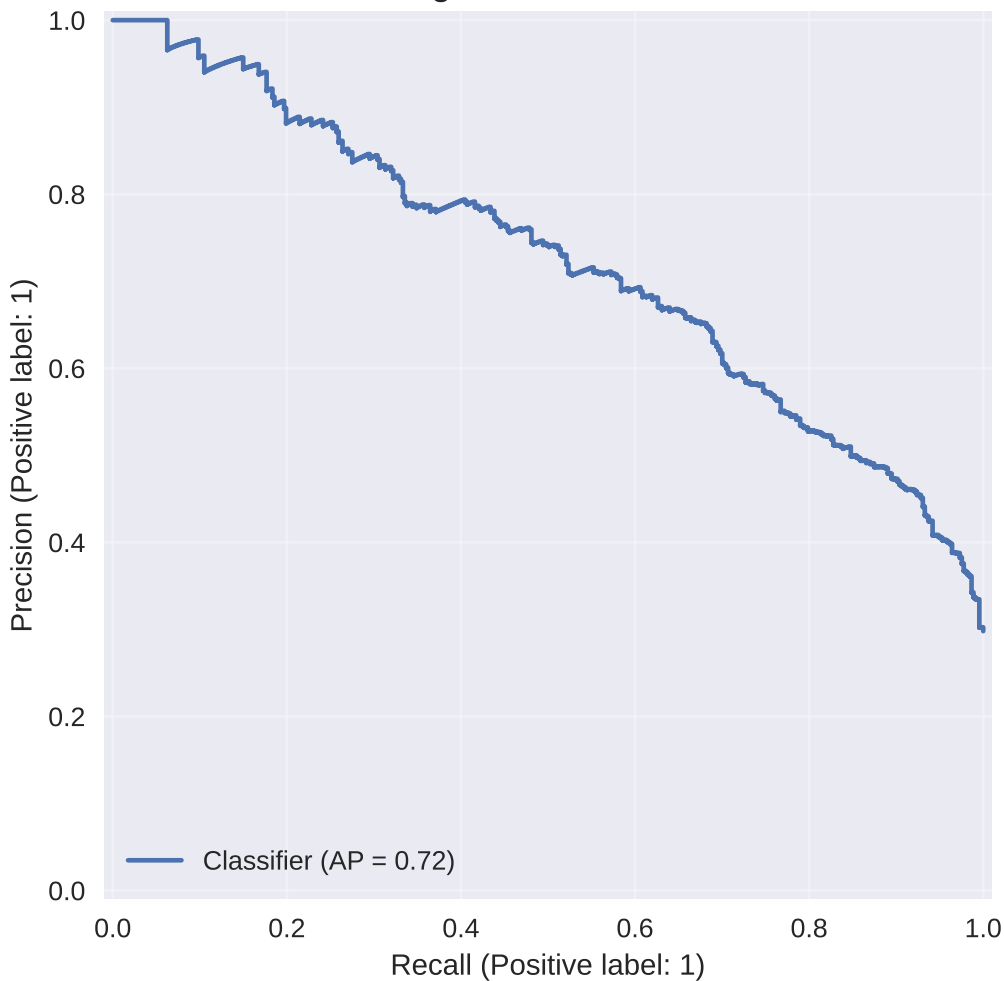
RandomForest-Regularized - Confusion Matrix



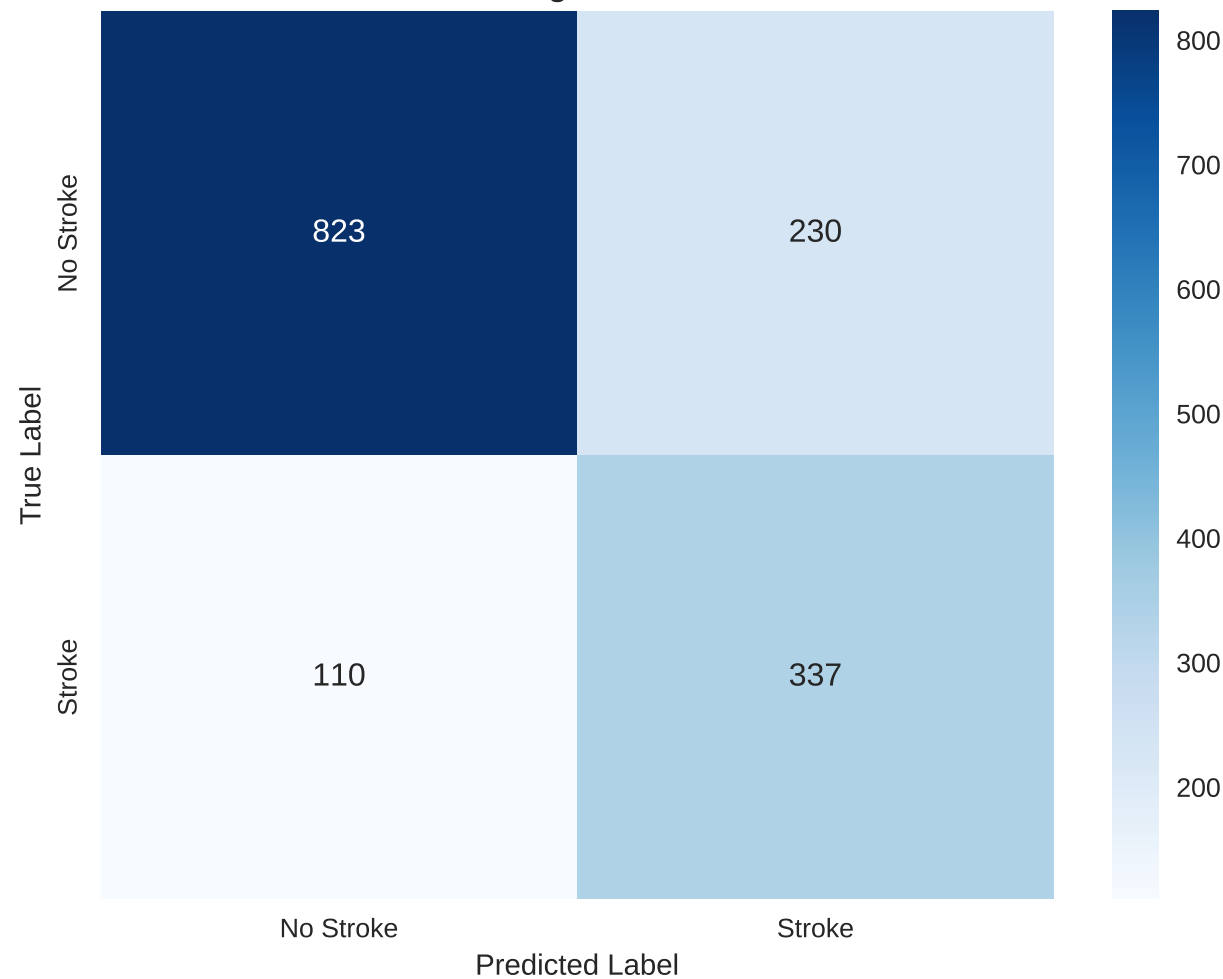
**RandomForest\_Regularized - ROC Curve (AUC = 0.8444)**



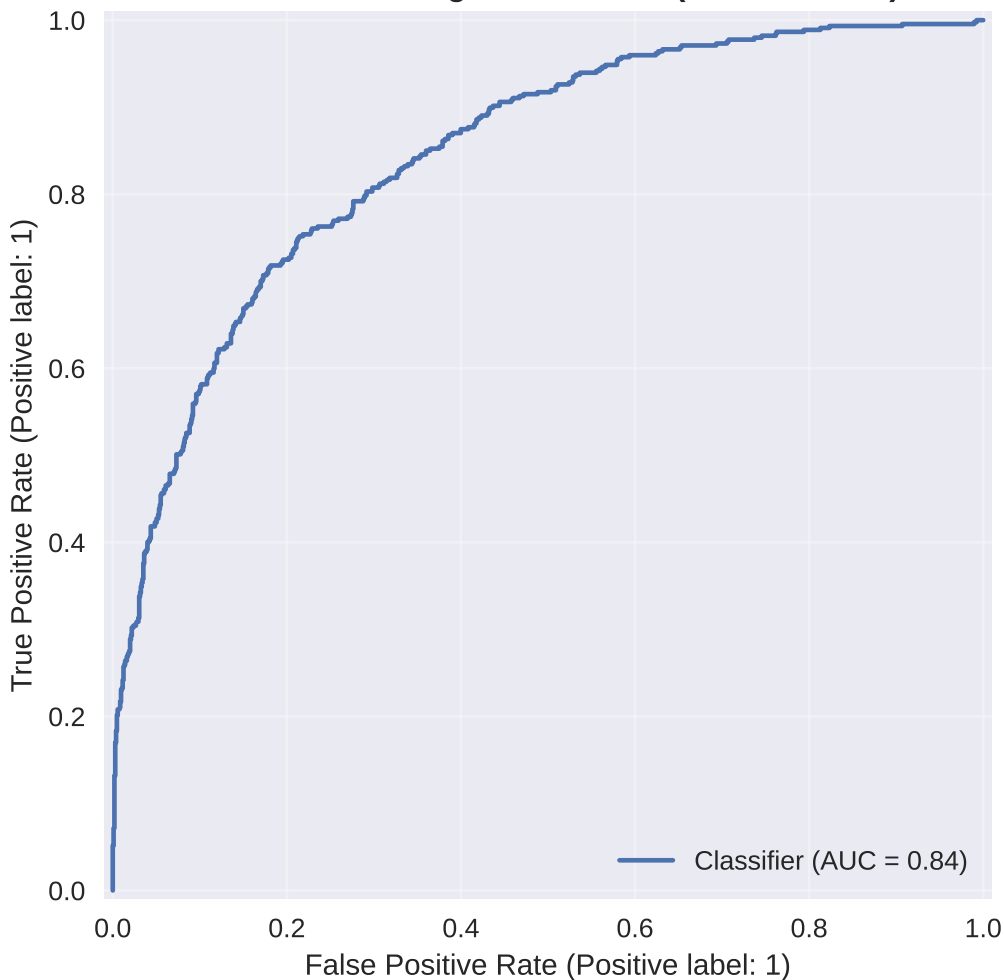
RandomForest-Regularized - Precision-Recall Curve



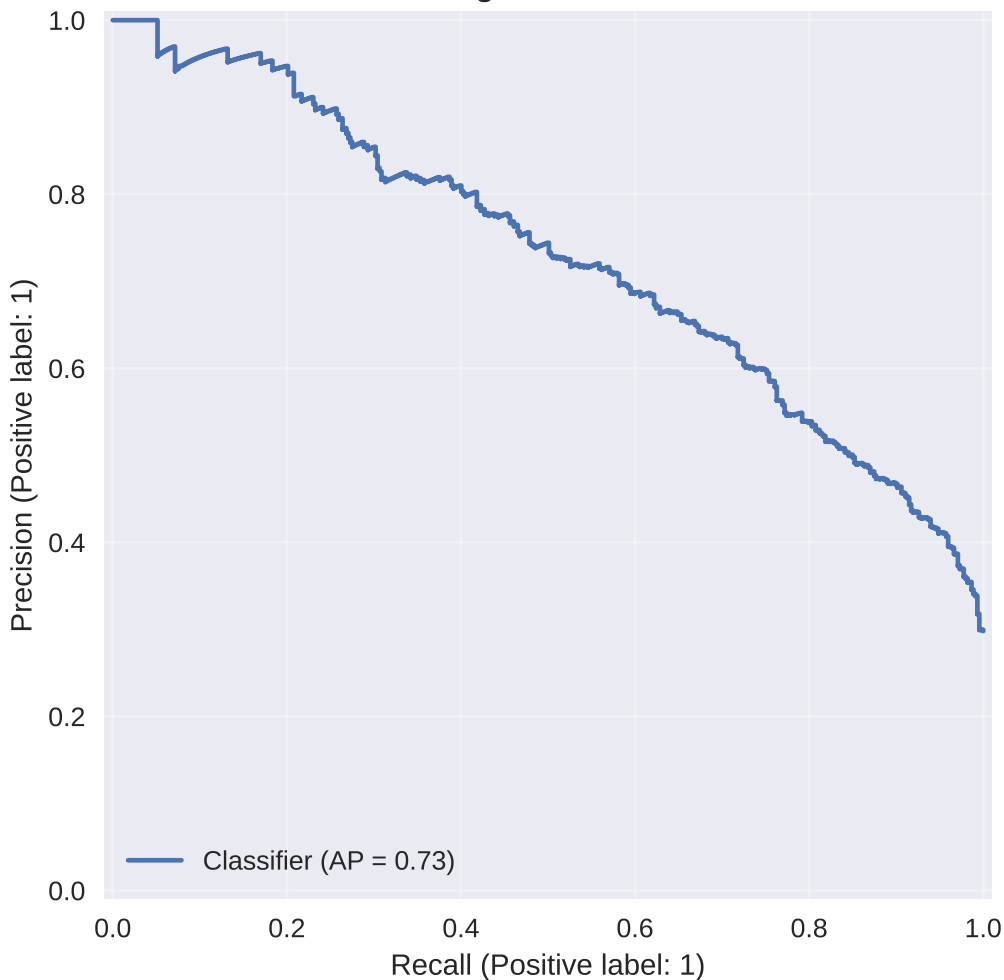
GradientBoosting - Confusion Matrix



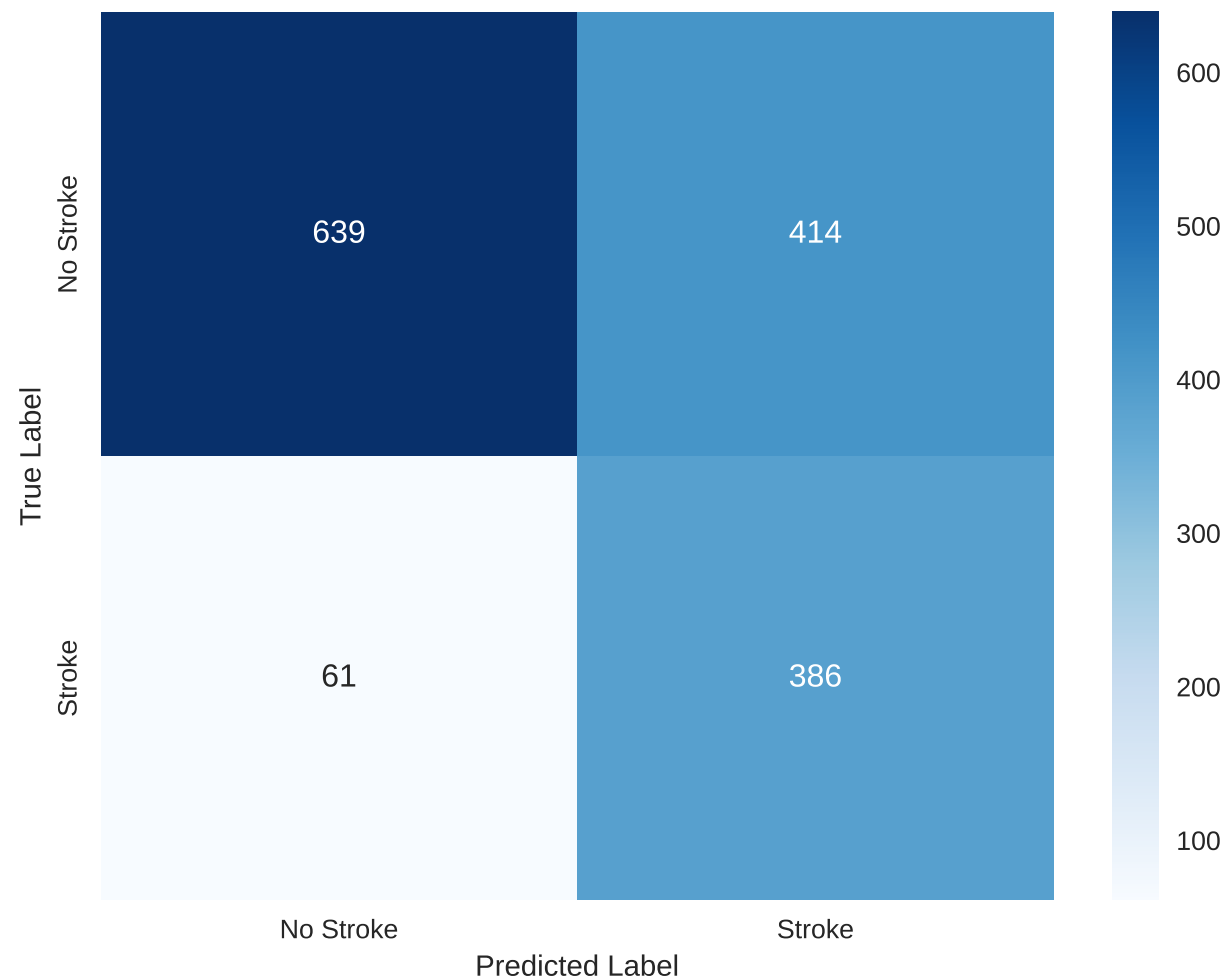
**GradientBoosting - ROC Curve (AUC = 0.8446)**



