Banking Dataset - Marketing Targets

"Model Comparison" Results

by: Jose Ivan Alejandro Cordero

Contents

Model Comparison

Champion	Name	Algorithm Name	KS (Youden)
true	First Forest Marketing Targets	Forest	0.7355
false	Decision Tree (1)	Decision Tree	0.3698
false	Logistic Regression	Logistic Regression	0.3254
false	Neural Network	Neural Network	0
false	Forest (1)	Forest	0.7343

Accuracy	Average Squared Error	Area Under ROC	Cumulative Lift
0.9055	0.0633	0.9309	5.1859
0.9027	0.0819	0.6869	4.1926
0.8870	0.1010	0.7001	3.3333
0.8830	0.2428	0.5000	1.0012
0.9065	0.0632	0.9305	5.2930

Cumulative Captured Response Percentage	Cutoff	Data Role	Depth
51.8589	0.5000	VALIDATE	10
41.9256	0.5000	VALIDATE	10
33.3333	0.5000	VALIDATE	10
10.0118	0.5000	VALIDATE	10
52.9301	0.5000	VALIDATE	10

F1 Score	False Discovery Rate	False Positive Rate	Gain
0.4937	0.3386	0.0267	4.1859
0.4550	0.3401	0.0237	3.1926
0.0934	0.2404	0.0021	2.3333

F1 Score	False Discovery Rate	False Positive Rate	Gain
0		0	0.0012
0.5024	0.3340	0.0268	4.2930

Gini Coefficient	ROC Separation	Lift	Misclassification Rate
0.8618	0.3671	4.3478	0.0945
0.3739	0.3235	2.6031	0.0973
0.4001	0.0477	1.7265	0.1130
0	0	1.0012	0.1170
0.8610	0.3765	4.4739	0.0935

Multi-Class Log Loss	Misclassification at Cutoff	Misclassification Rate (Event)	Number of Observations
0.2044	0.0945	0.0945	13,564
0.3013	0.0973	0.0973	13,564
0.4057	0.1130	0.1130	13,564
0.6787	0.1170	0.1170	13,564
0.2045	0.0935	0.0935	13,564

Root Average Squared Error	Captured Response Percentage
0.2515	21.7391
0.2862	13.0157
0.3178	8.6326
0.4927	5.0059
0.2514	22.3693

Properties

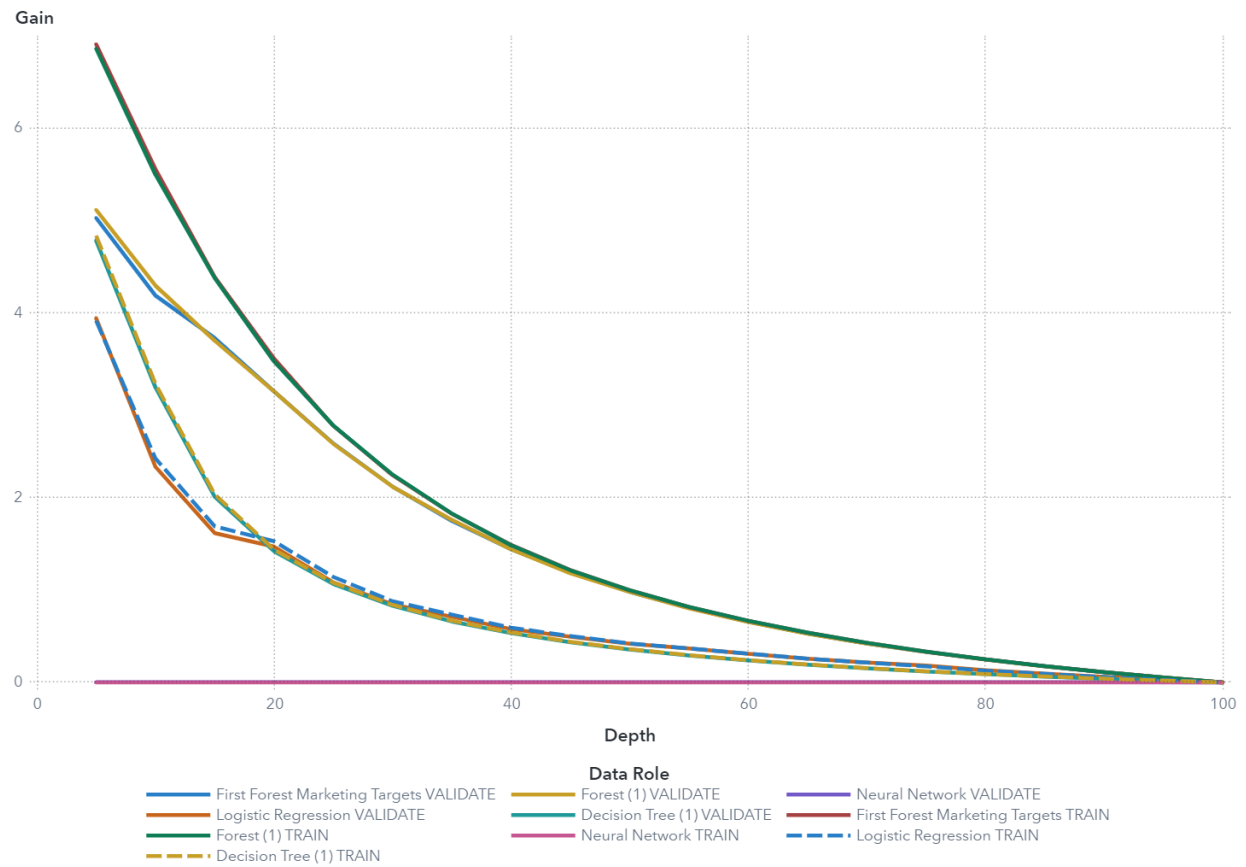| Property Name	Property Value
selectionCriteriaClass	Kolmogorov-Smirnov statistic (KS)
selectionCriteriaInterval	Average squared error
selectionTable	Validate
selectionDepth	10
cutoff	0.50

