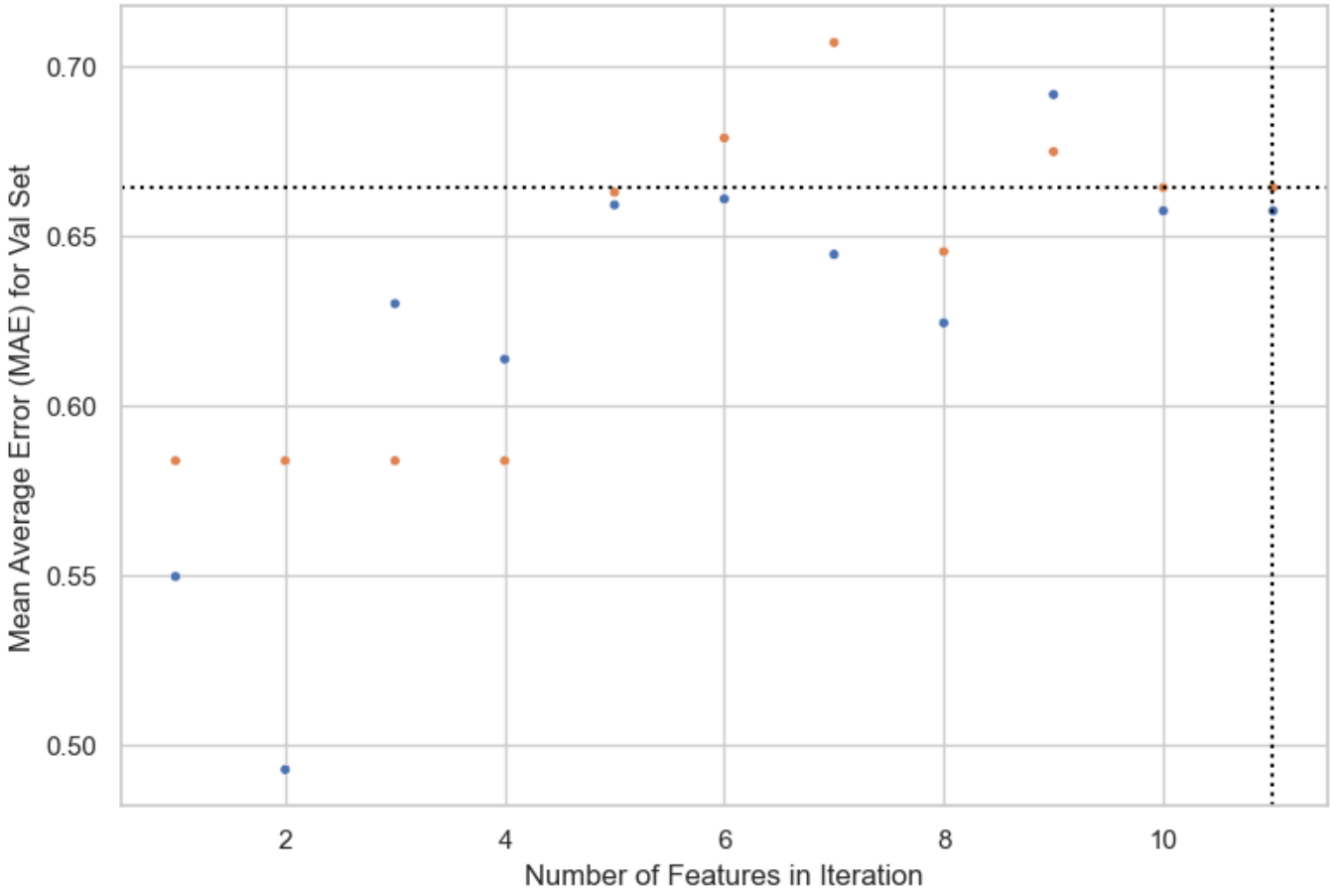
Feature Selection with Recursive Model Training