# GradientBoosting - Precision-Recall Curve

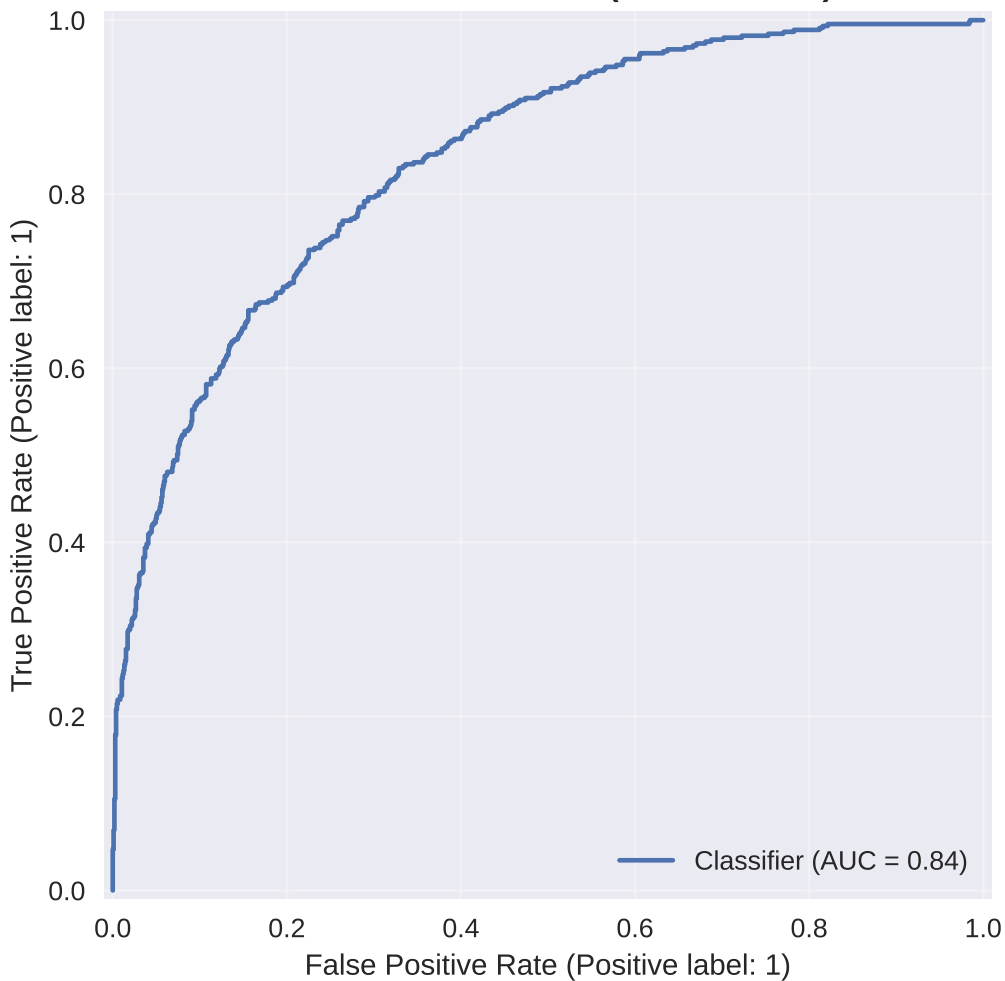


**XGBoost - Confusion Matrix**

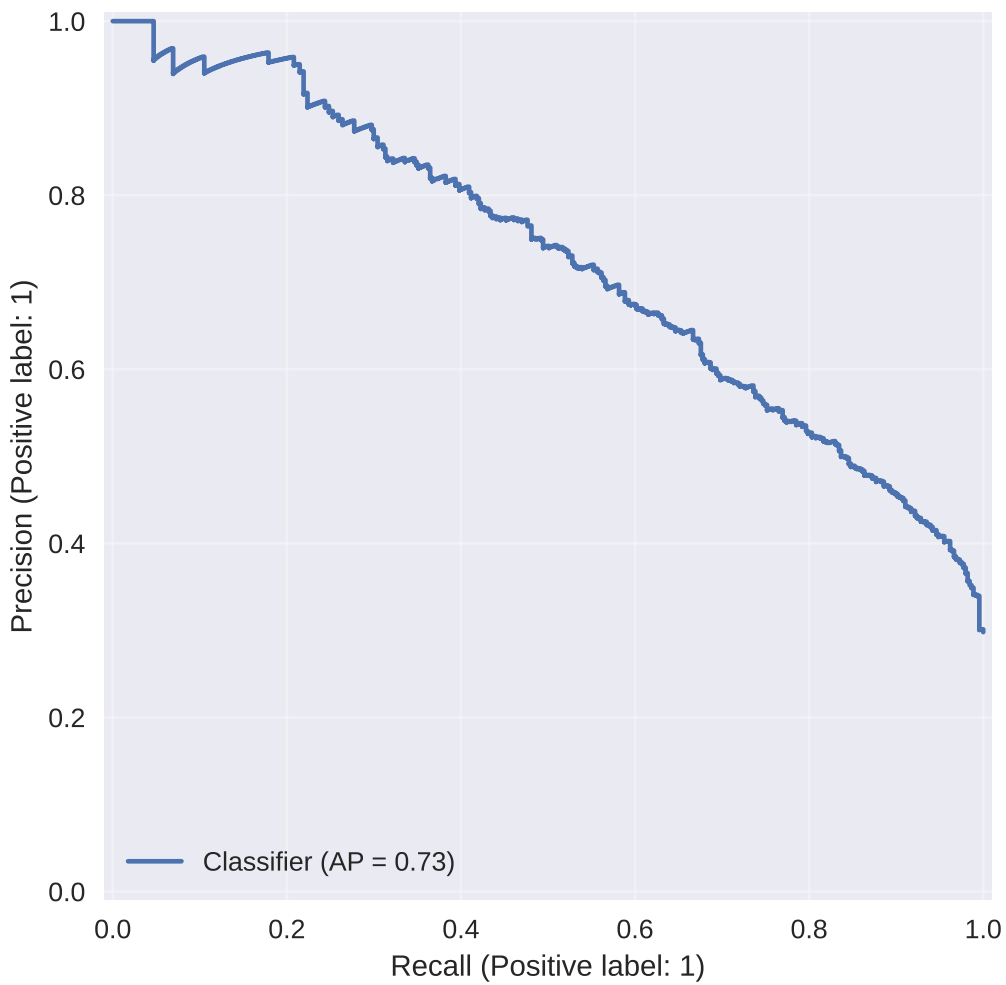




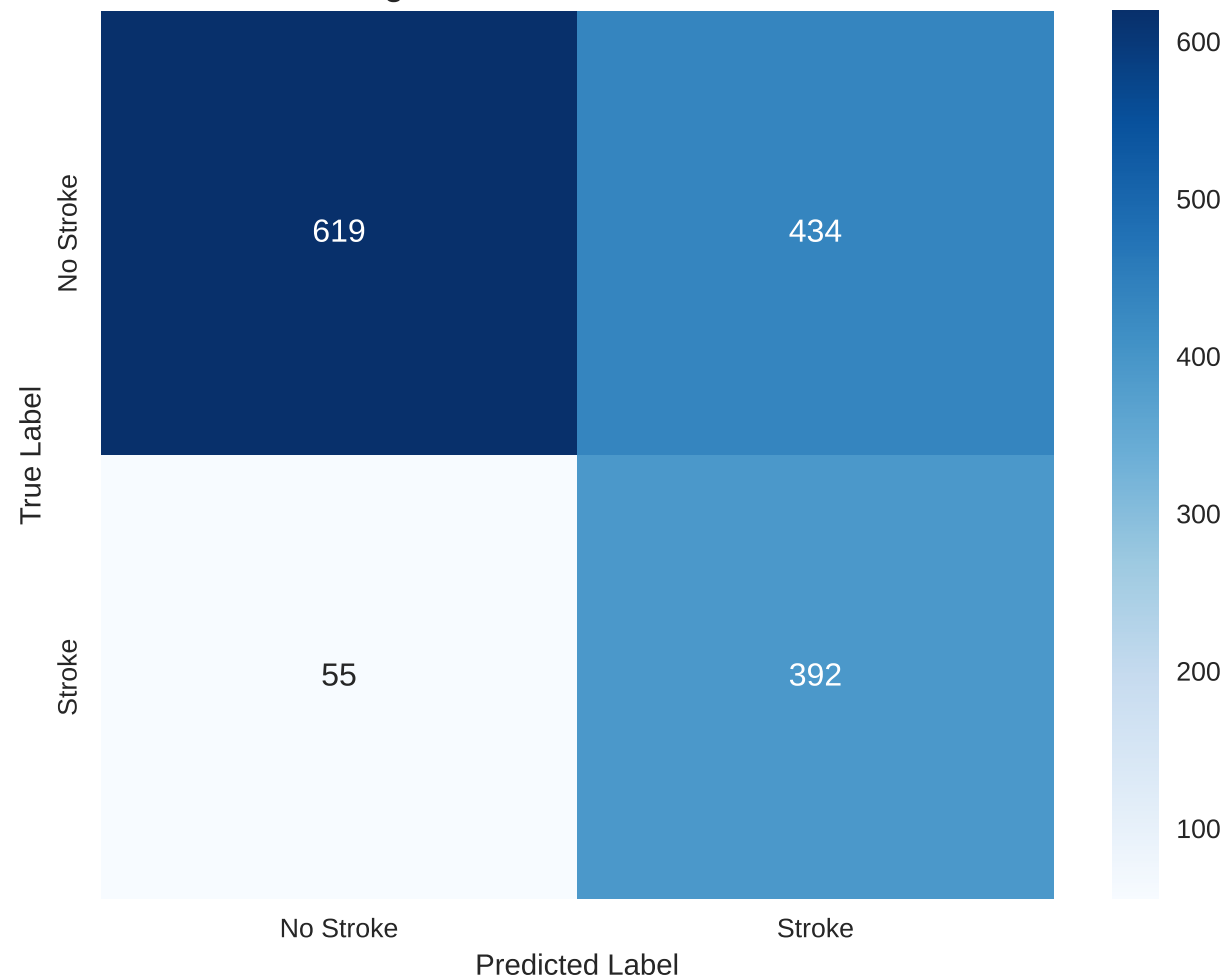
**XGBoost - ROC Curve (AUC = 0.8408)**



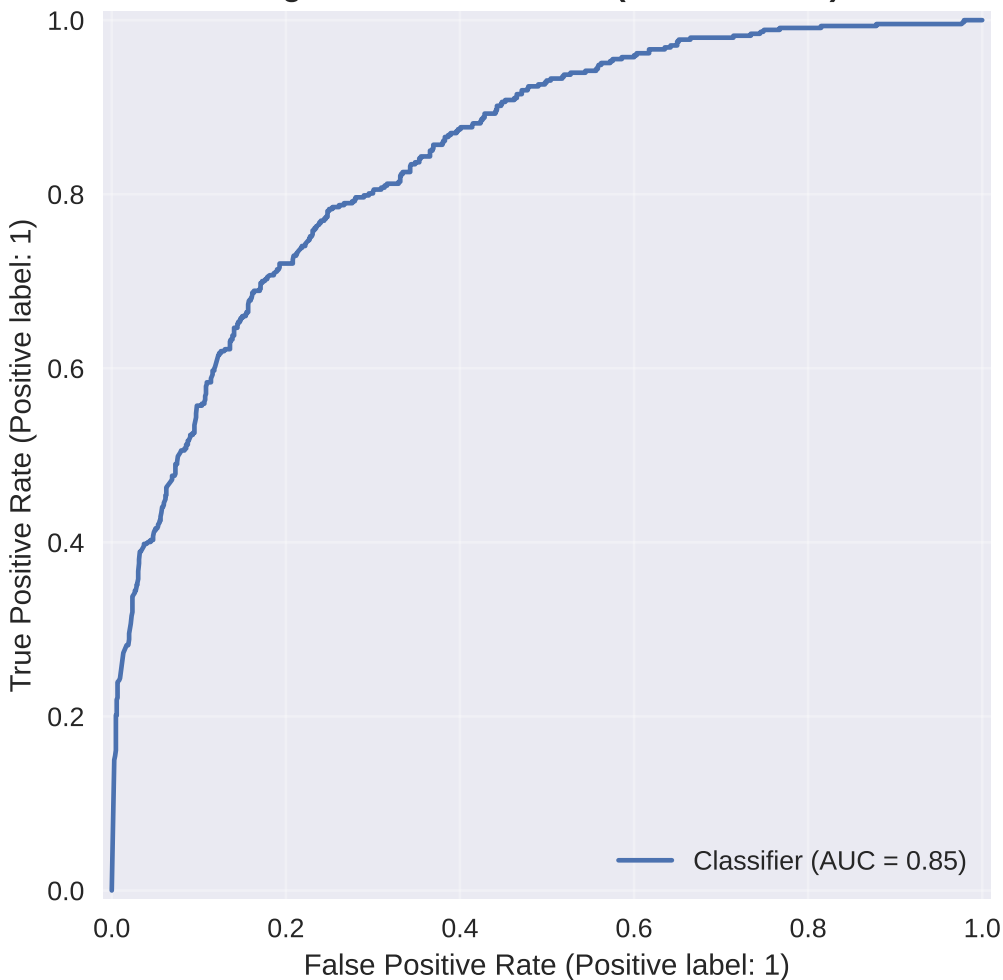
# XGBoost - Precision-Recall Curve



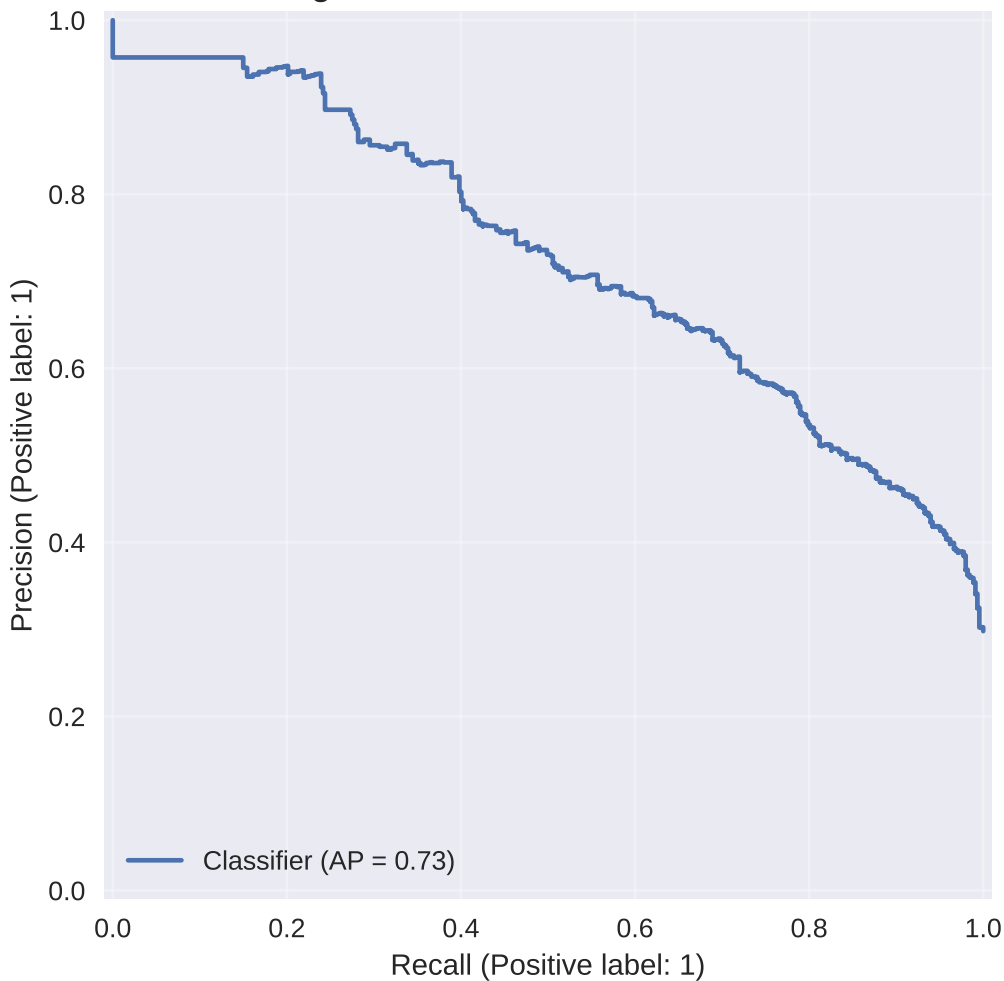