Cumulative Lift

Cumulative Lift

Depth

Data Role

- First Forest Marketing Targets VALIDATE
- Logistic Regression VALIDATE
- Forest (1) TRAIN
- Decision Tree (1) TRAIN
- Forest (1) VALIDATE
- Decision Tree (1) VALIDATE
- Neural Network TRAIN
- Neural Network VALIDATE
- First Forest Marketing Targets TRAIN
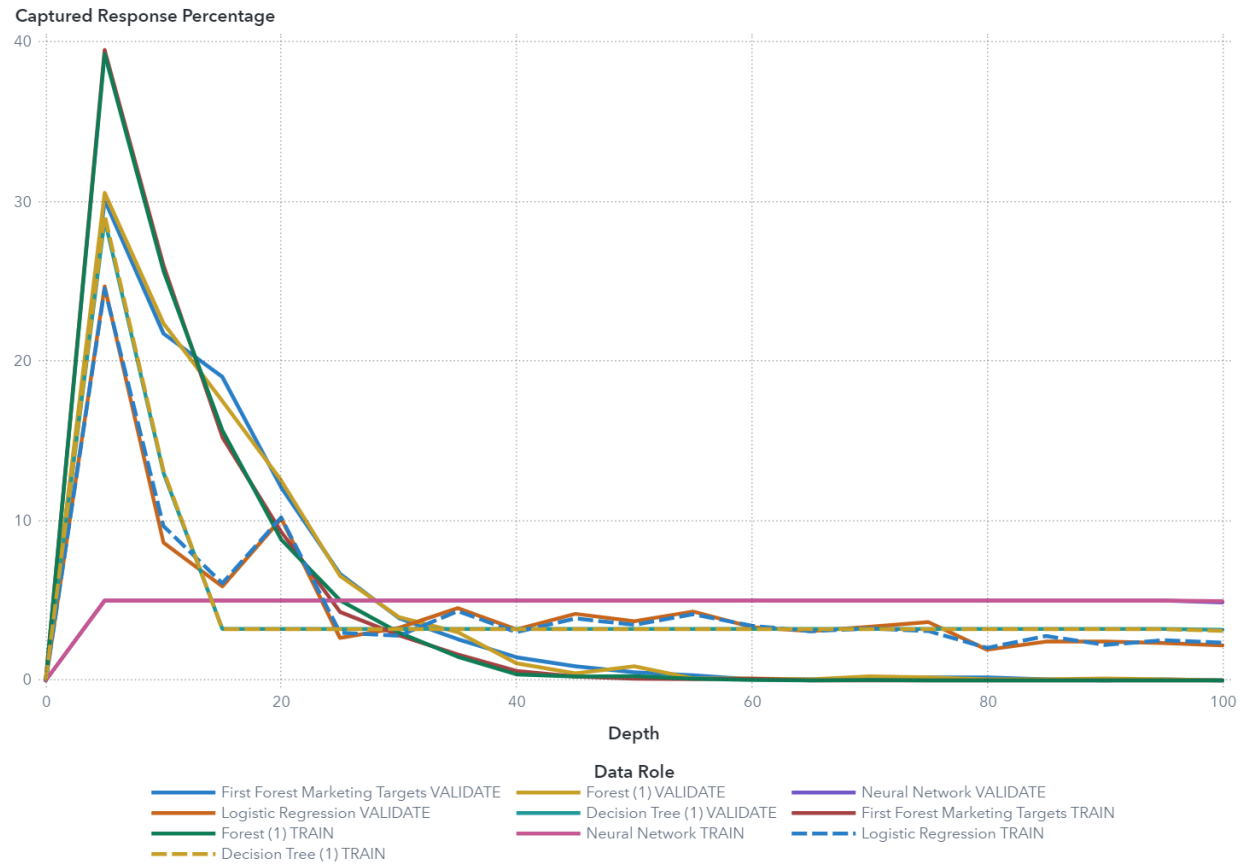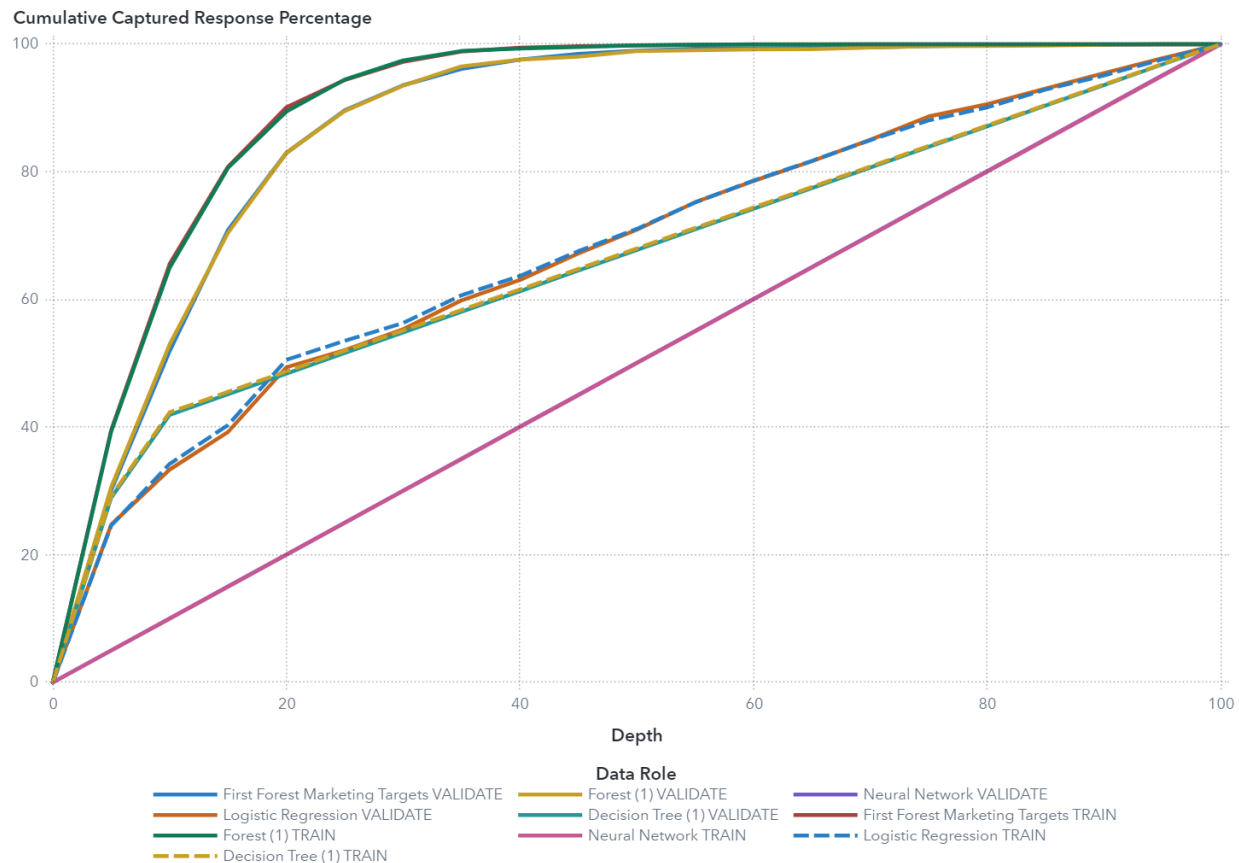- Logistic Regression TRAIN

