Churn_modeling Machine Learning Model

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Base Models

The model uses stacking technique to make a meta model that consists of 3 base models:

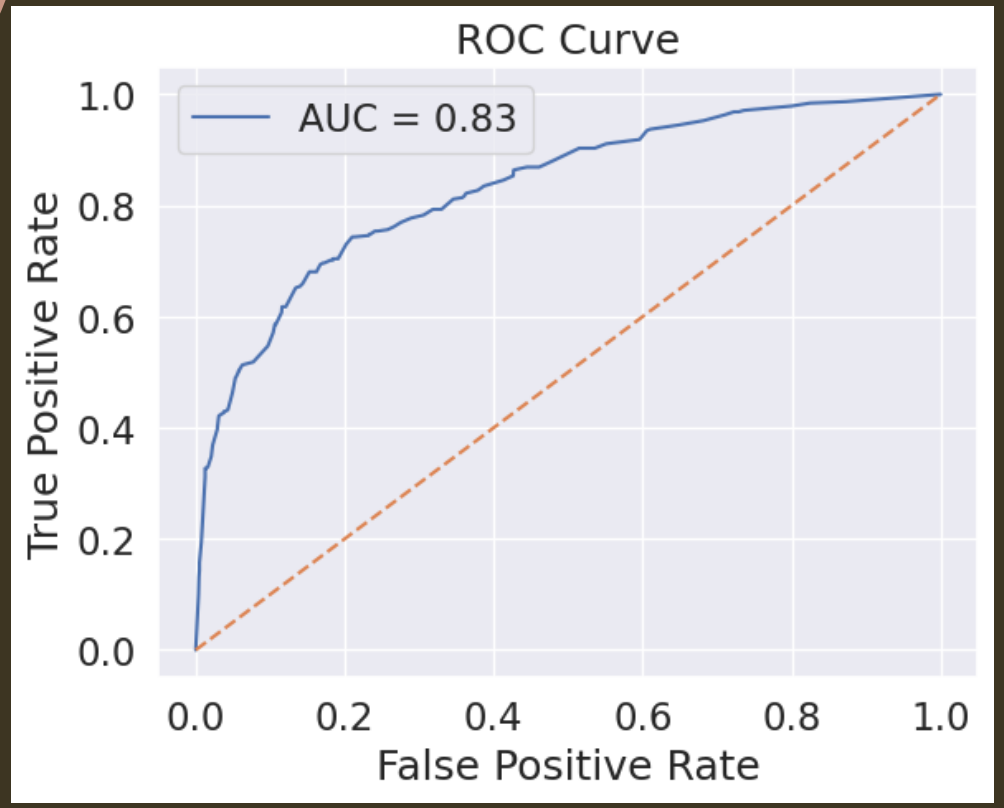
1. Decision Tree
2. Random Forest
3. Support Vector Machine