LightGBM - Confusion Matrix



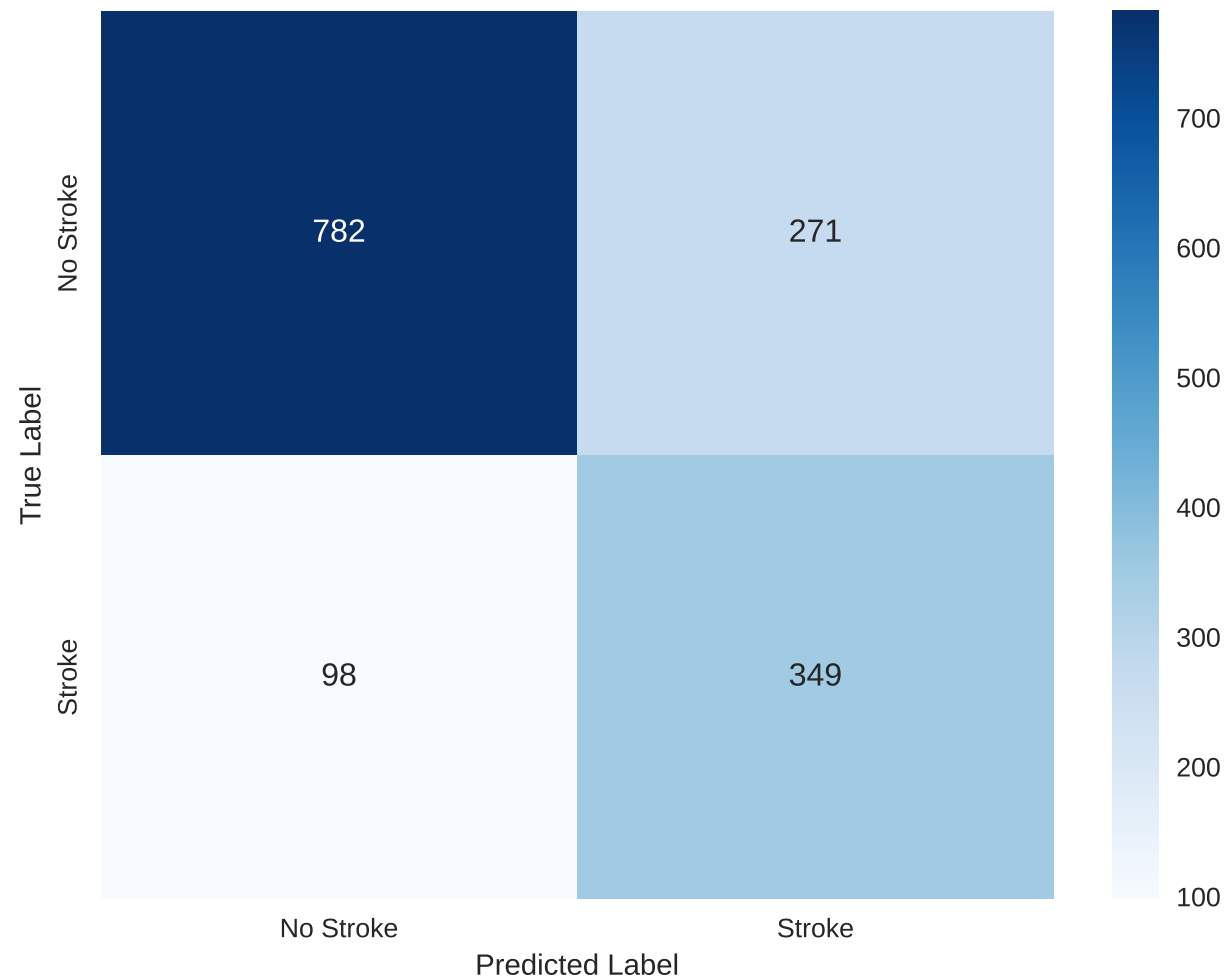
**LightGBM - ROC Curve (AUC = 0.8455)**



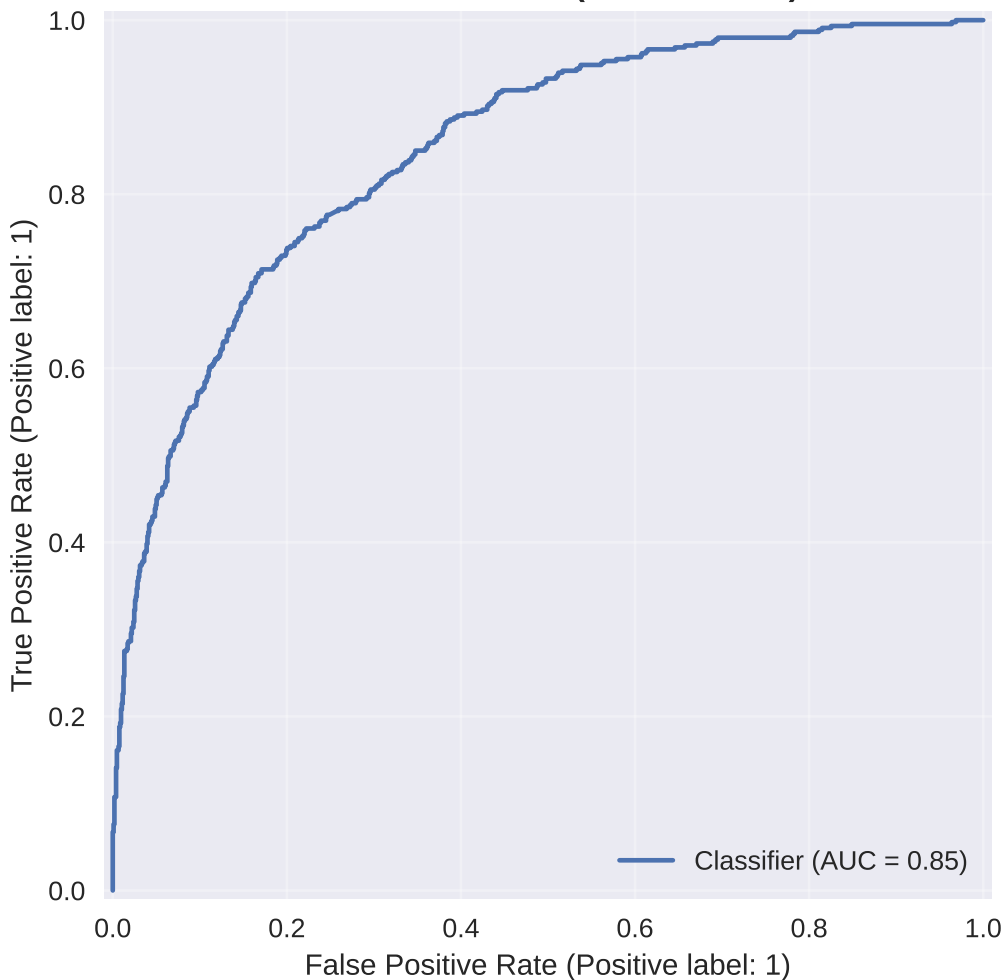
LightGBM - Precision-Recall Curve



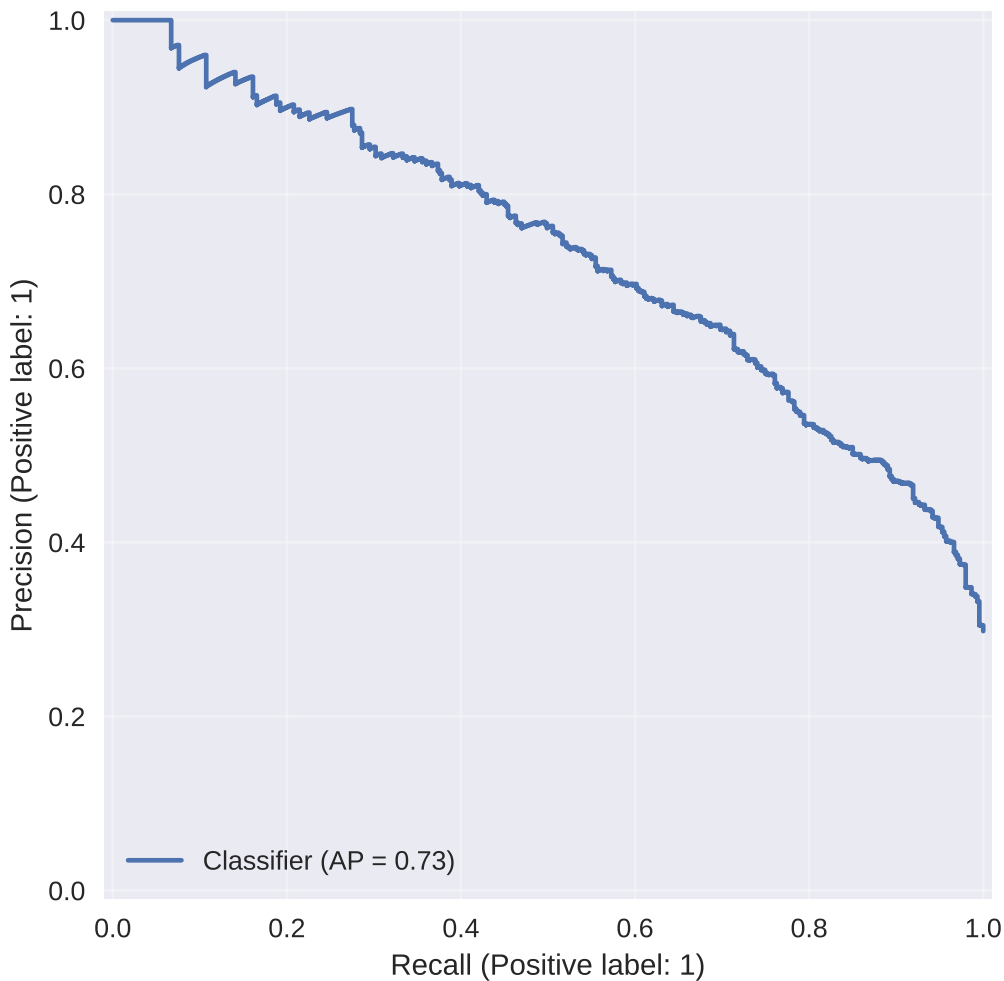
**SVM - Confusion Matrix**



**SVM - ROC Curve (AUC = 0.8496)**

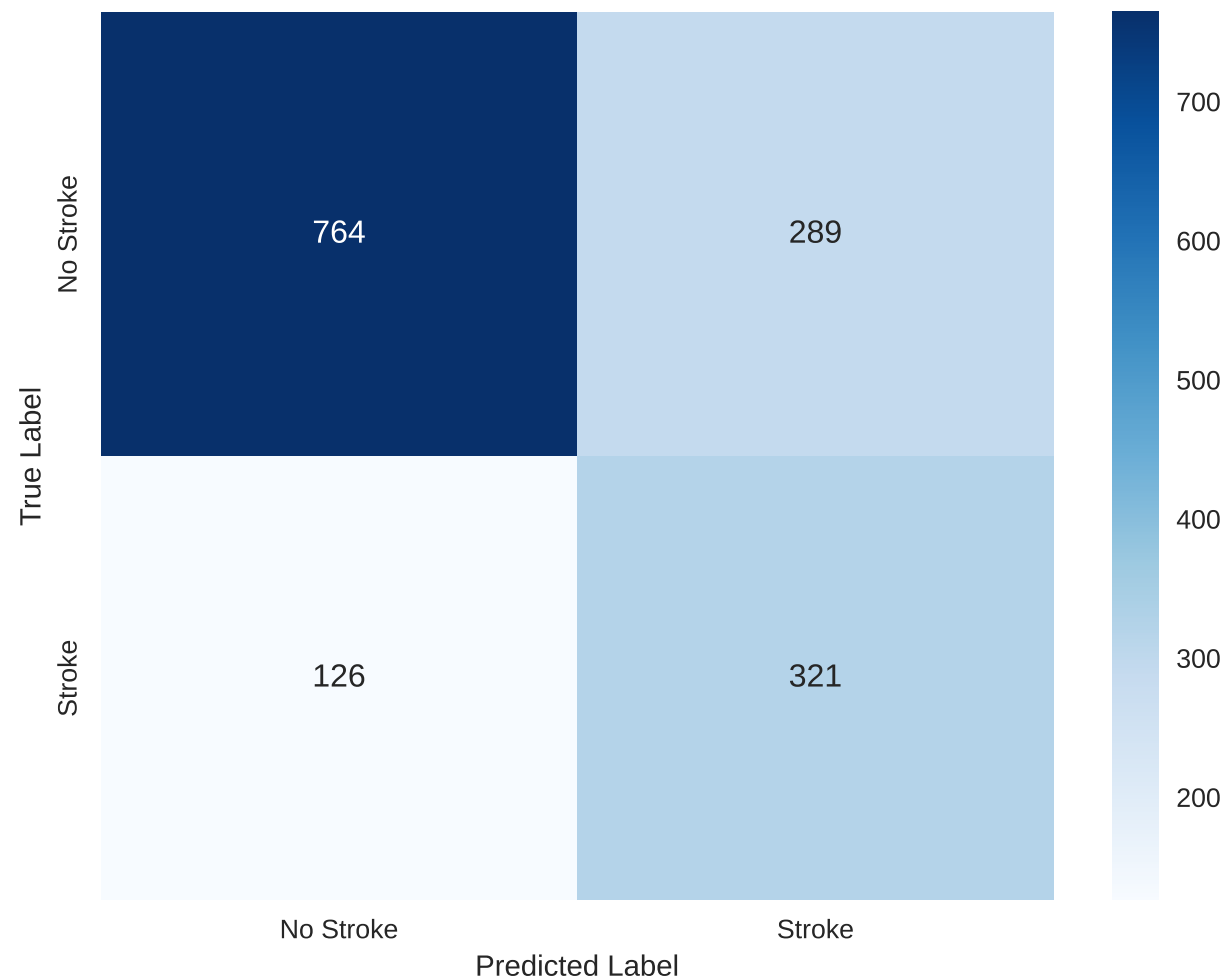