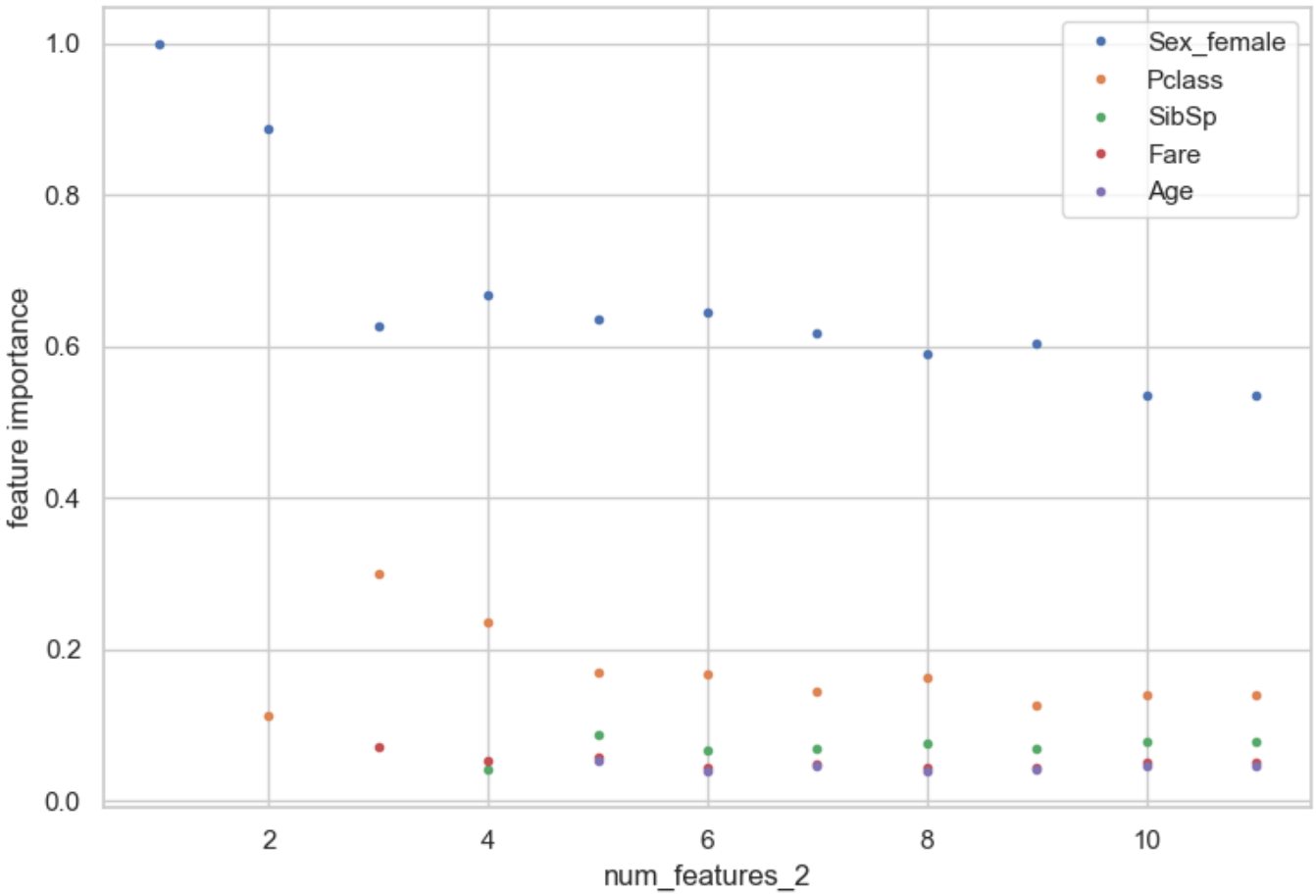
Recursive Training Results

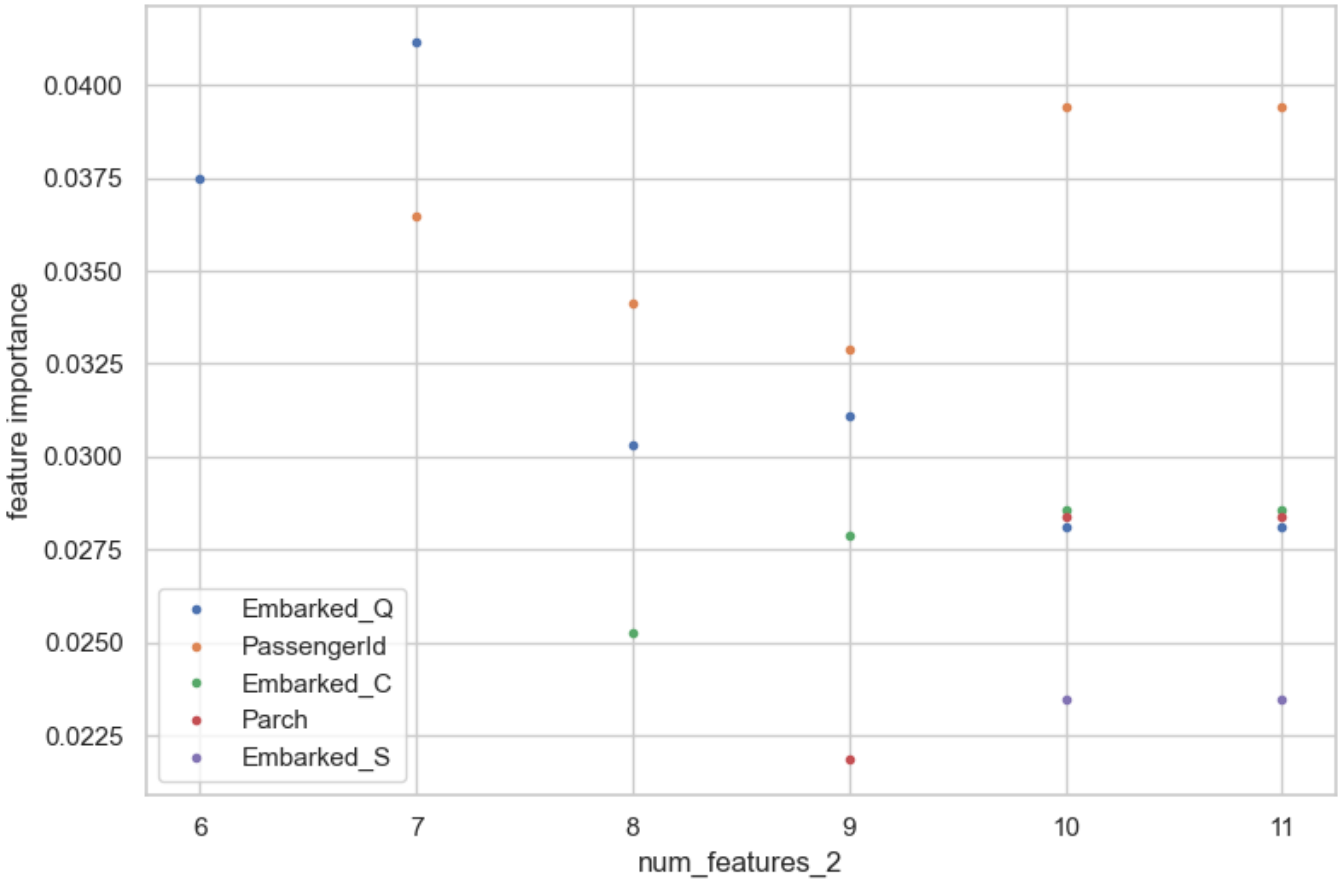


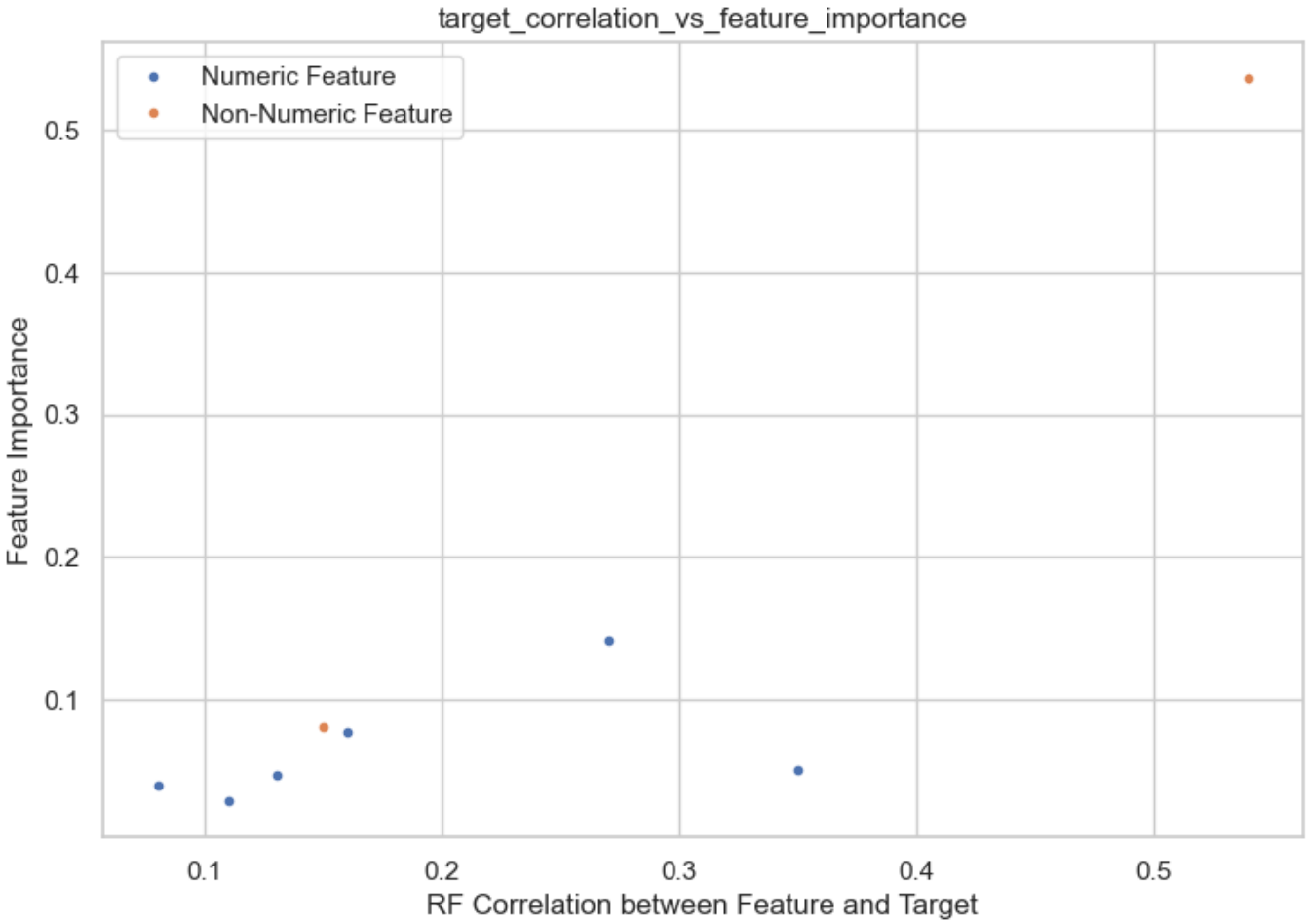
The above plot has our model metric on the y-axis, and the number of features for each model training iteration on the x-axis. In other words, each dot here represents an iteration of the recursive model training.

As the number of features is reduced, eventually the model will start to perform much more poorly. The vertical line is the location with the best value of the evaluation metric, which is an MAE of 0.66424), compared to the starting MAE of 0.66424.

The model training started with 11 features (after one-hot encoding any categorical features), and achieved the best model training results with 11 features.


Sex_female
Pclass
SibSp
Fare
Age
feature importance
num_features_2
1.0
0.8
0.6
0.4
0.2
0.0
2
4
6
8
10


Embarked_Q
PassengerId
Embarked_C
Parch
Embarked_S
feature importance
num_features_2
0.0400
0.0375
0.0350
0.0325
0.0300
0.0275
0.0250
0.0225
6
7
8
9
10
11


target_correlation_vs_feature_importance
Numeric Feature
Non-Numeric Feature
Feature Importance
0.5
0.4
0.3
0.2
0.1
0.1
0.2
0.3
0.4
0.5
RF Correlation between Feature and Target