Predicted Churned Customers For Lloyd Bank Group

Features Selection

- Age
- Login Frequency
- Gender
- Marital Status
- Income Level
- Service Usage
- Categorical Features will be in 'Label Encoding'

Train Valid Test Split

- 75-15-10 as a golden ratio for XGBoost Model
- Automatic Threshold Tuning For Calibration

EVALUATION

```
--- Model Reliability Report ---
Balanced Accuracy: 0.9557
                 precision    recall  f1-score   support

  Not Churned        0.98       0.98      0.98       424
      Churned        0.93       0.93      0.93        97

     accuracy                             0.97       521
    macro avg        0.96       0.96      0.96       521
 weighted avg        0.97       0.97      0.97       521
```
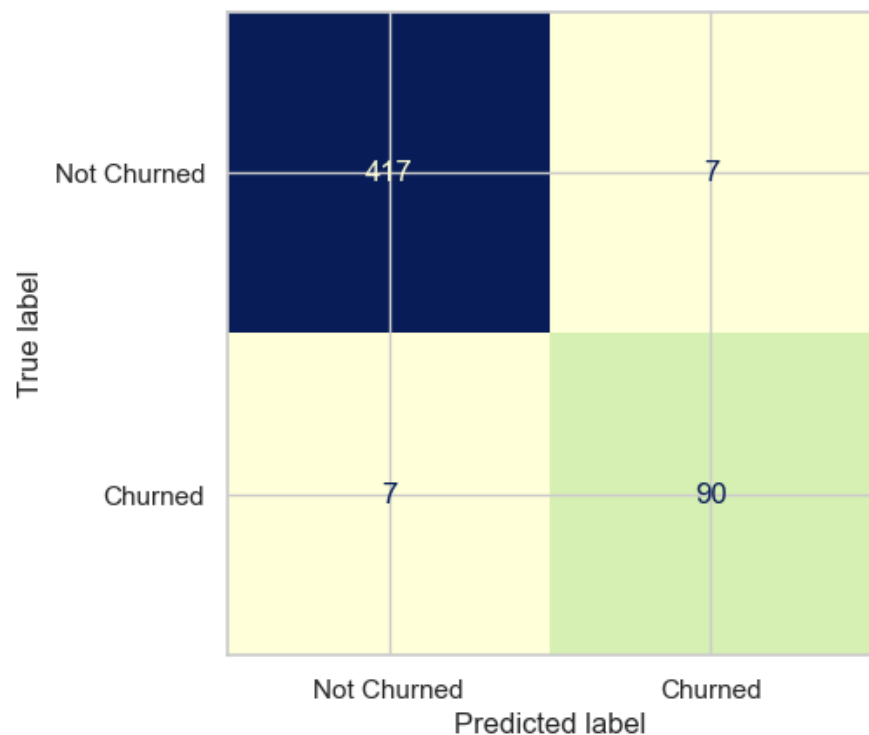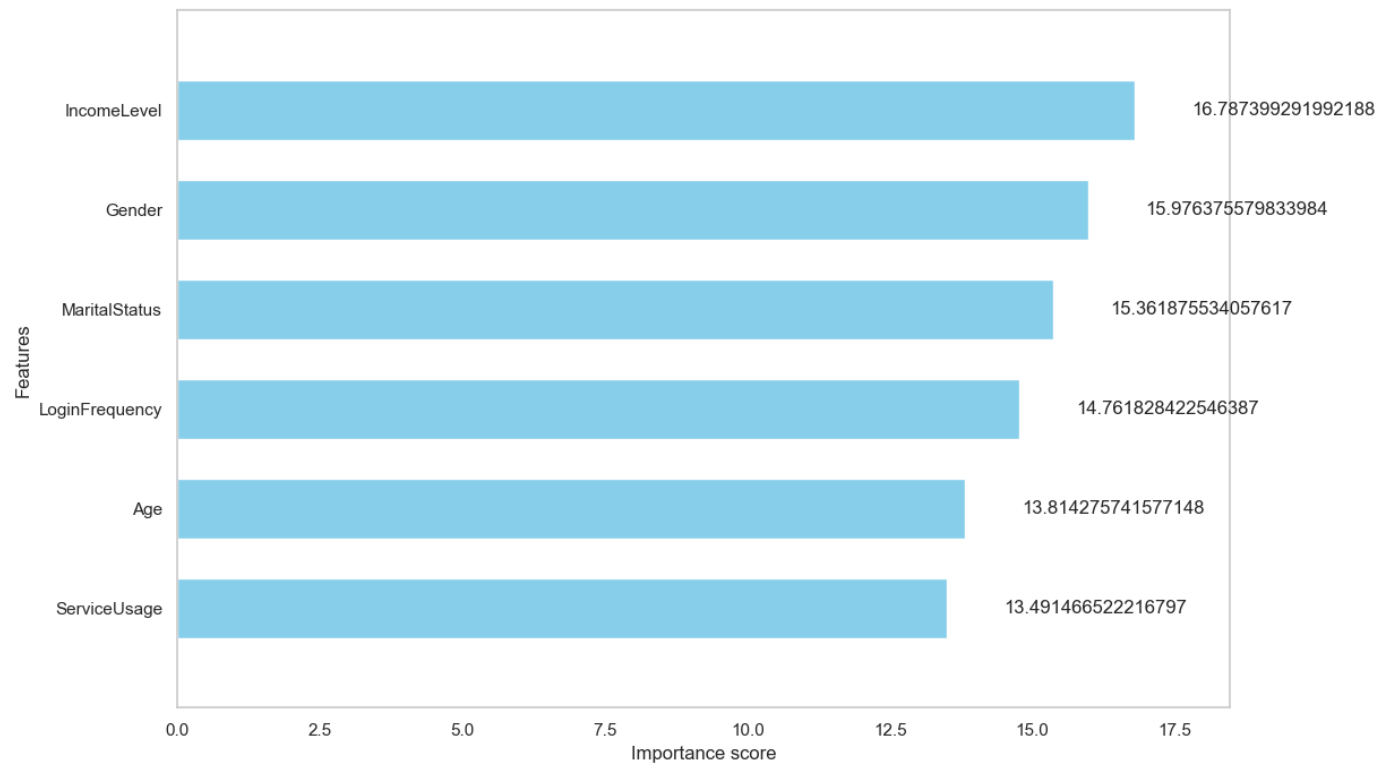
Predictive Performance Visualization
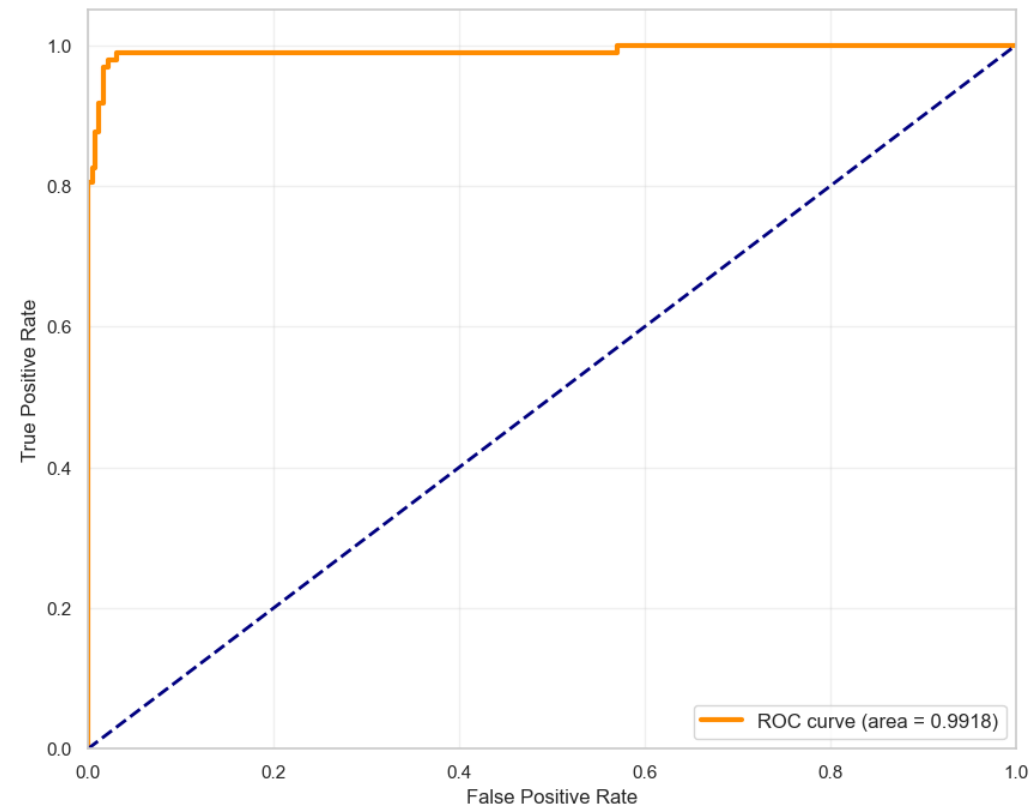

XGBoost: Confusion Matrix (Calibrated)

XGBoost: Feature Importance (Drivers of Churn)

AUC-ROC

XGBoost: Receiver Operating Characteristic (ROC)

Fidelity Check