# SVM - Precision-Recall Curve

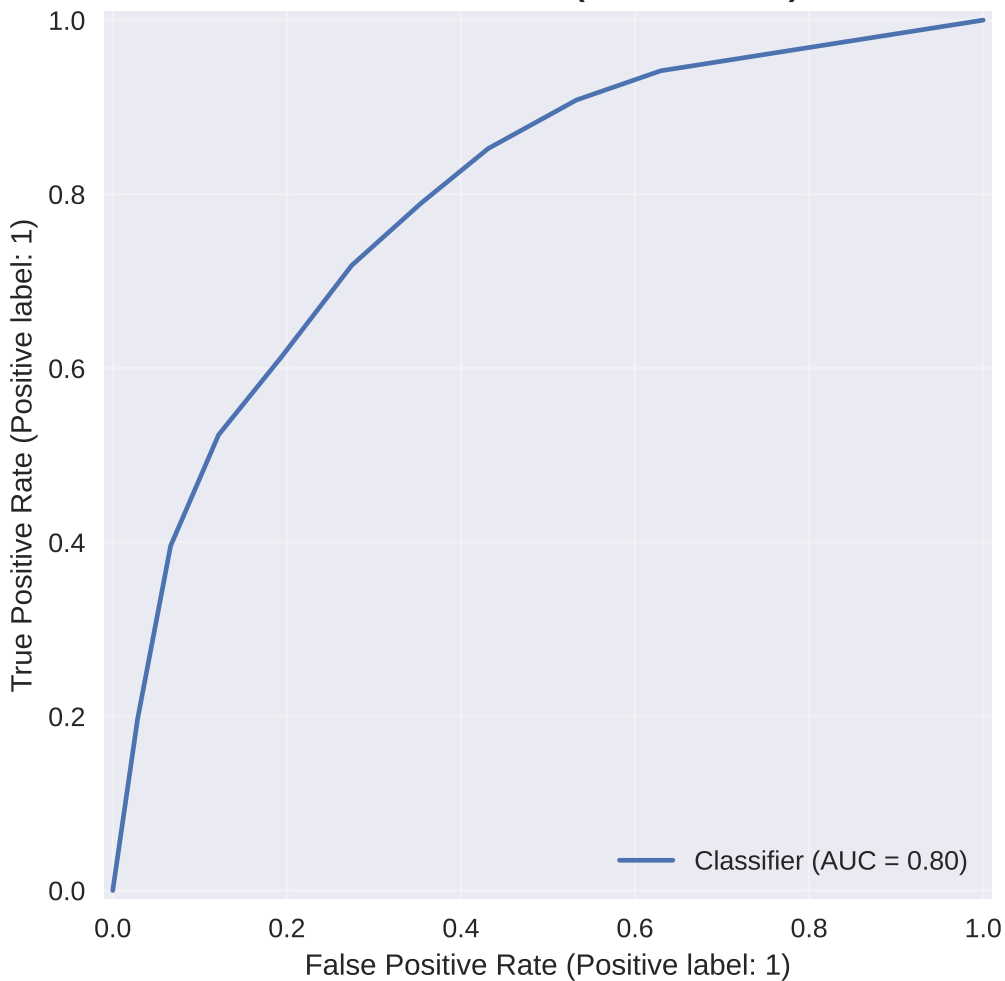




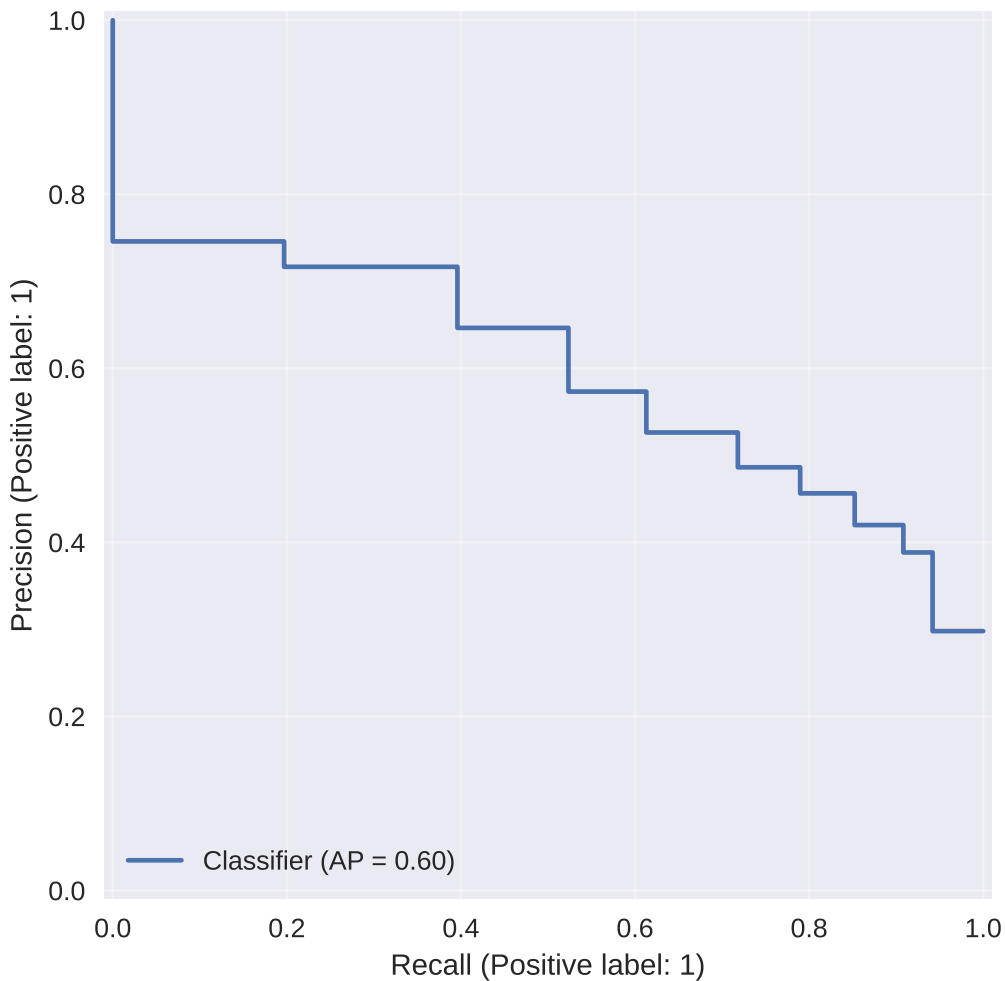
KNN - Confusion Matrix



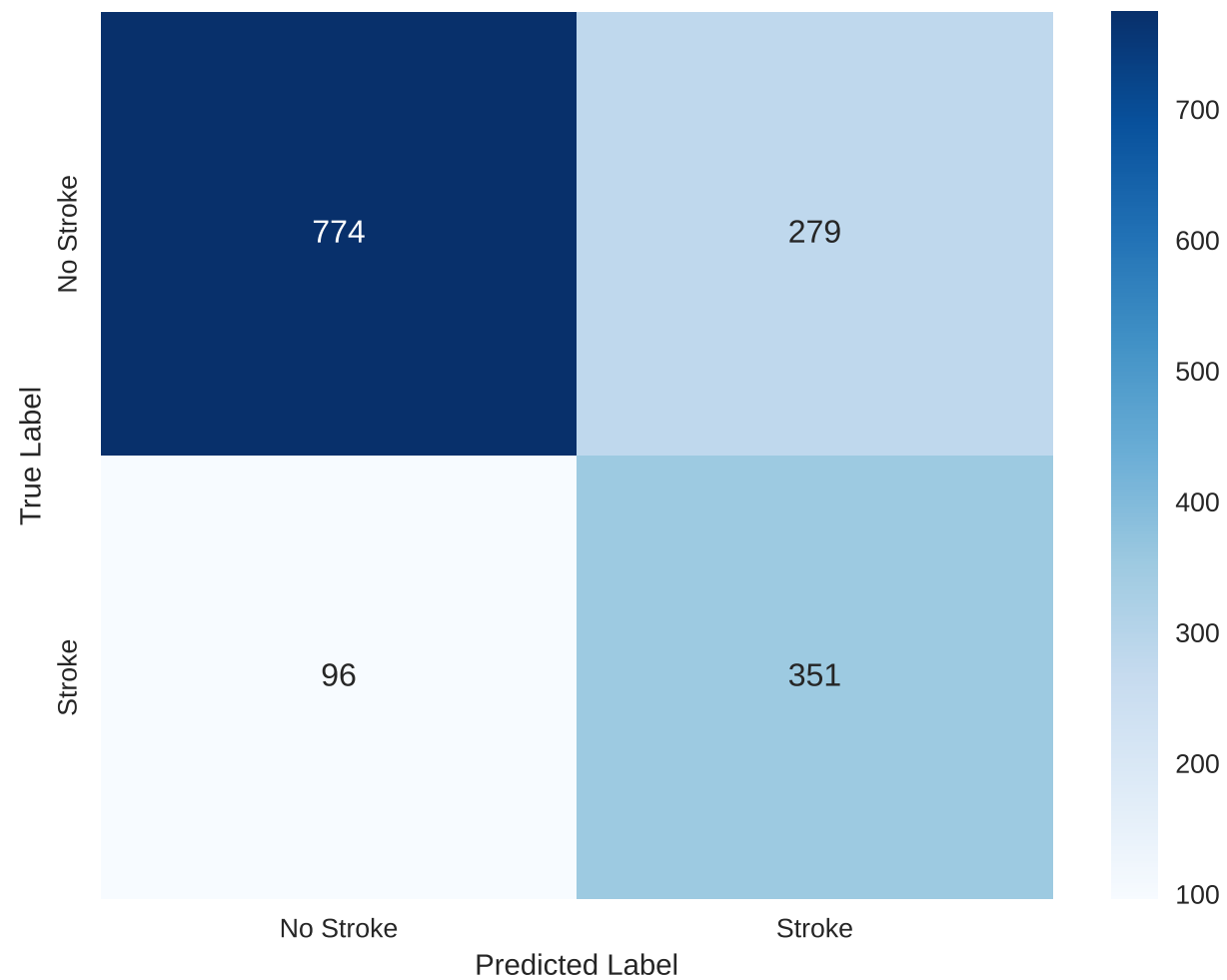
**KNN - ROC Curve (AUC = 0.7961)**



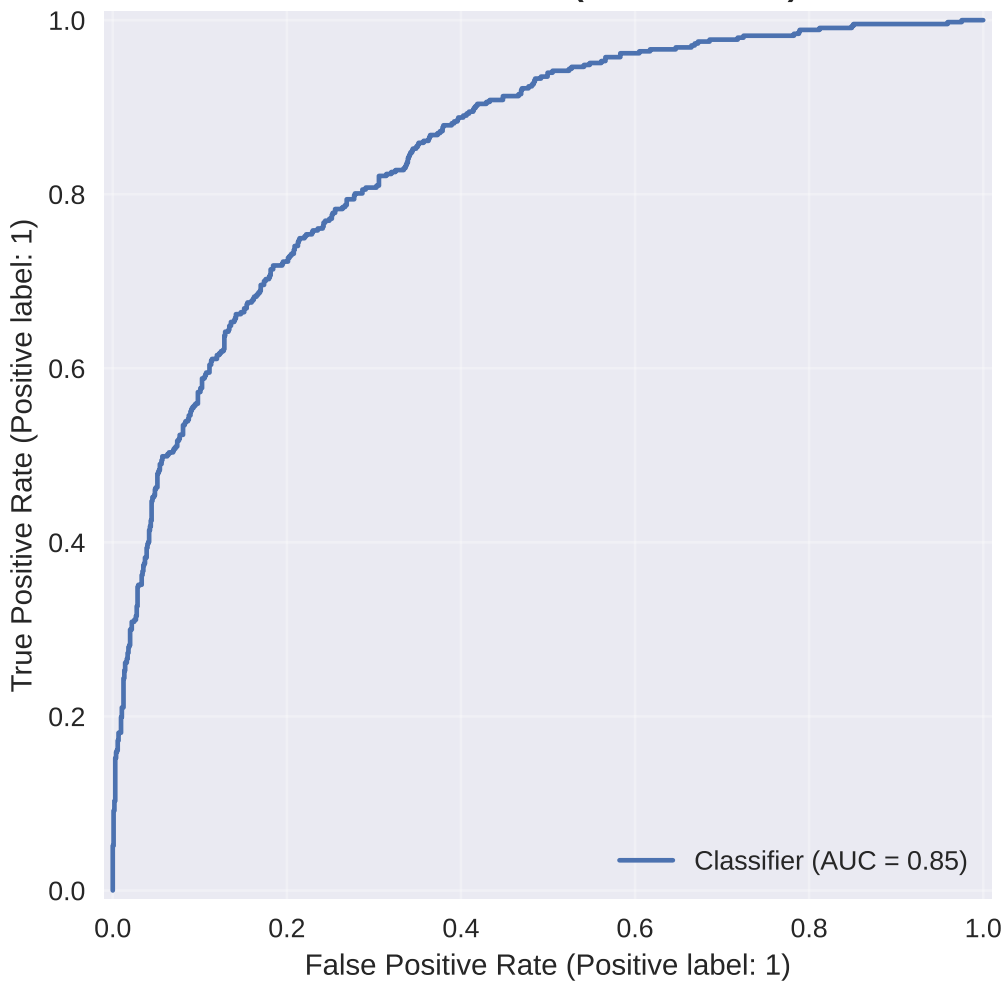
# KNN - Precision-Recall Curve



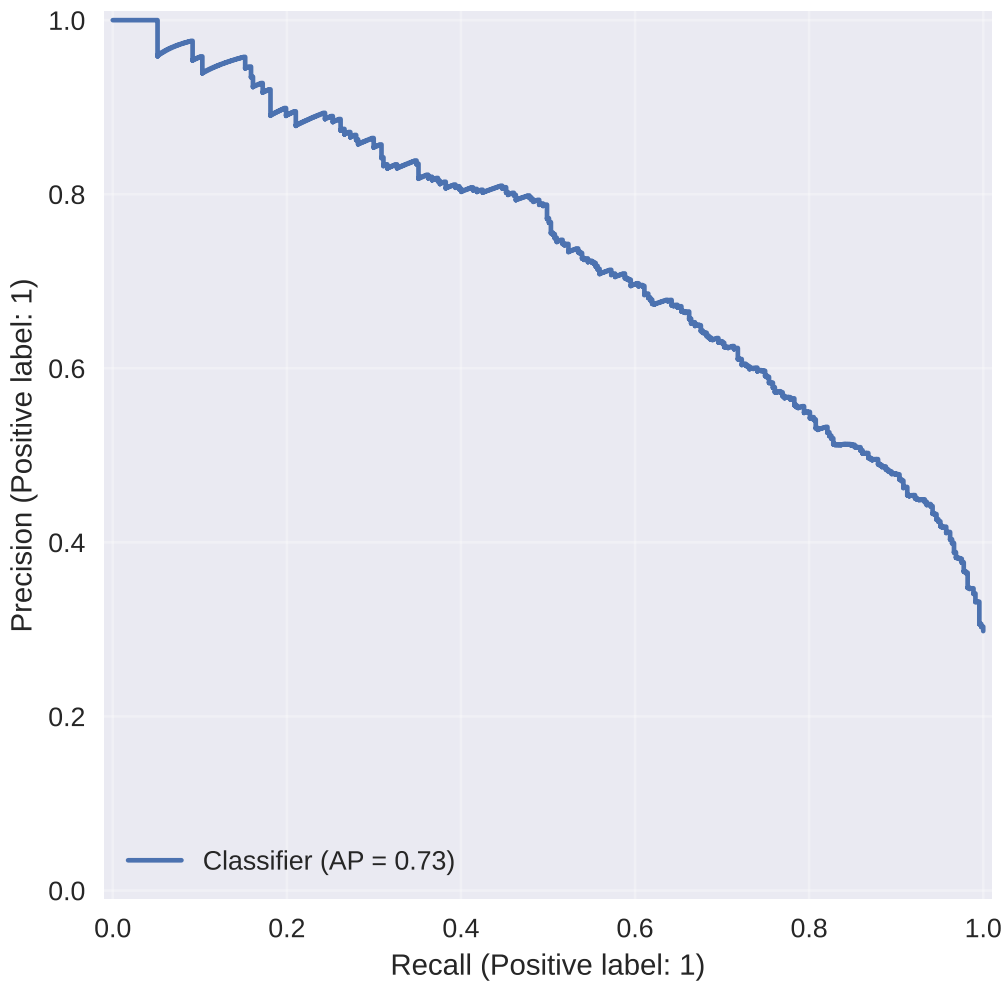
MLP - Confusion Matrix



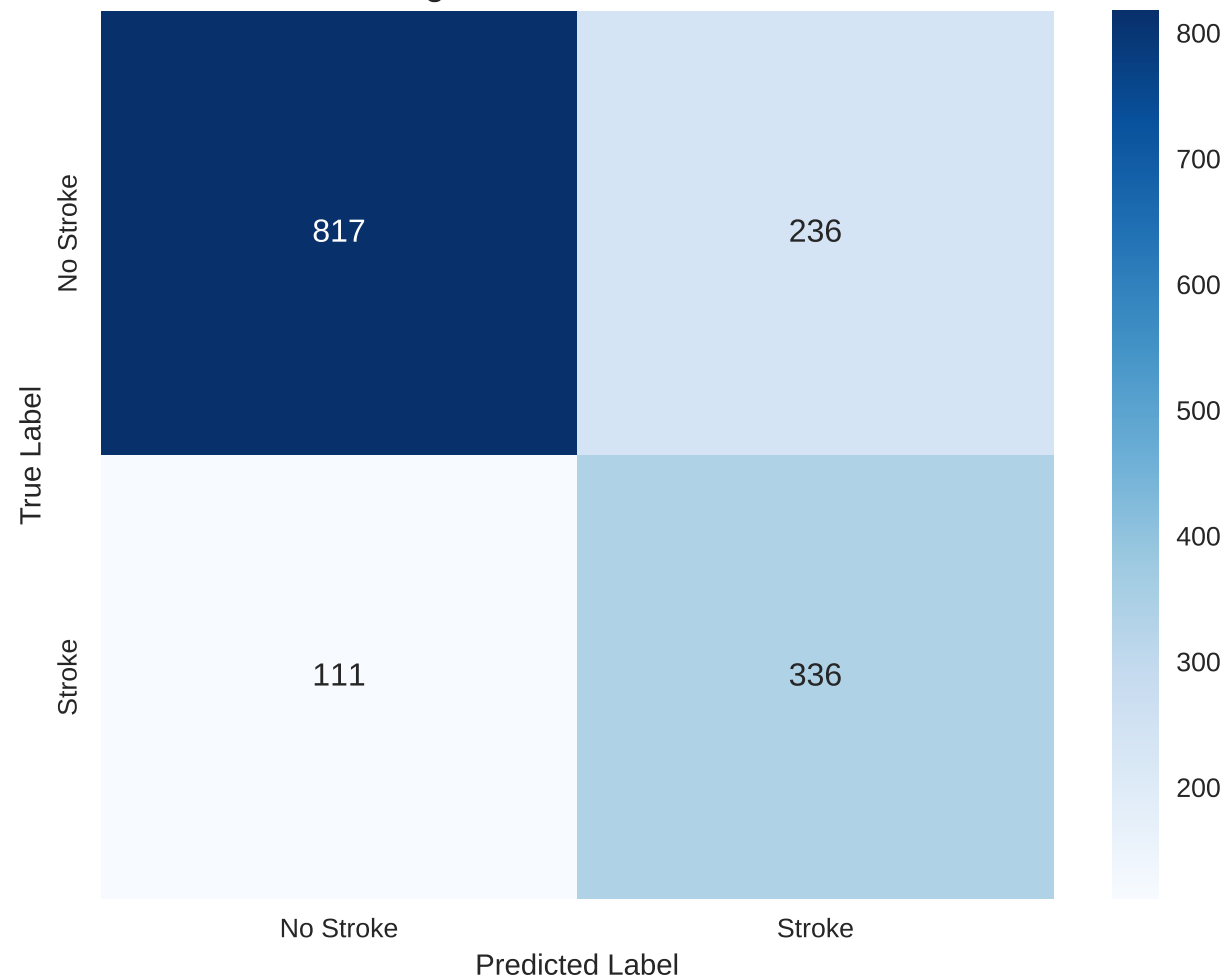