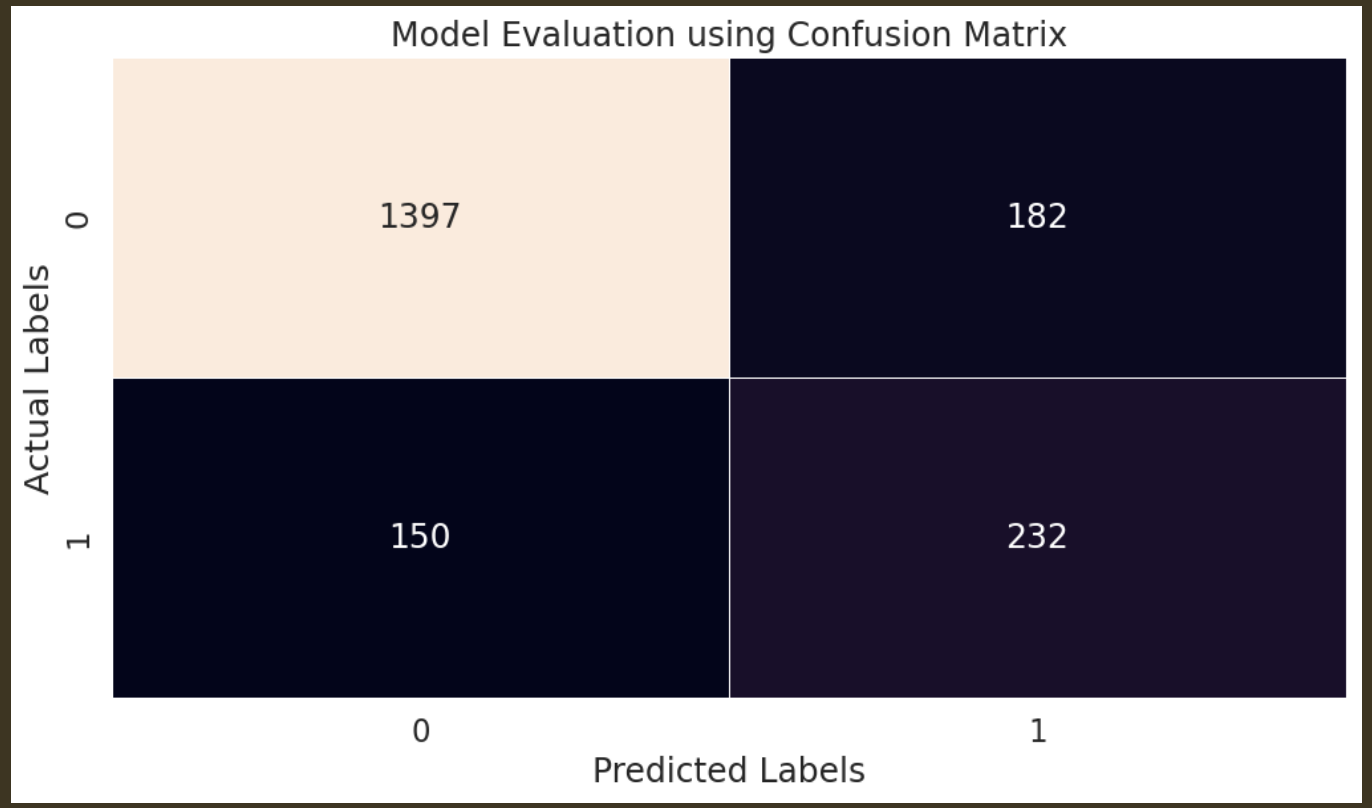
Decision Tree Model

- The model has accuracy score of 88.05% on Training Data and 83.07% on Testing Data.

- F1 Score, Recall Score, and Precision Score of the Model are all nearly the same: 0.83