Lift

Gain

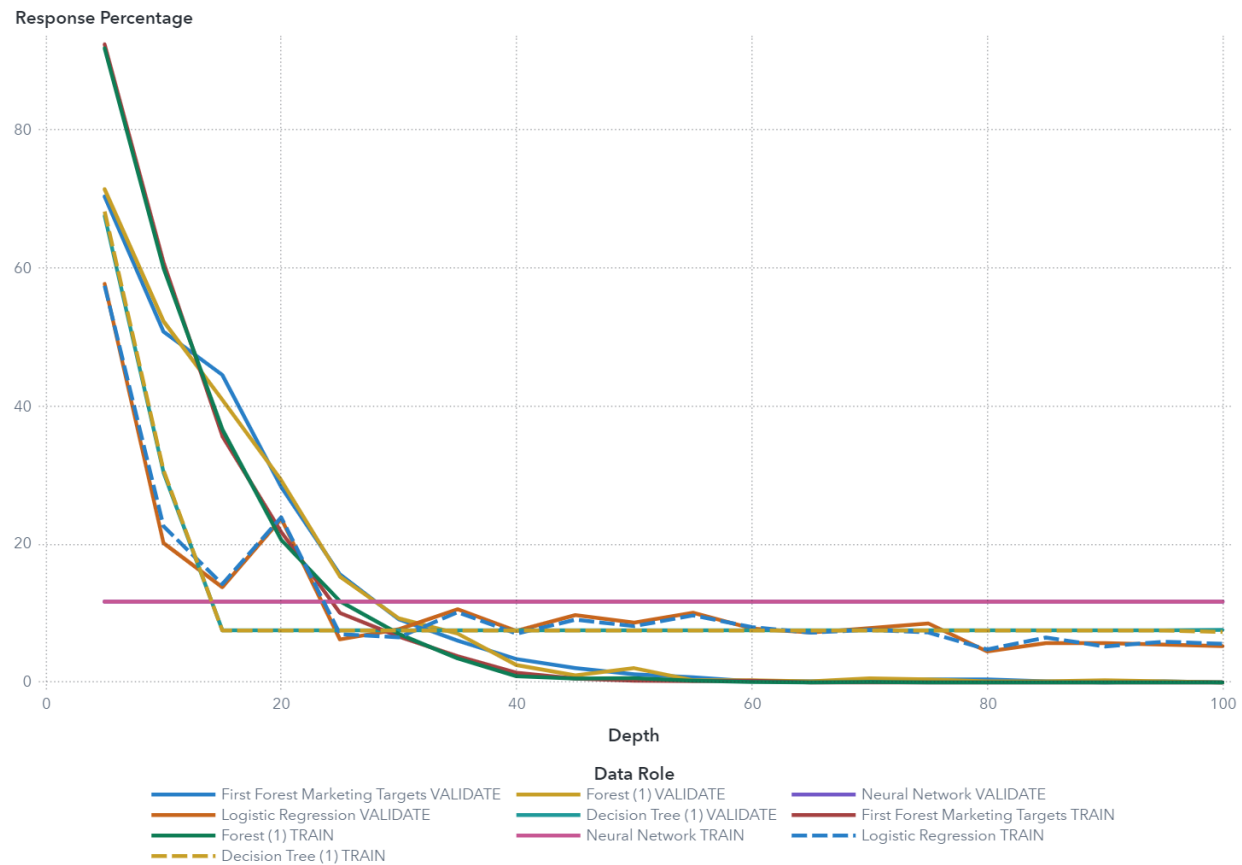