MLP - ROC Curve (AUC = 0.8502)



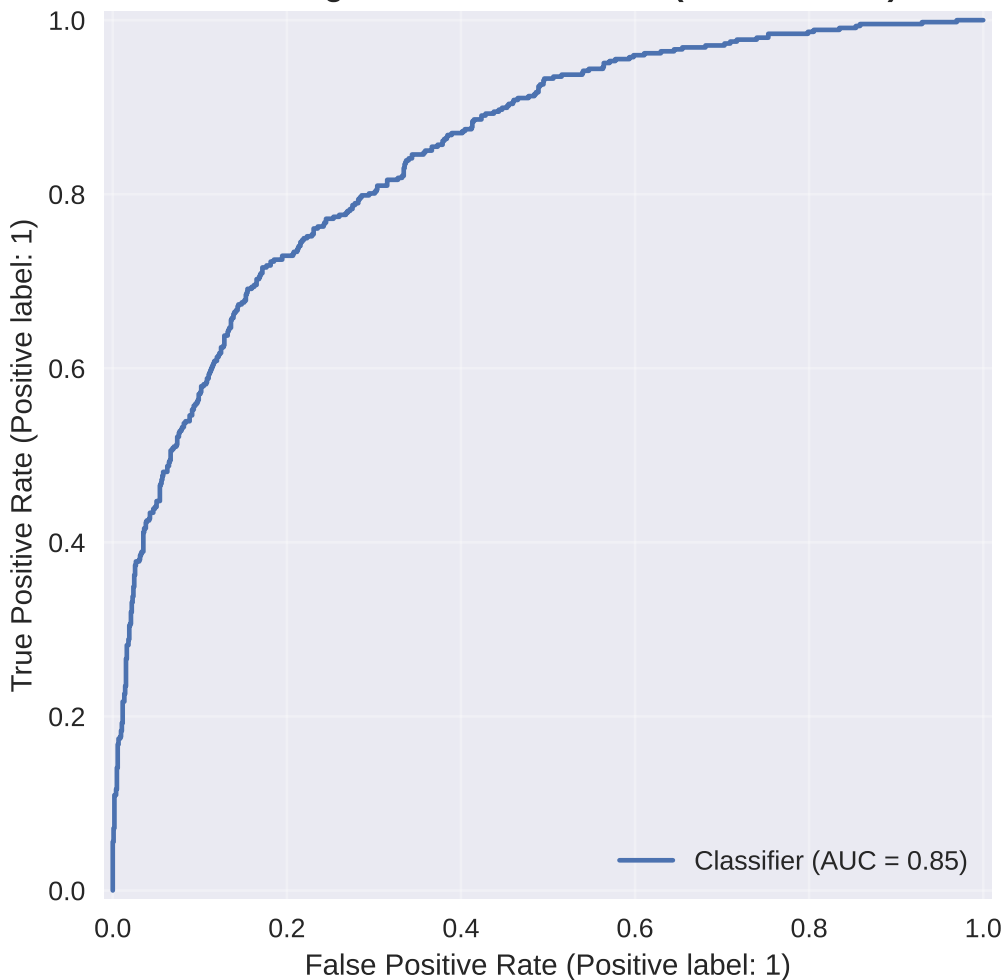
# MLP - Precision-Recall Curve



MLP\_Regularized - Confusion Matrix

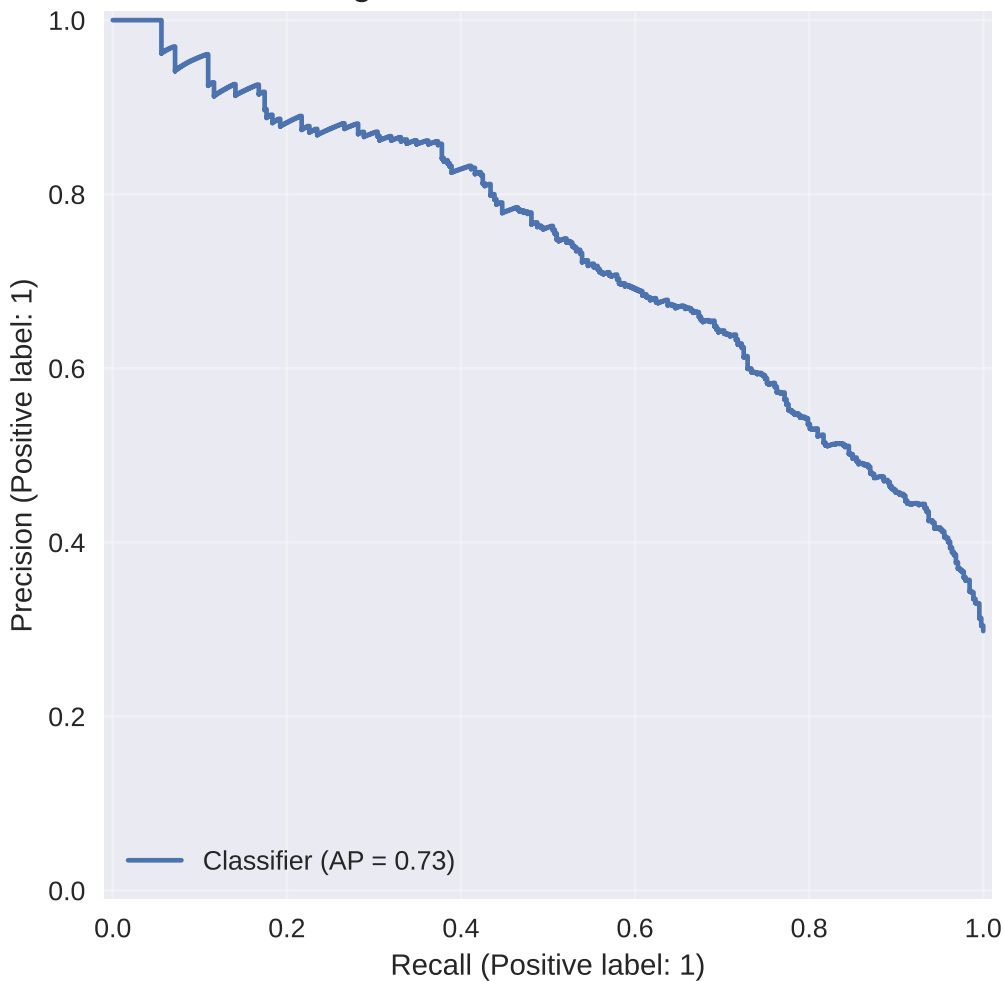


**MLP-Regularized - ROC Curve (AUC = 0.8471)**

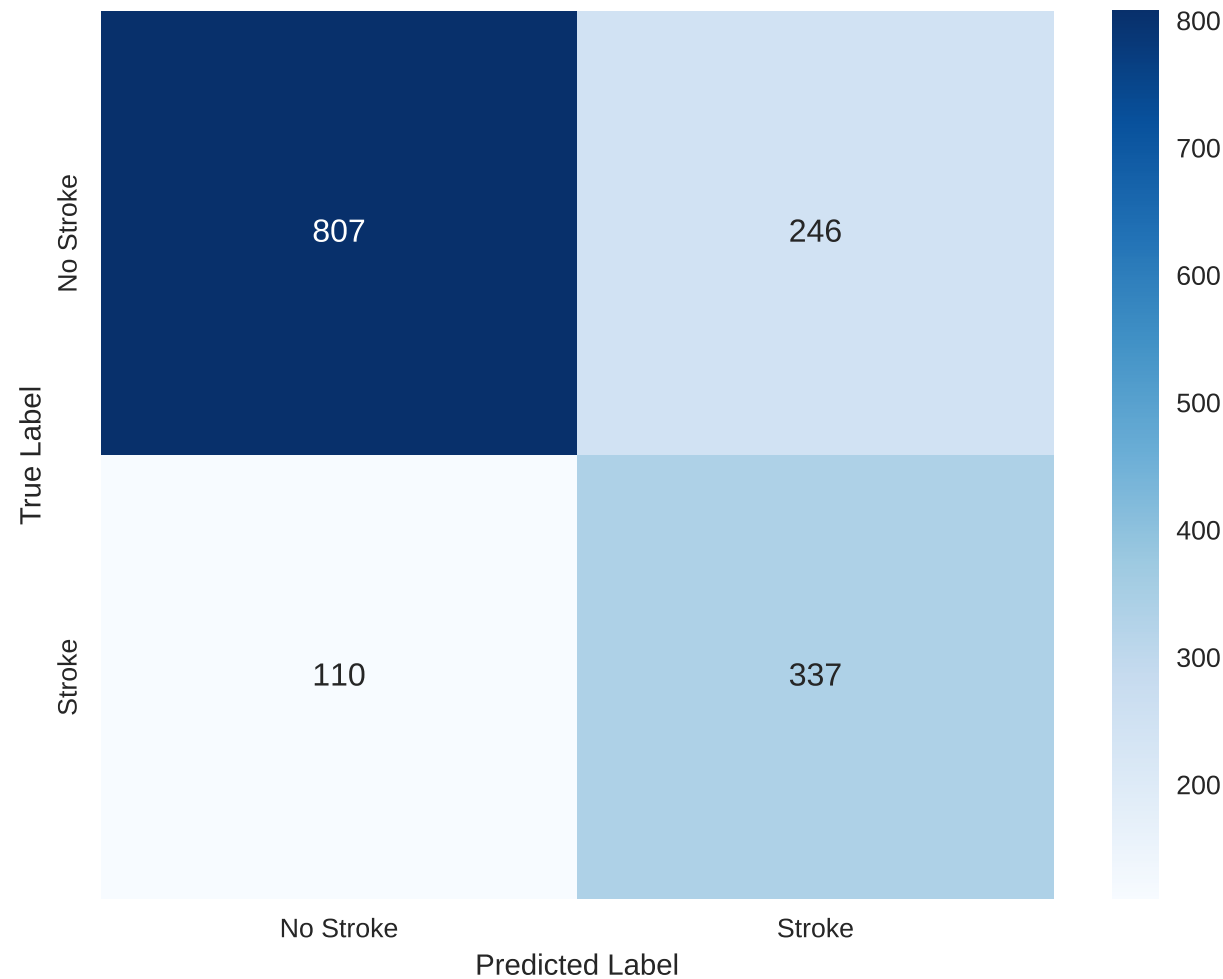




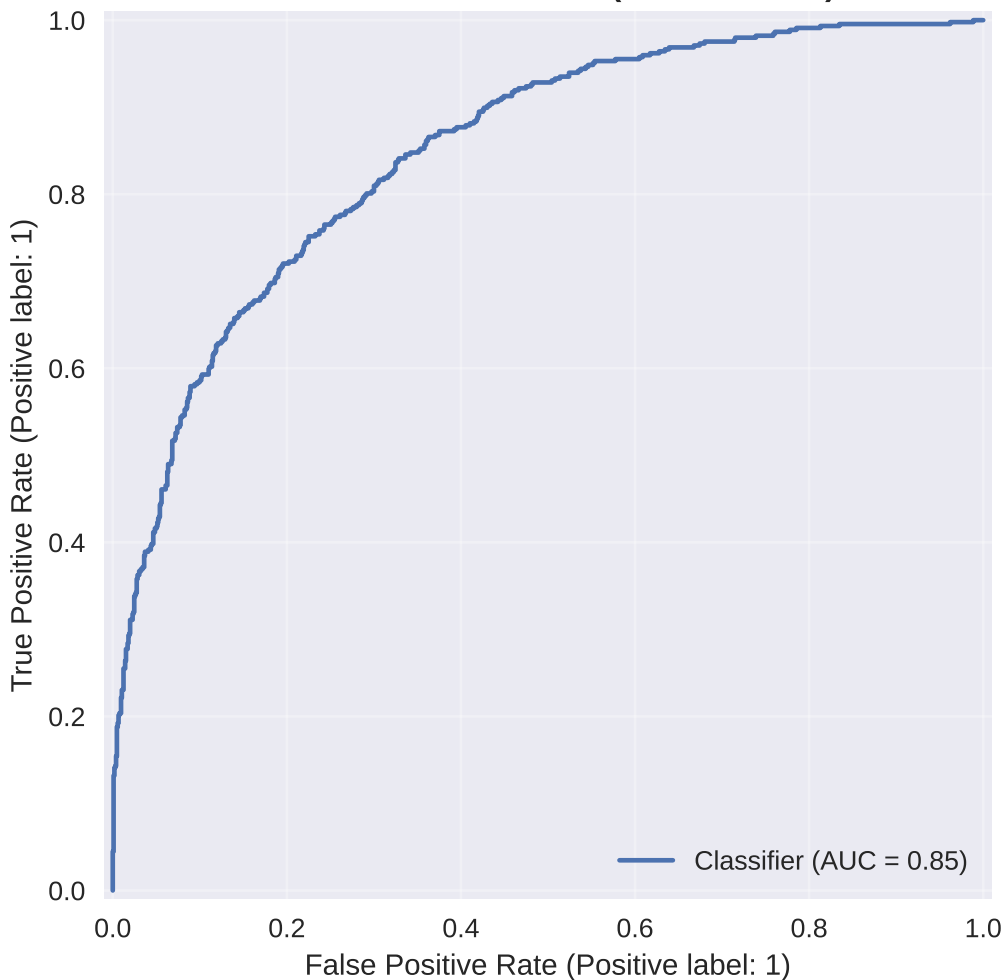
**MLP-Regularized - Precision-Recall Curve**