Model ROC & Confusion Matrix



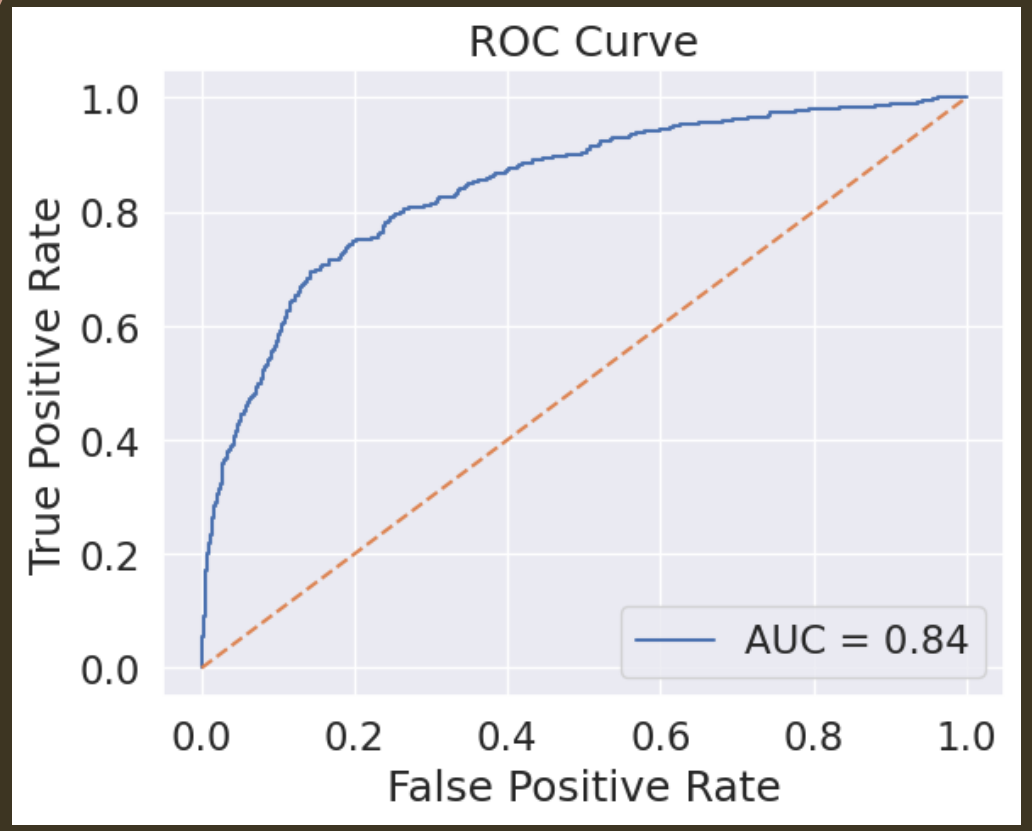


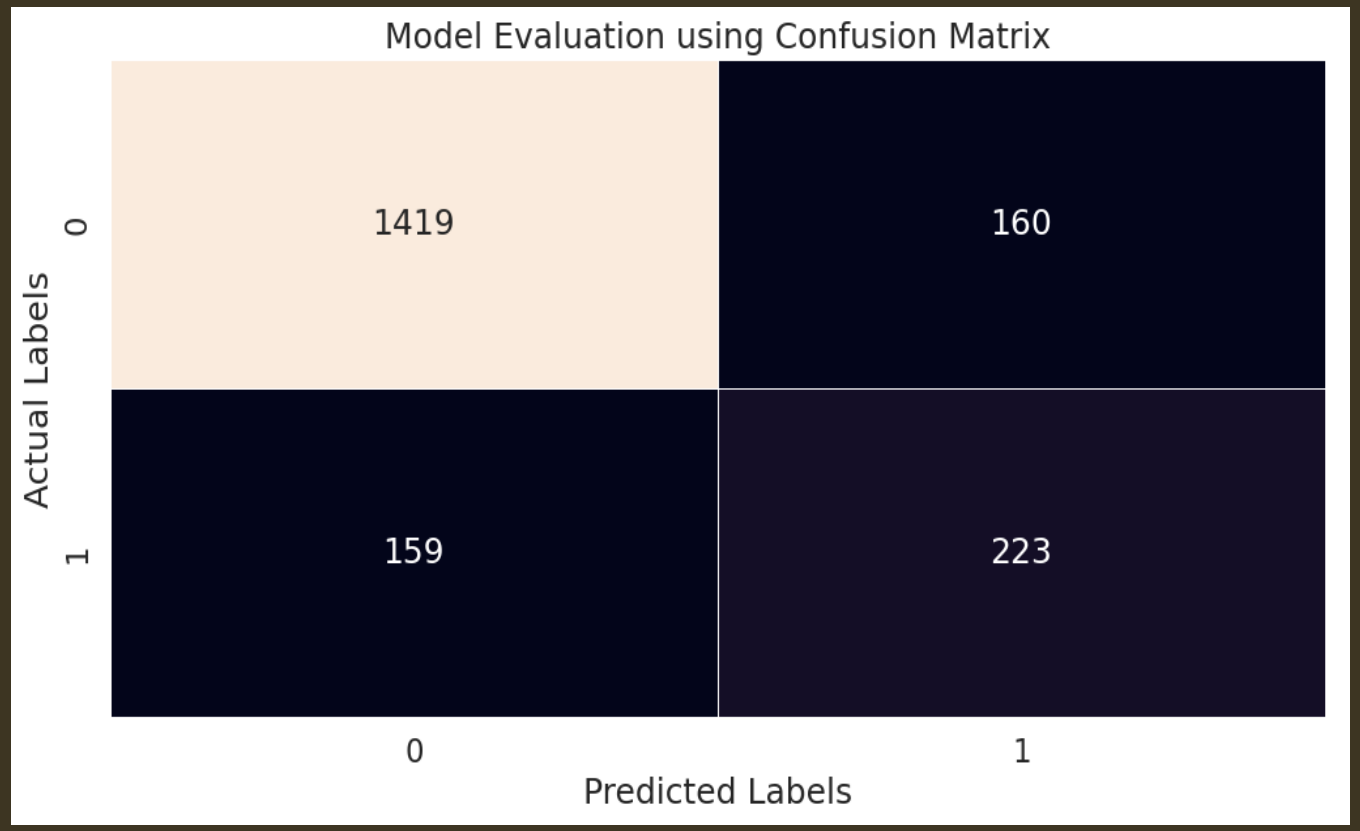
Random Forest Model

- The model has accuracy score of 89.37% on Training Data and 83.73% on Testing Data.

- F1 Score, Recall Score, and Precision Score of the Model are all nearly the same too with 0.83