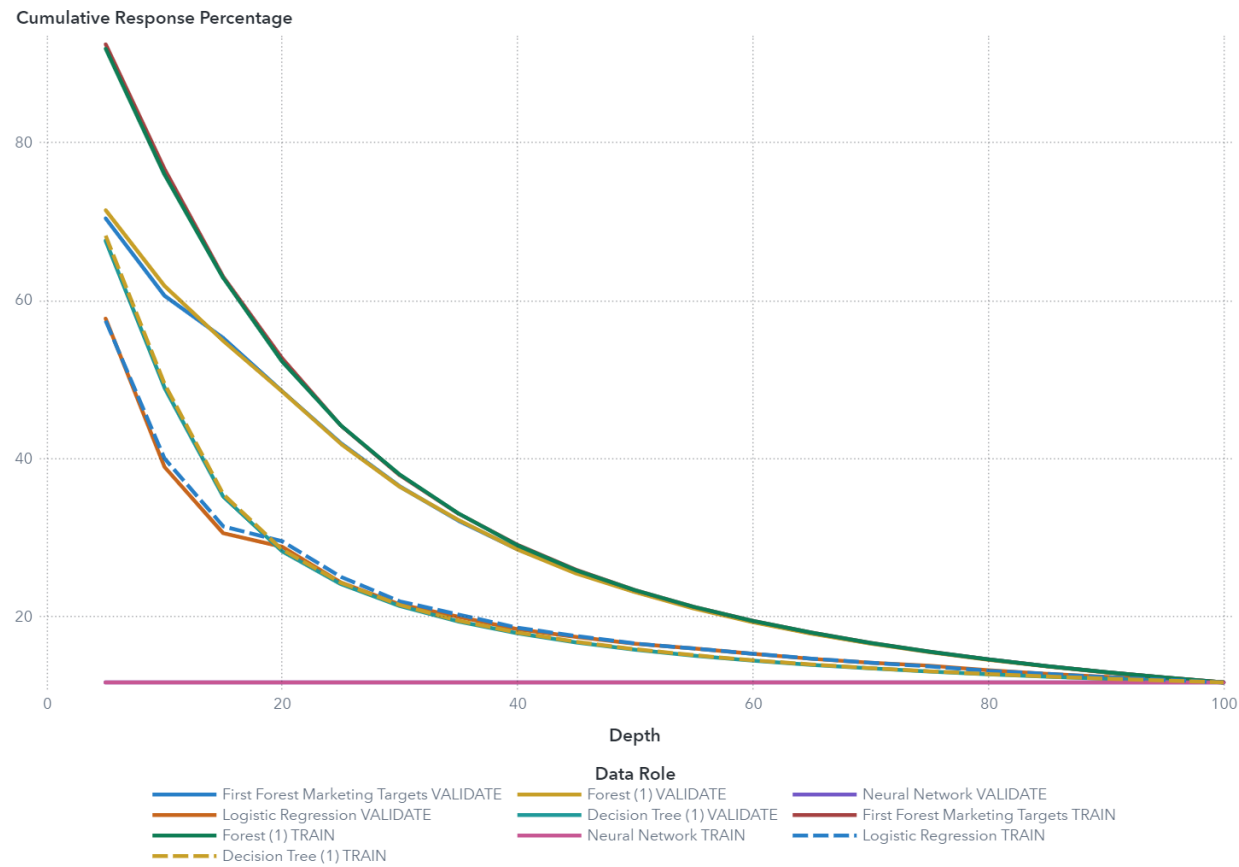# Captured Response Percentage