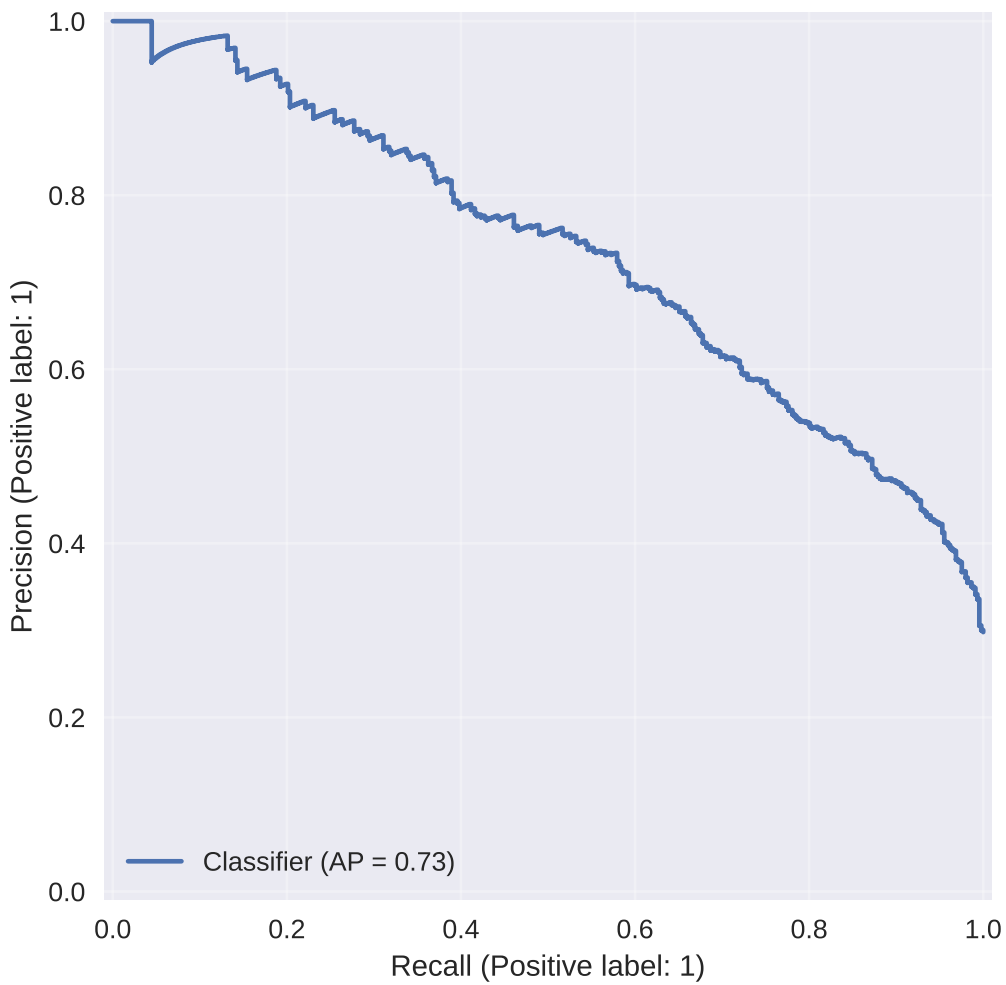
CatBoost - Confusion Matrix



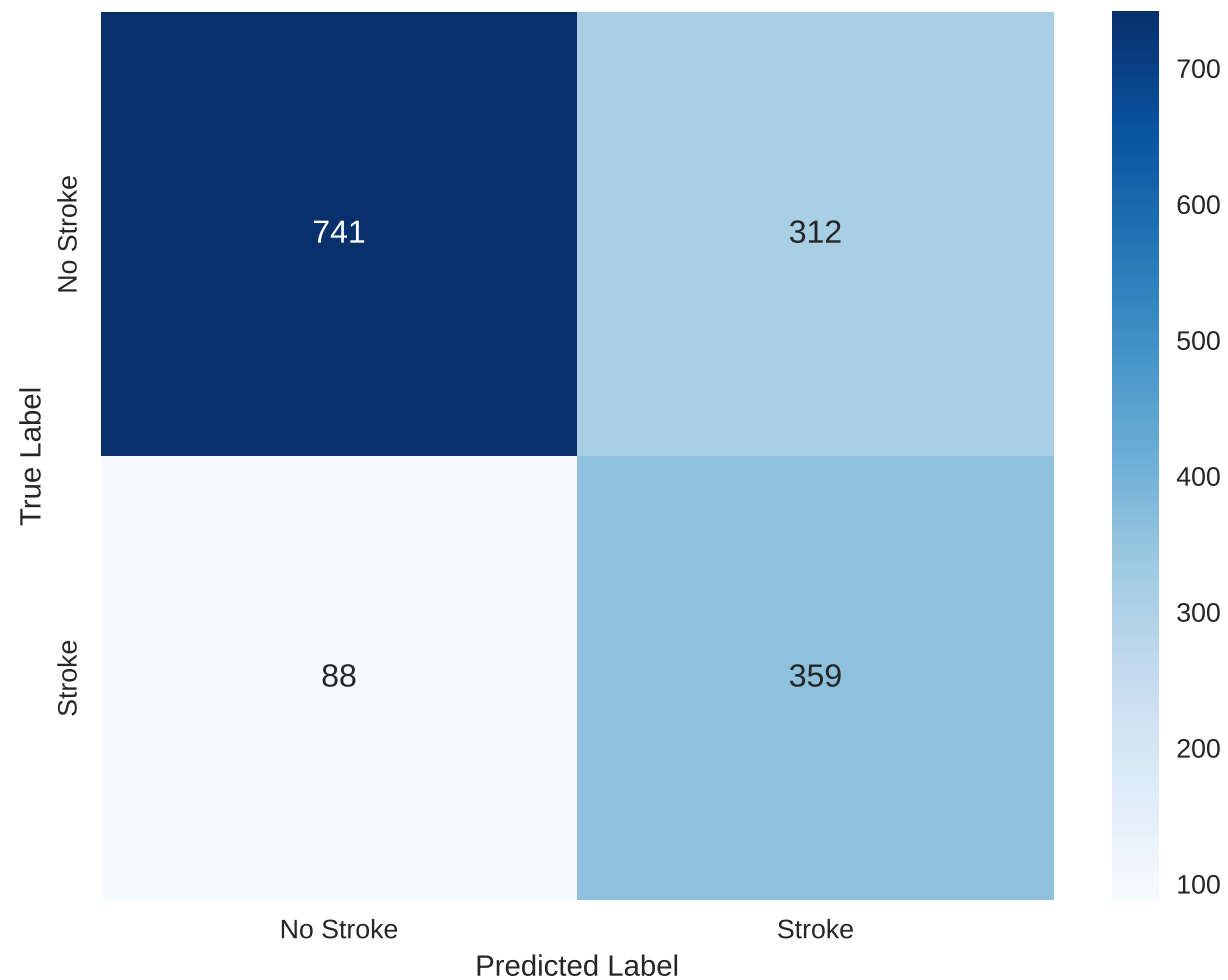
**CatBoost - ROC Curve (AUC = 0.8482)**



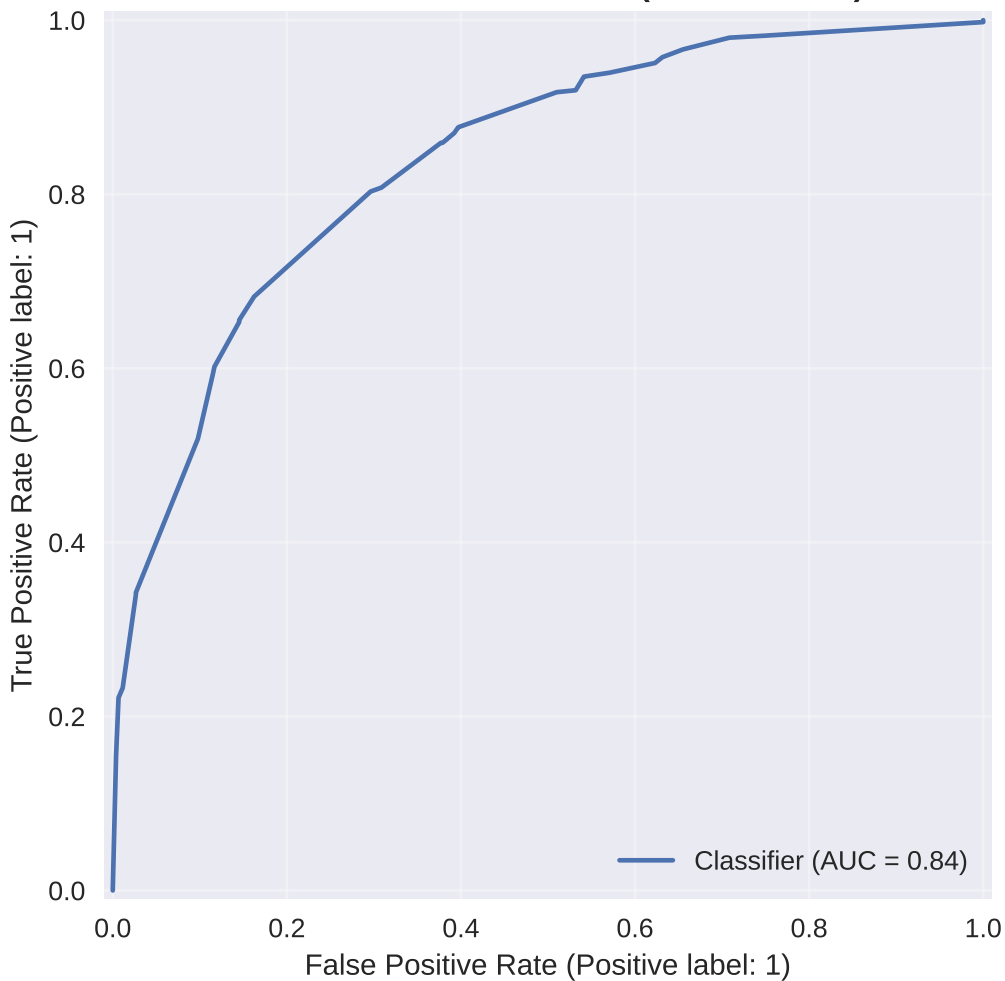
CatBoost - Precision-Recall Curve



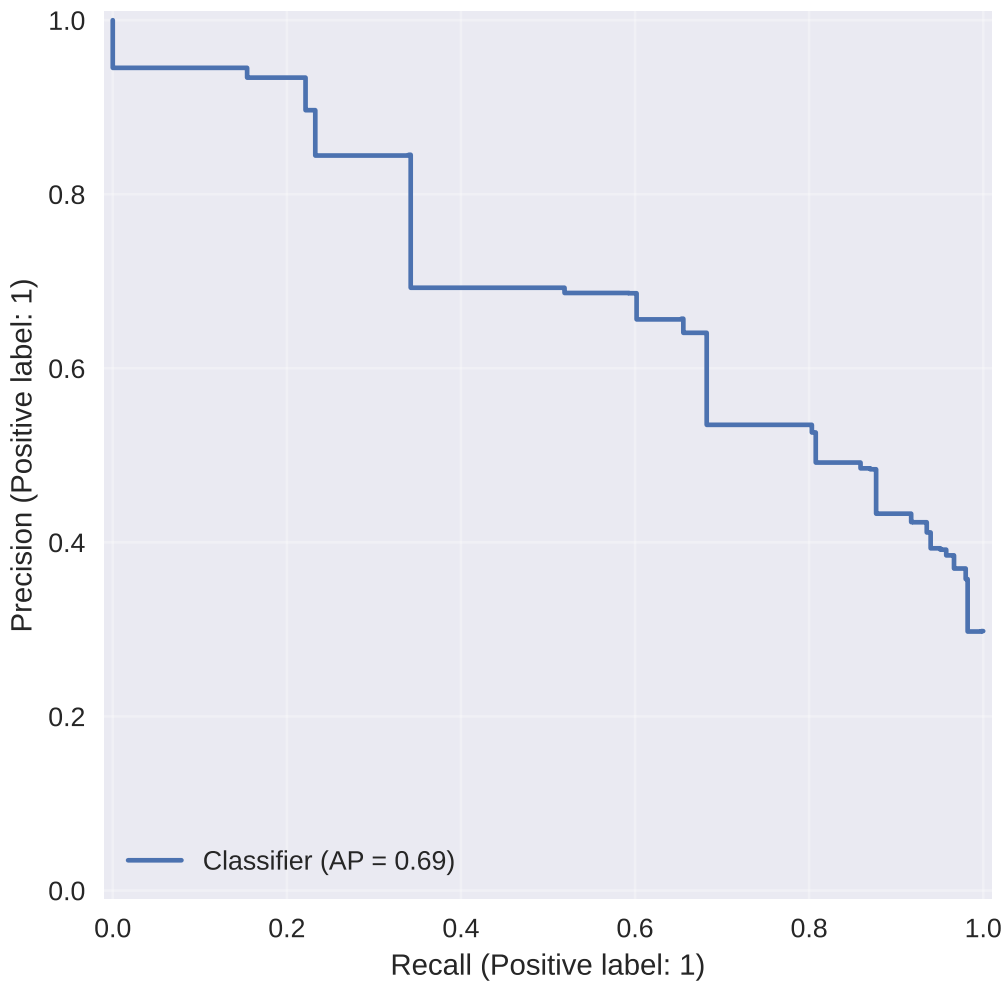
DecisionTree - Confusion Matrix



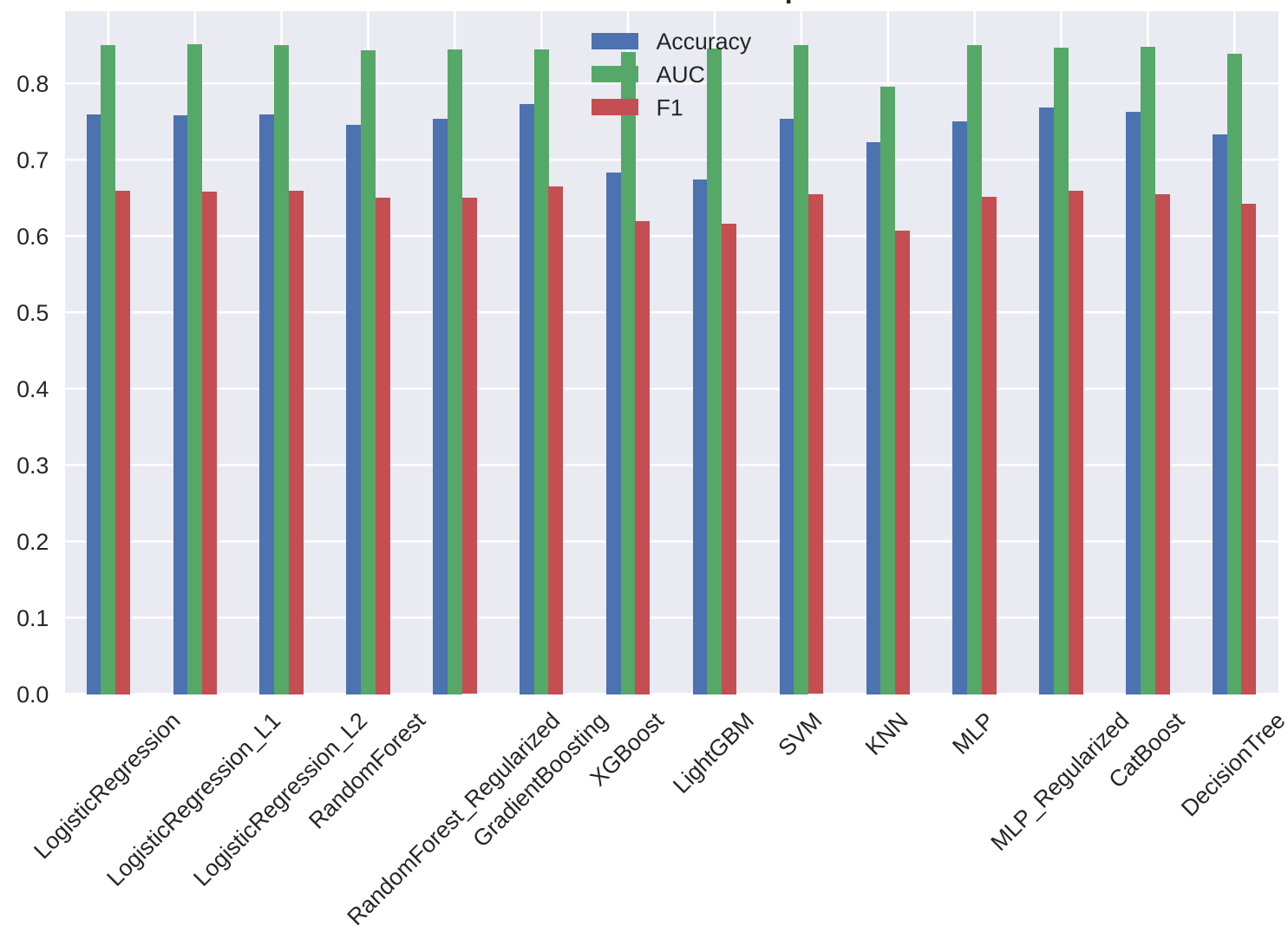
**DecisionTree - ROC Curve (AUC = 0.8387)**