Model ROC & Confusion Matrix



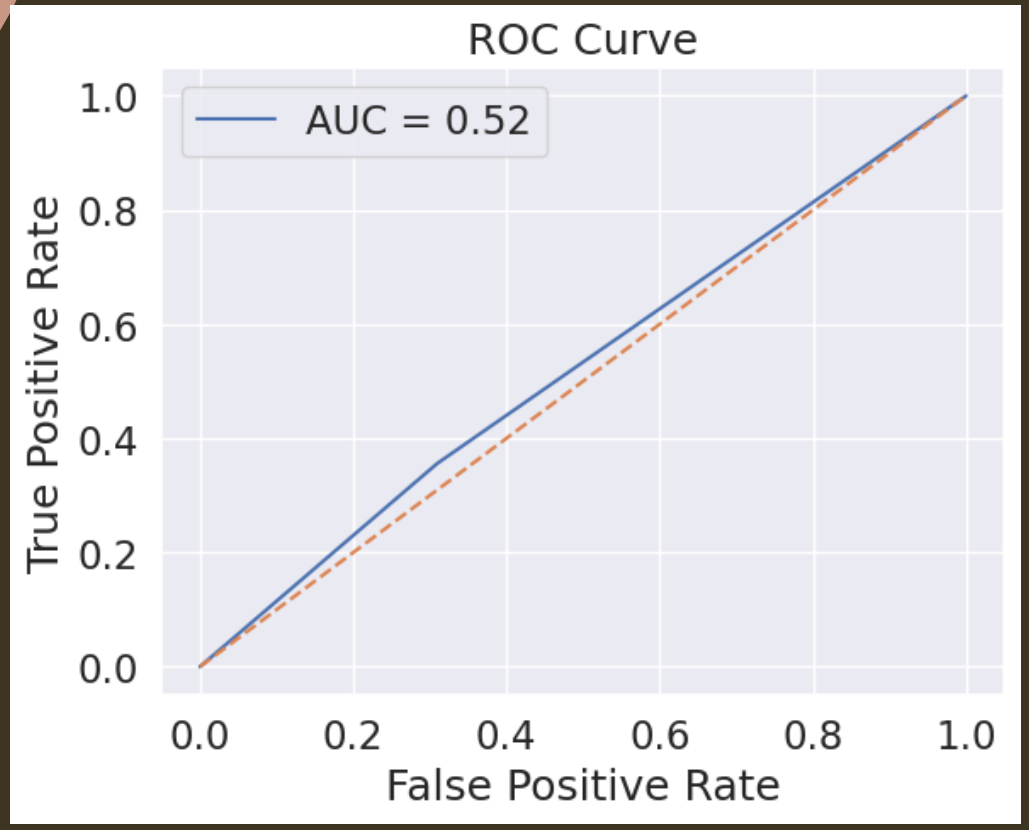


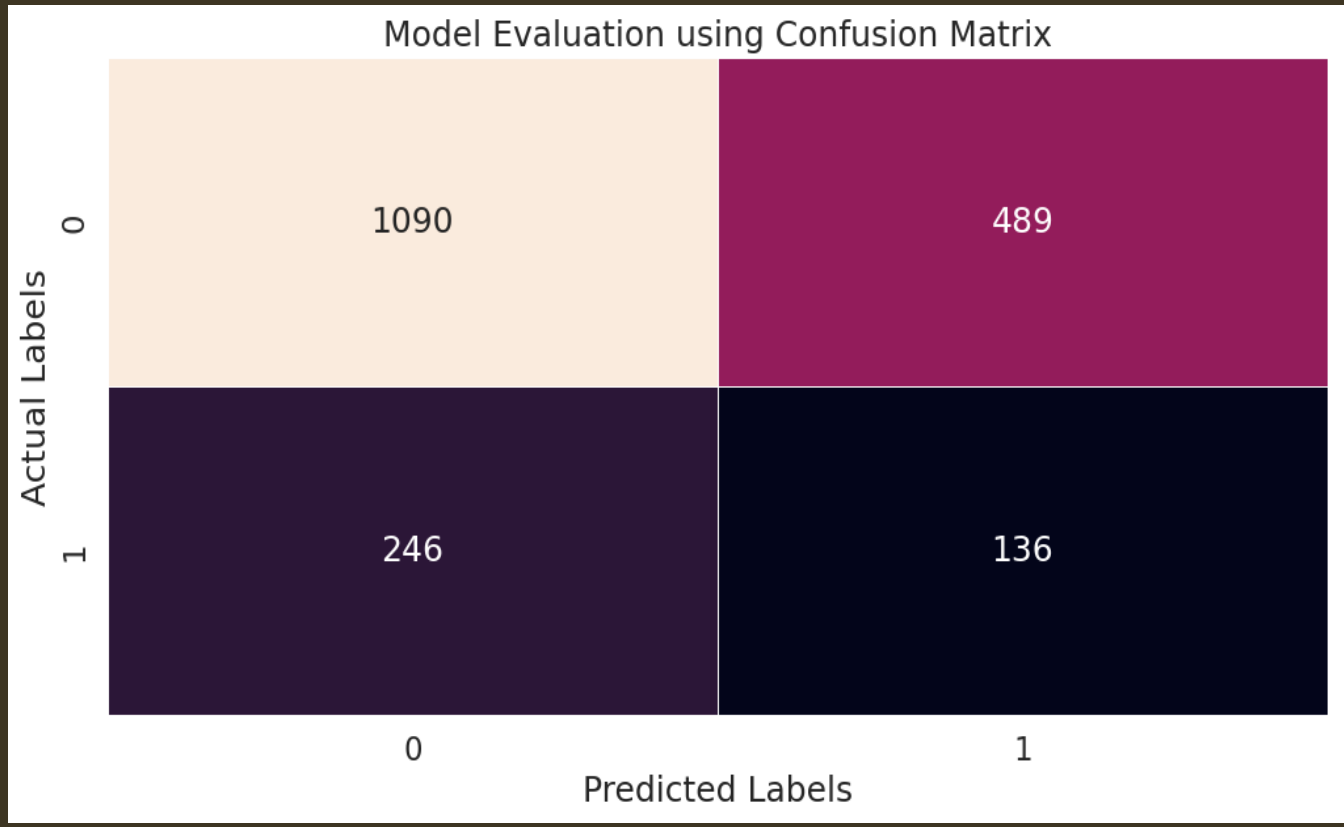
KNN Model

- The model has accuracy score of 100.0% on Training Data and 62.52% on Testing Data.

- F1 Score, Recall Score, and Precision Score of the Model are all nearly the same too with 0.62

Model ROC & Confusion Matrix





Overall Model Performance

- Accuracy Score of Model on Training Data: 91.68%
- Accuracy Score of Model on Testing Data: 78.28%
- F1, Recall Score, and Precision Score of the Model: 0.78