Cumulative Captured Response Percentage

Cumulative Captured Response Percentage

Response Percentage

Response Percentage

Cumulative Response Percentage

Cumulative Response Percentage

Depth

Data Role

- First Forest Marketing Targets VALIDATE
- Logistic Regression VALIDATE
- Forest (1) TRAIN
- Decision Tree (1) TRAIN
- Forest (1) VALIDATE
- Decision Tree (1) VALIDATE
- Neural Network TRAIN
- Neural Network VALIDATE
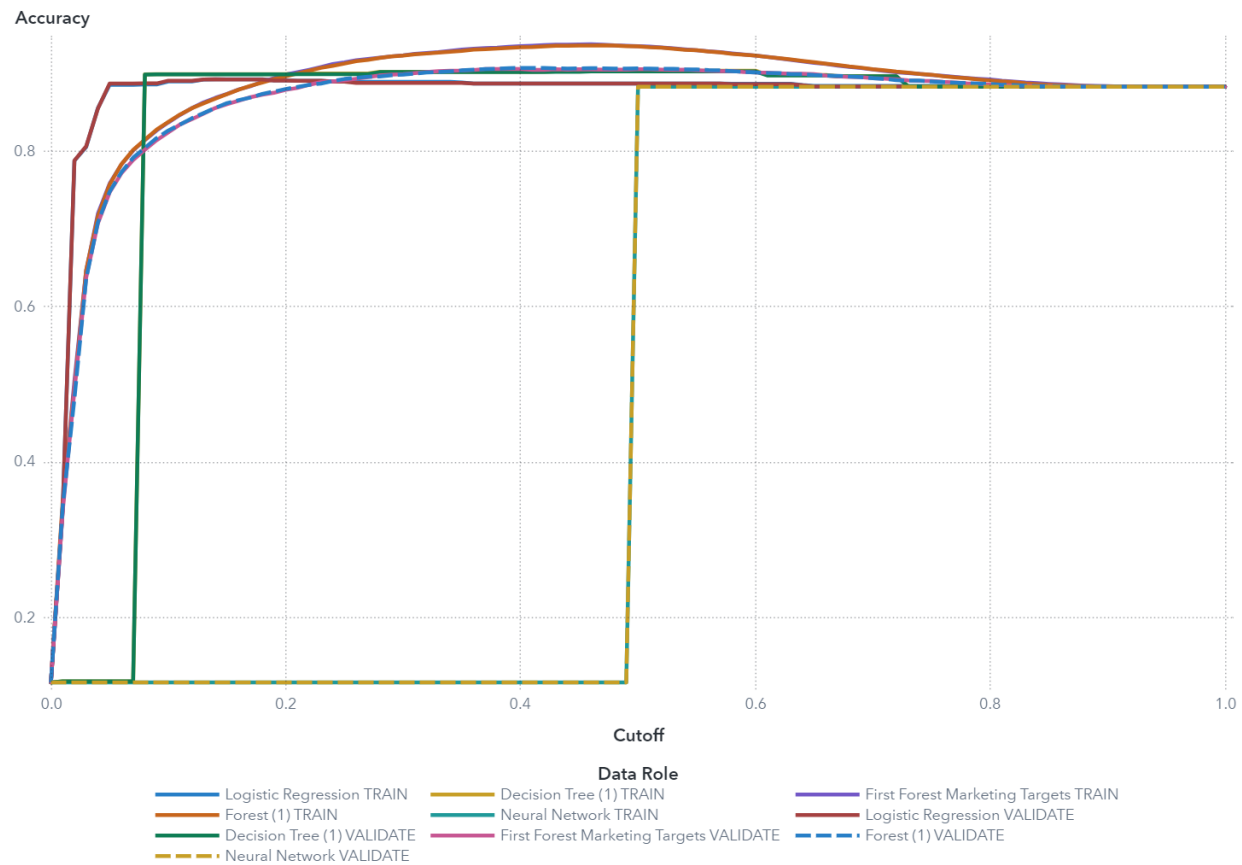- First Forest Marketing Targets TRAIN
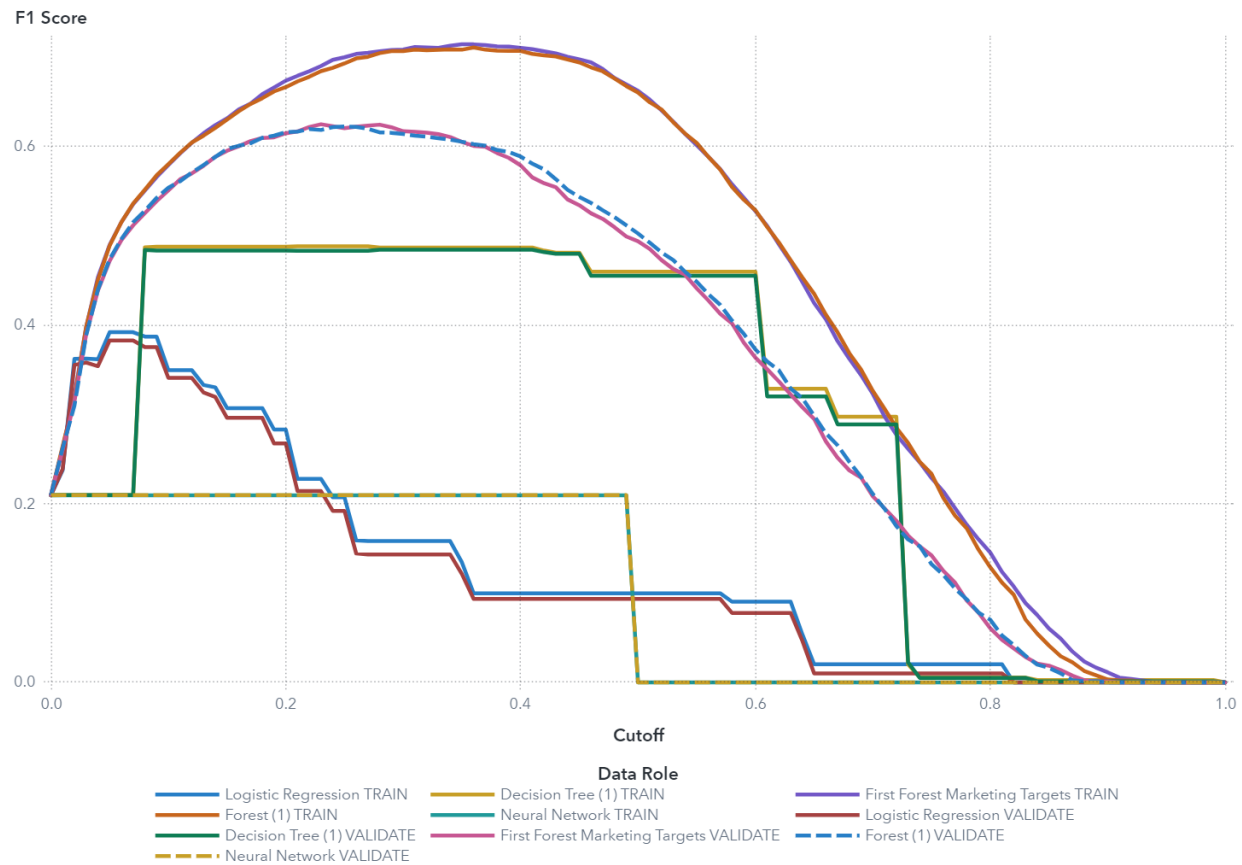- Logistic Regression TRAIN