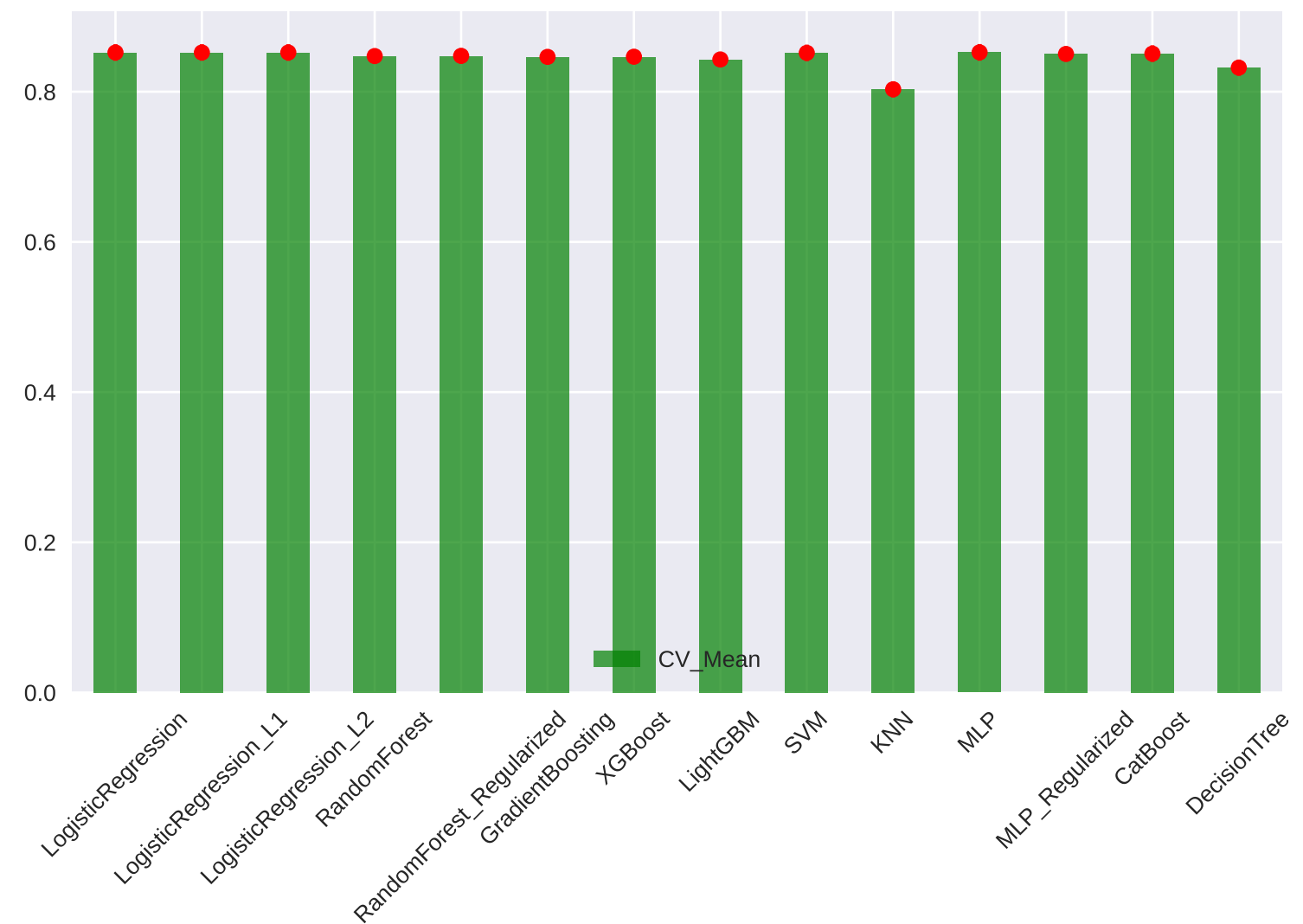
**DecisionTree - Precision-Recall Curve**



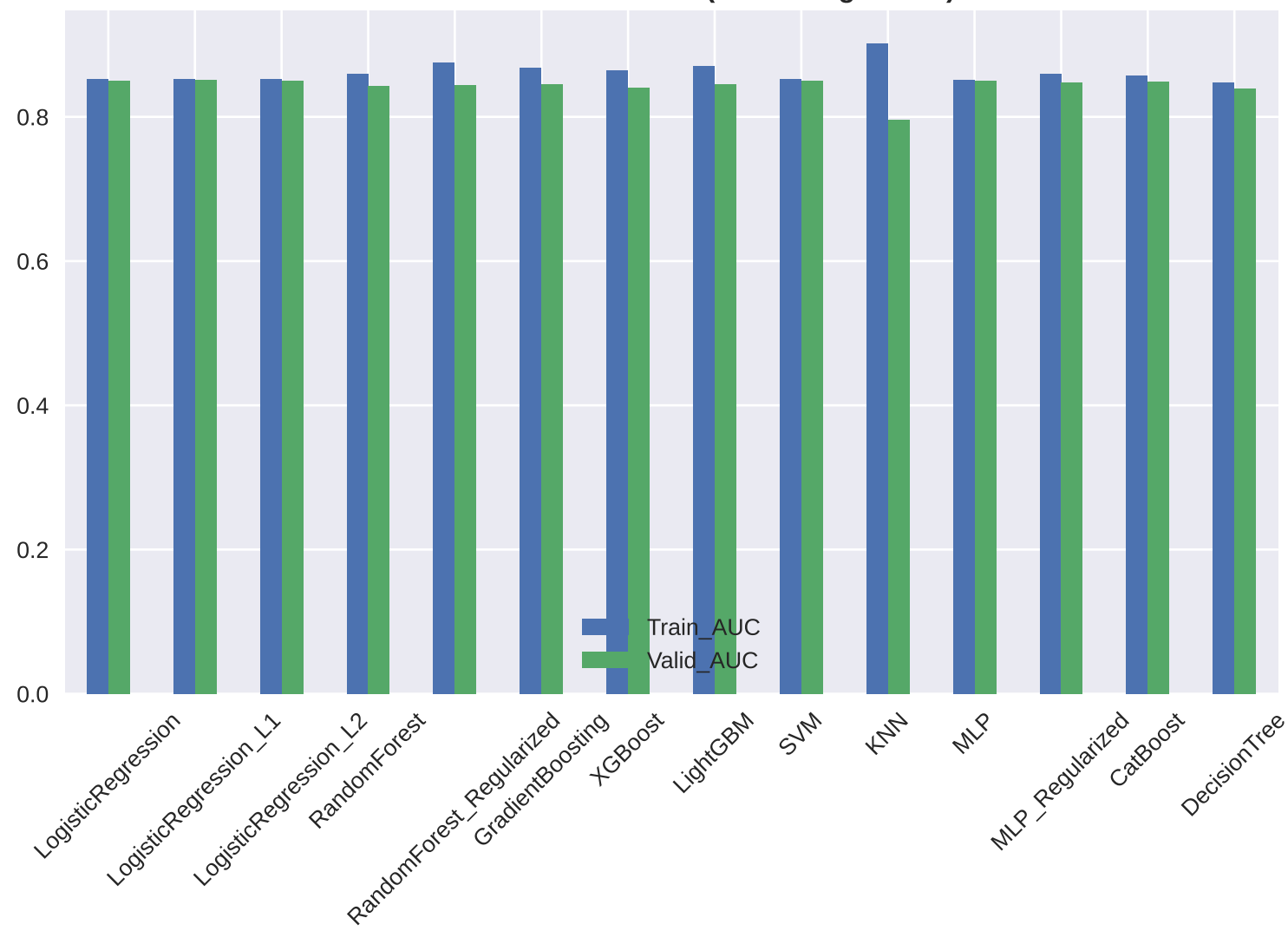
Model Performance Comparison



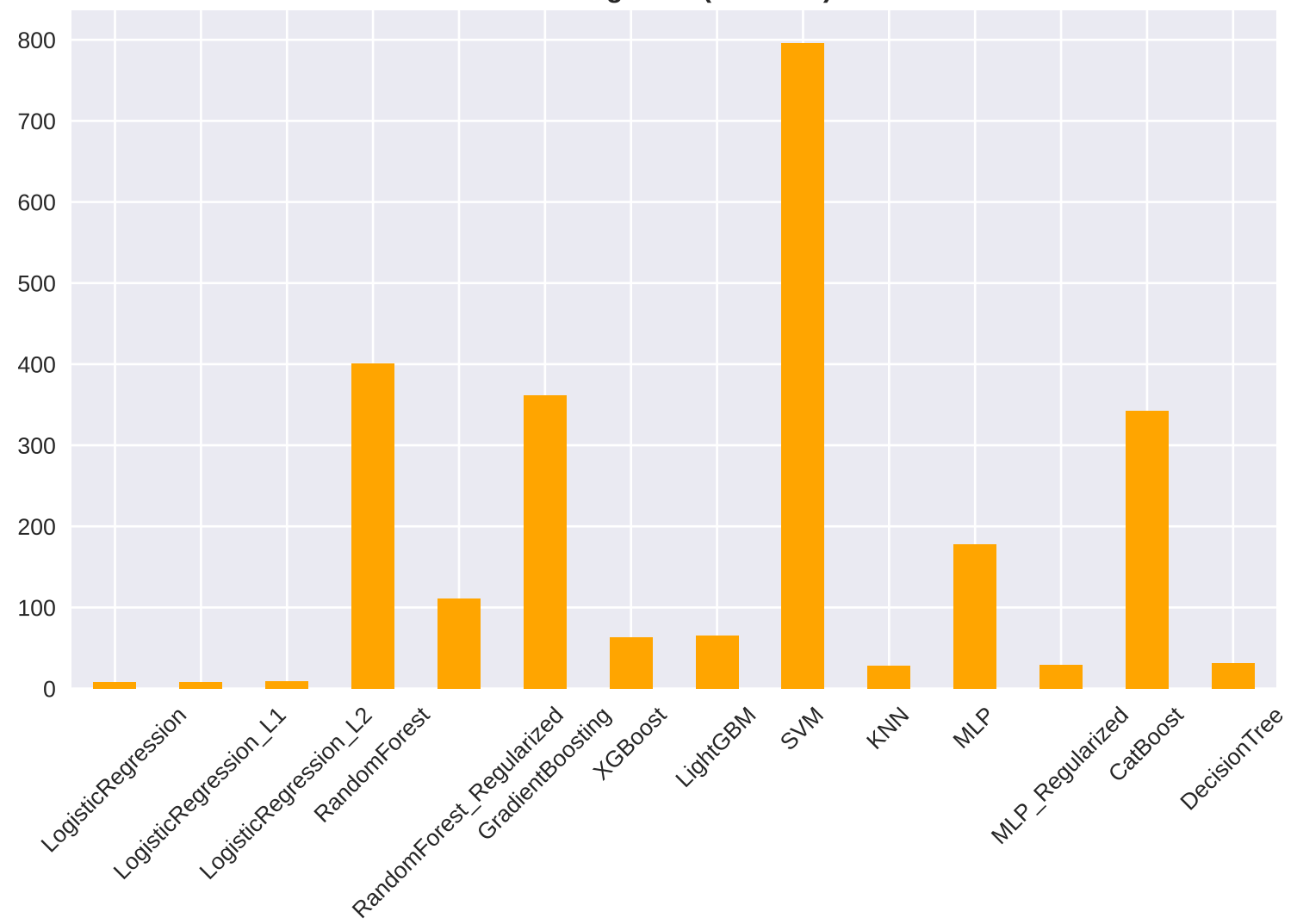
Cross-Validation AUC Scores



Train vs Validation AUC (Overfitting Check)

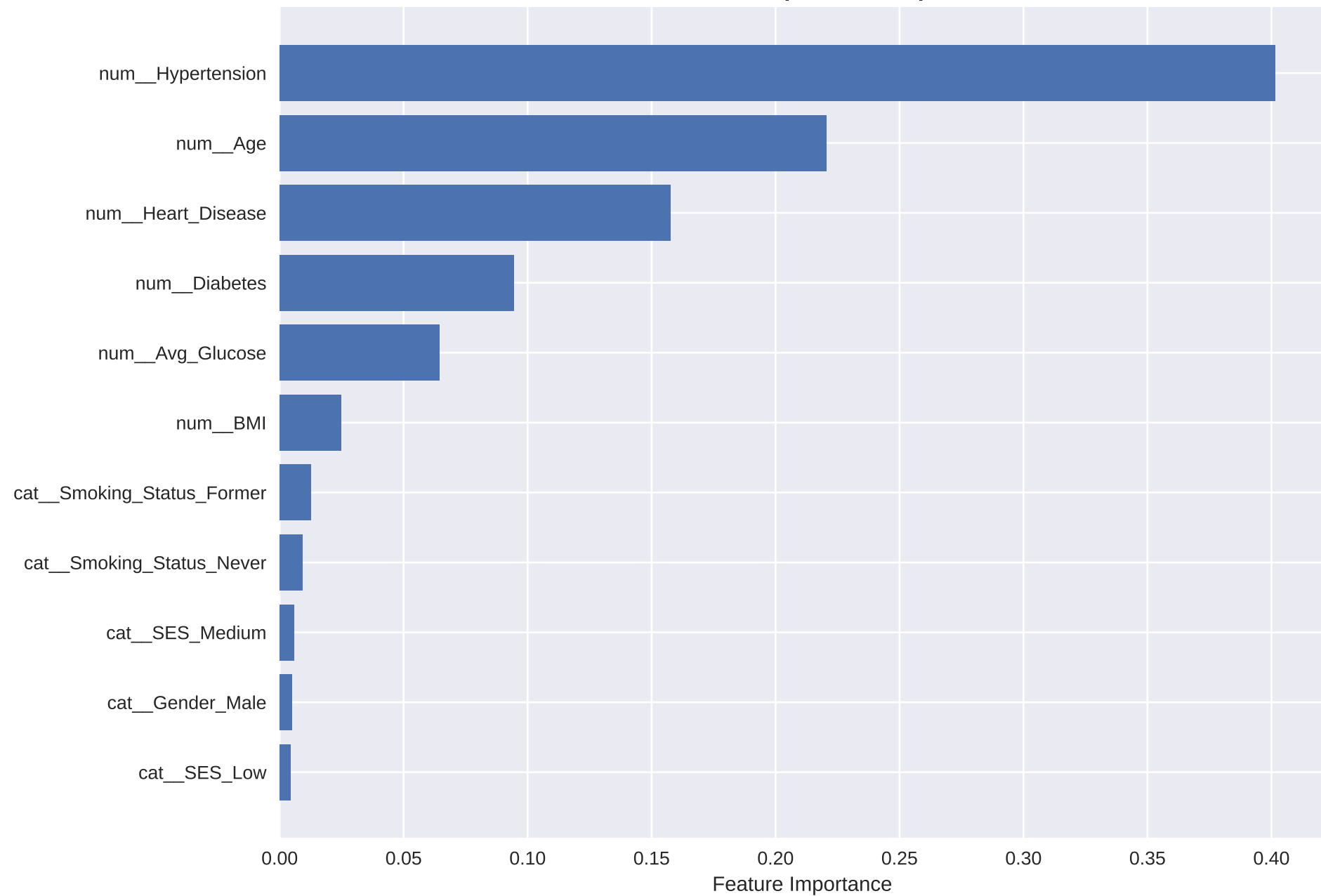


Training Time (seconds)

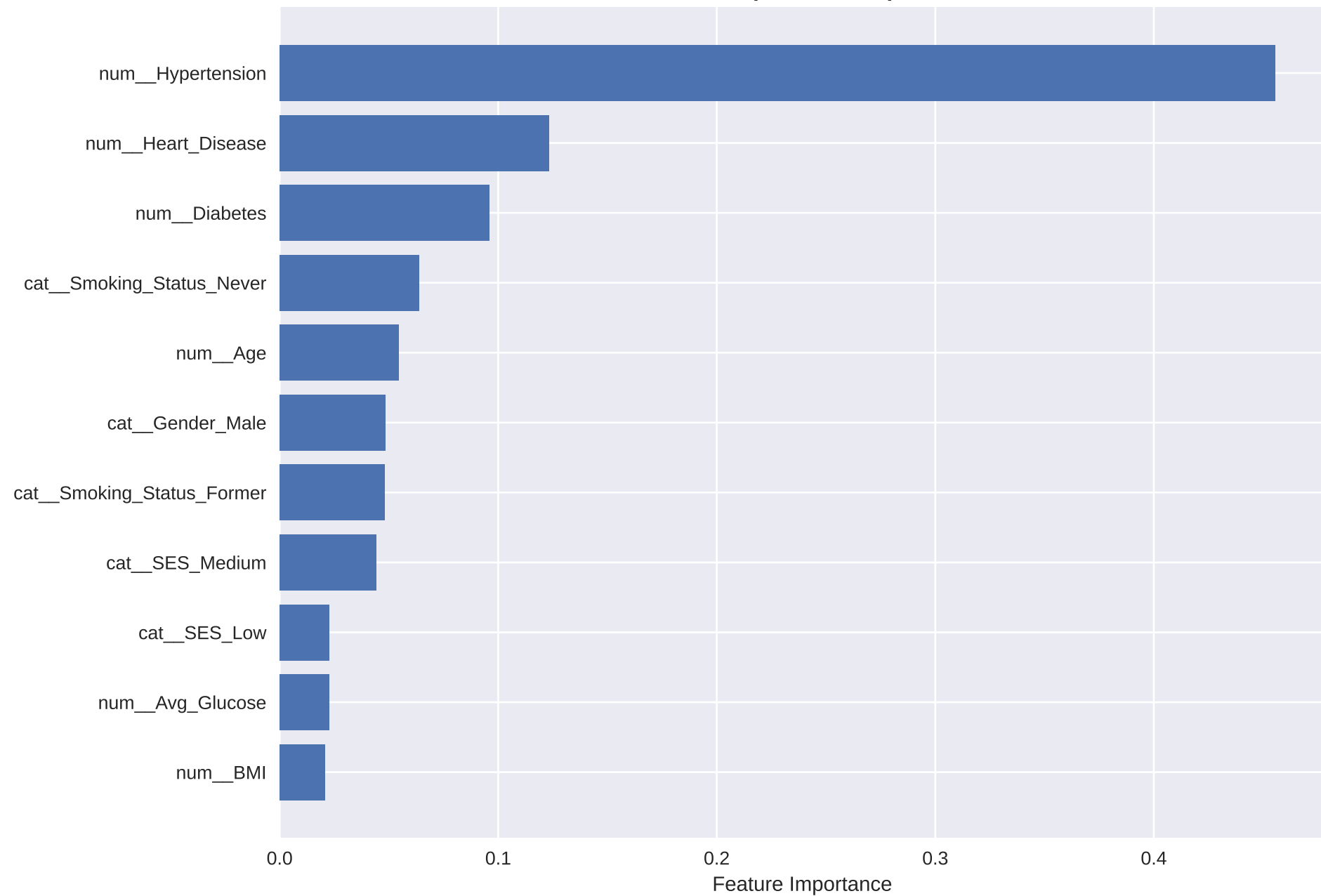




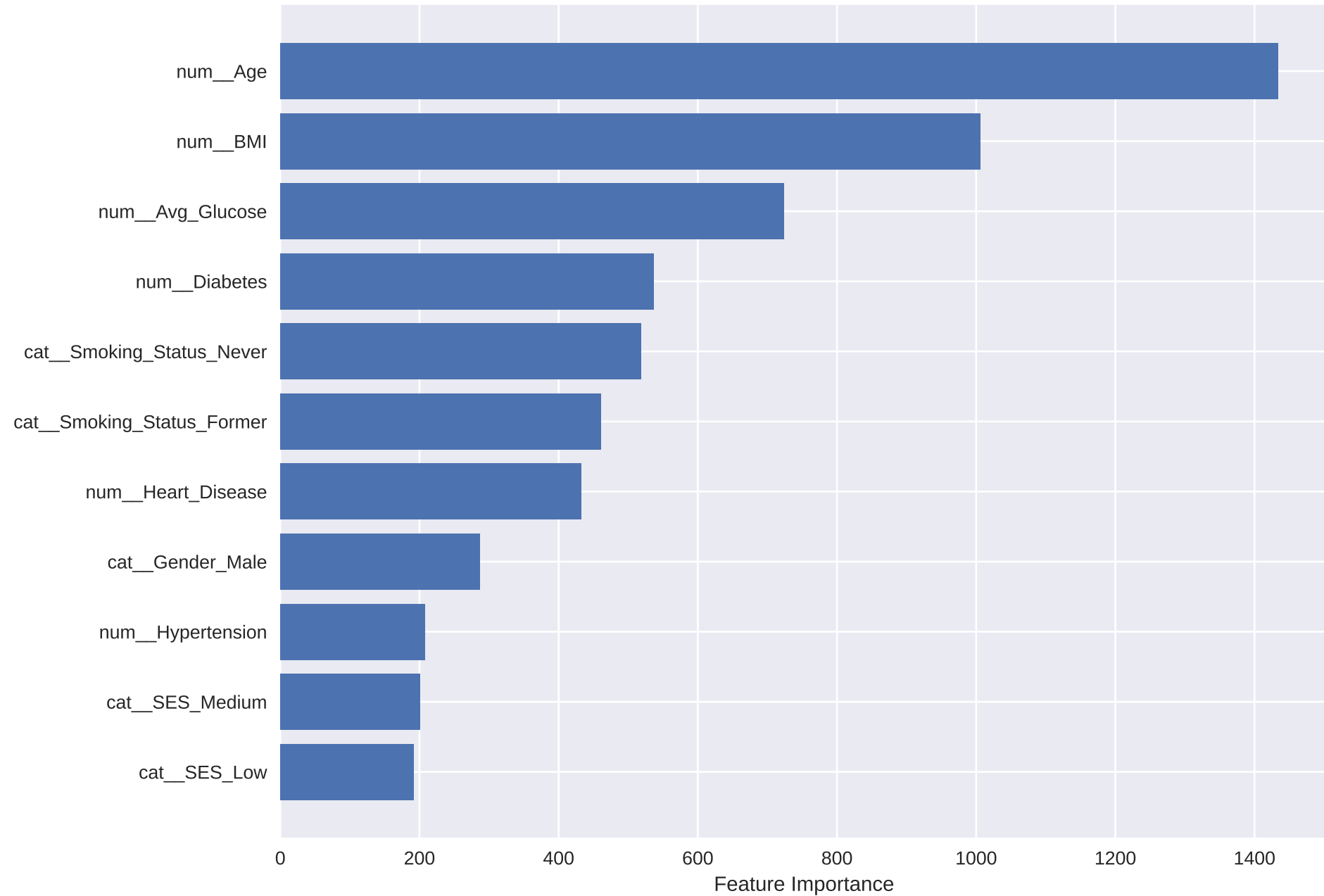
RandomForest - Top Feature Importances



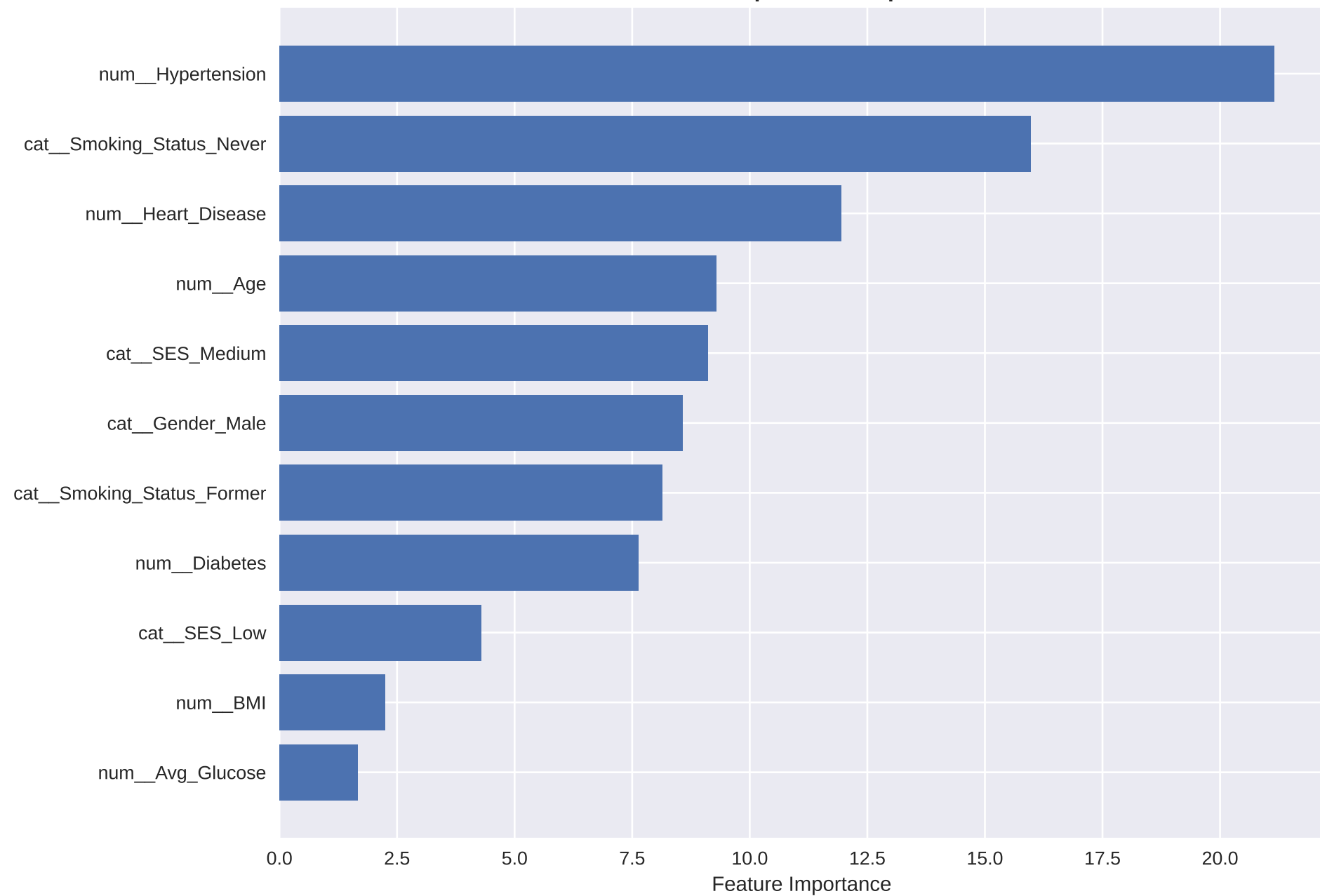
XGBoost - Top Feature Importances



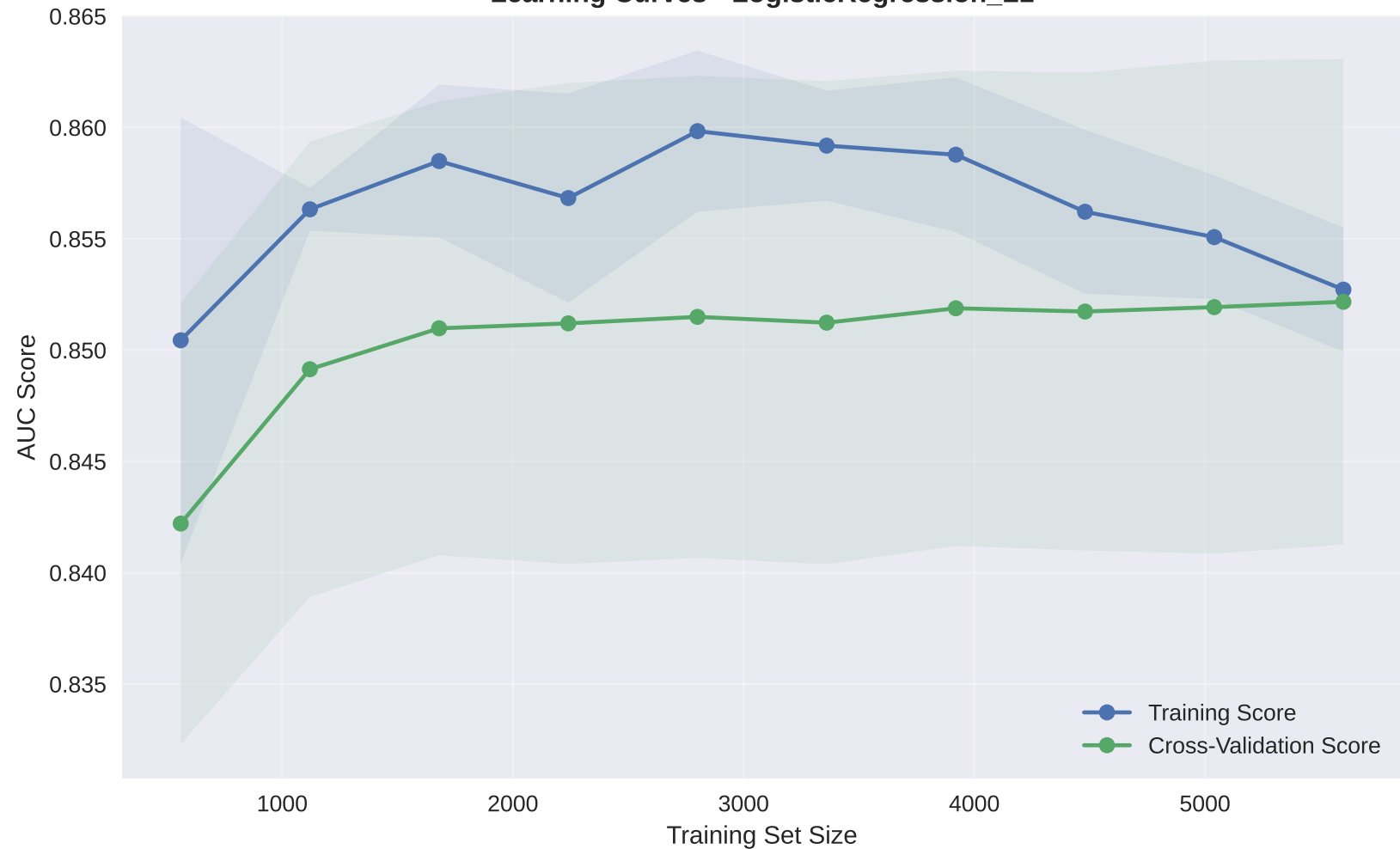
LightGBM - Top Feature Importances



CatBoost - Top Feature Importances



Learning Curves - LogisticRegression\_L1



**Final Test Confusion Matrix - LogisticRegression\_L1**