ROC
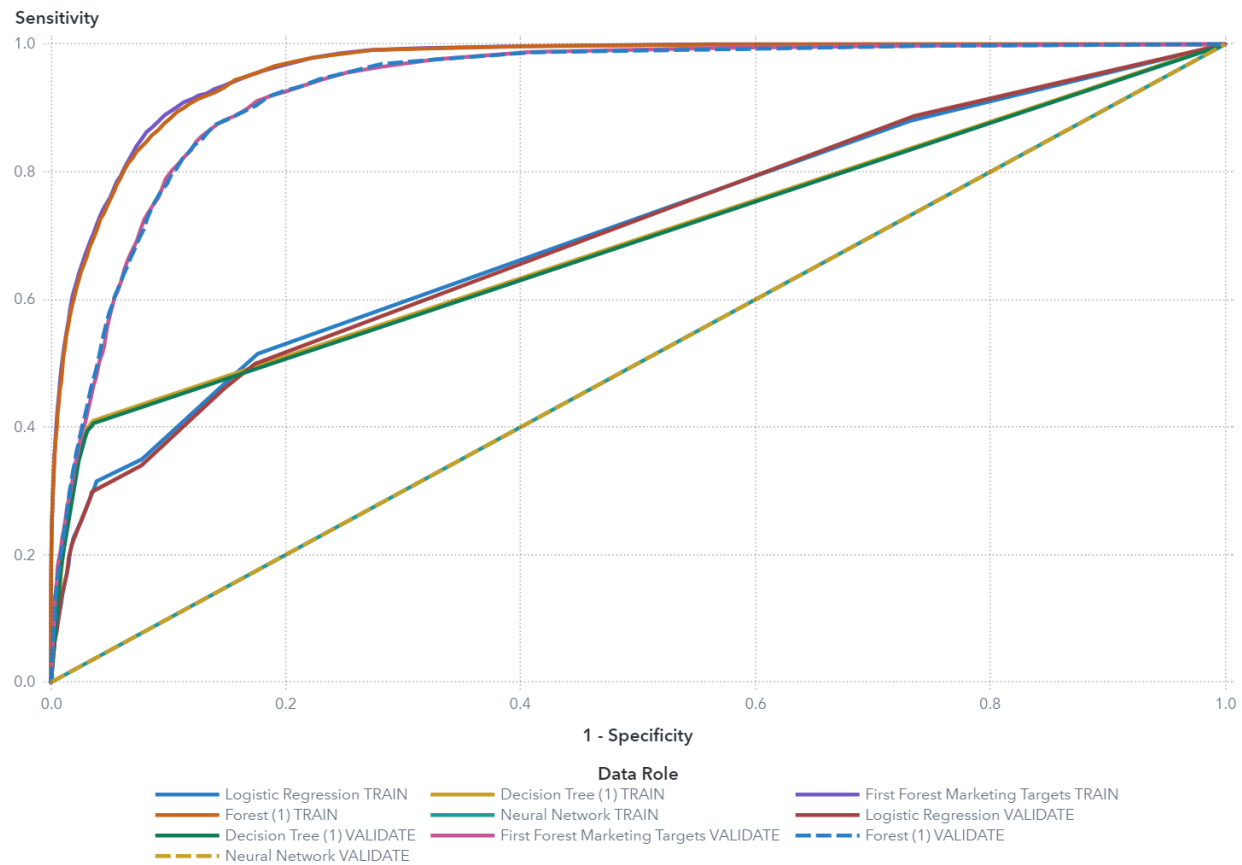
Accuracy

F1 Score

Fit Statistics

Statistics Label	TRAIN_Logistic_Regression	VALIDATE_Logistic_Regression	TRAIN_Decision_Tree (1)
Area Under ROC	0.7029	0.7001	0.6897
Average Squared Error	0.1002	0.1010	0.0814
Divisor for ASE	31,647	13,564	31,647
Formatted Partition	1	0	1
Gamma	0.5400	0.5407	0.8839
Gini Coefficient	0.4058	0.4001	0.3793
KS (Youden)	0.3388	0.3254	0.3740
KS at User-Specified Cutoff	0.0509	0.0477	0.3272
KS Cutoff	0.0200	0.0200	0.0900
Misclassification Rate	0.1130	0.1130	0.0964
Misclassification Rate (Event)	0.1130	0.1130	0.0964
Misclassification Rate at KS Cutoff (Event)	0.2122	0.2120	0.1008
Multi-Class Log Loss	0.4016	0.4057	0.2954
Number of Observations	31,647	13,564	31,647
Partition Indicator	1	0	1
Root Average Squared Error	0.3166	0.3178	0.2853
Target Name	y	y	y
Tau	0.0838	0.0827	0.0784

VALIDATE_Decision_Tree (1)	TRAIN_First_Forest Marketing Targets	VALIDATE_First_Forest Marketing Targets	TRAIN_Forest_(1)
0.6869	0.9637	0.9309	0.9624
0.0819	0.0489	0.0633	0.0494
13,564	31,647	13,564	31,647
0	1	0	1
0.8779	0.9303	0.8677	0.9279
0.3739	0.9274	0.8618	0.9248
0.3698	0.7961	0.7355	0.7889
0.3235	0.5293	0.3671	0.5274
0.0800	0.1800	0.1100	0.1600
0.0973	0.0647	0.0945	0.0651
0.0973	0.0647	0.0945	0.0651
0.1013	0.1105	0.1655	0.1208
0.3013	0.1660	0.2044	0.1672
13,564	31,647	13,564	31,647
0	1	0	1
0.2862	0.2211	0.2515	0.2223
y	y	y	y
0.0773	0.1916	0.1781	0.1911

VALIDATE_Forest_(1)	TRAIN_Neural_Network	VALIDATE_Neural_Network
0.9305	0.5000	0.5000
0.0632	0.2428	0.2428
13,564	31,647	13,564
0	1	0
0.8669		
0.8610	0	0
0.7343	0	0

VALIDATE_Forest_(1)	TRAIN_Neural_Network	VALIDATE_Neural_Network
0.3765	0	0
0.1500	0	0
0.0935	0.1170	0.1170
0.0935	0.1170	0.1170
0.1381	0.8830	0.8830
0.2045	0.6787	0.6787
13,564	31,647	13,564
0	1	0
0.2514	0.4927	0.4927
y	y	y
0.1779	0	0