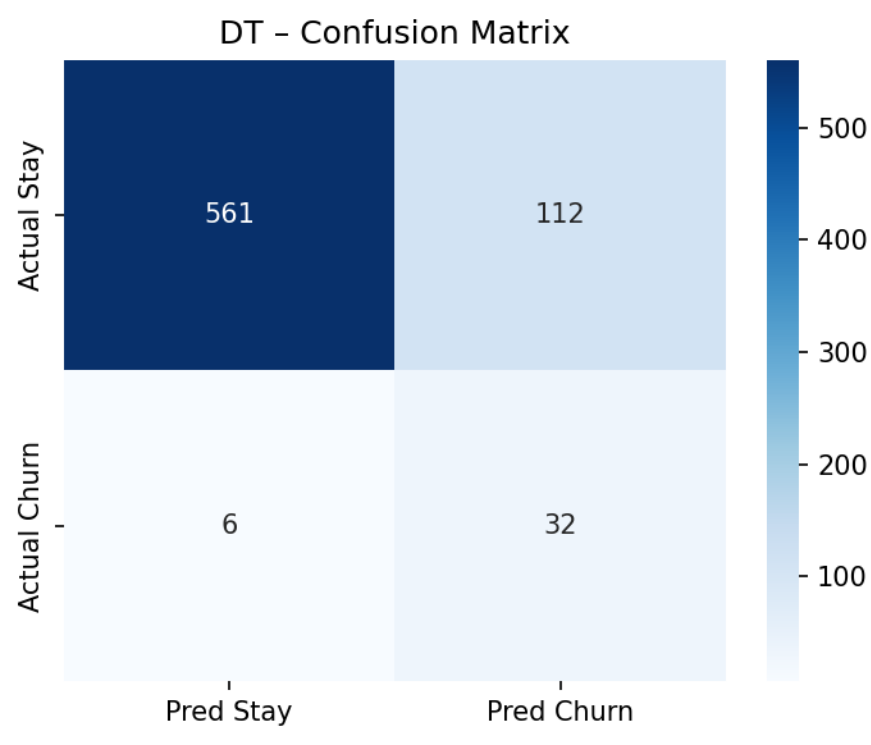
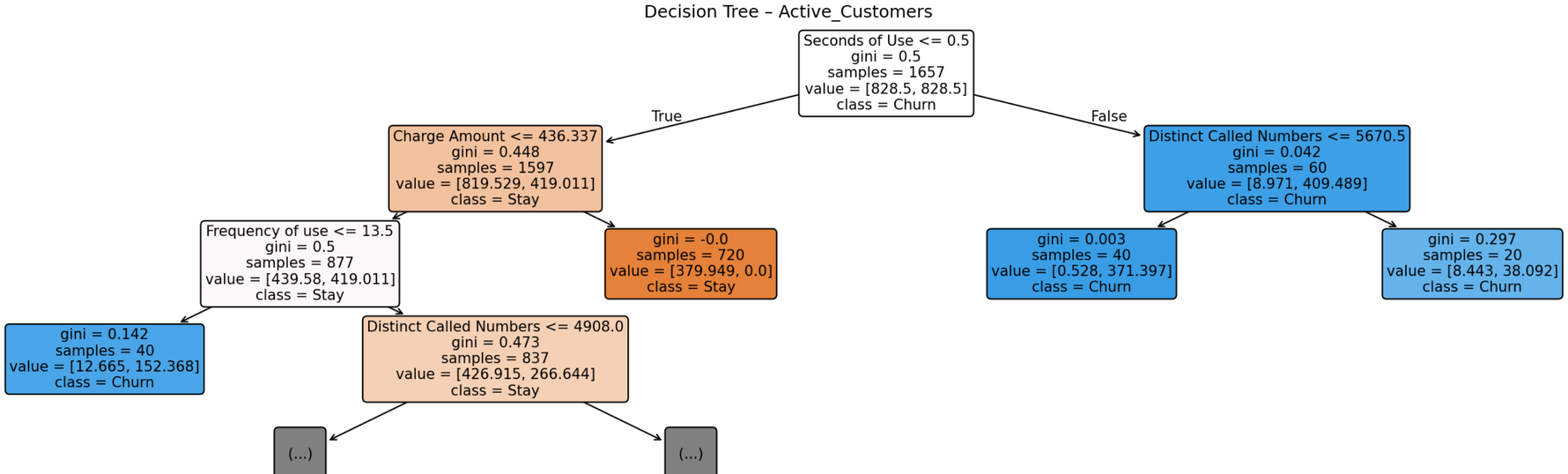
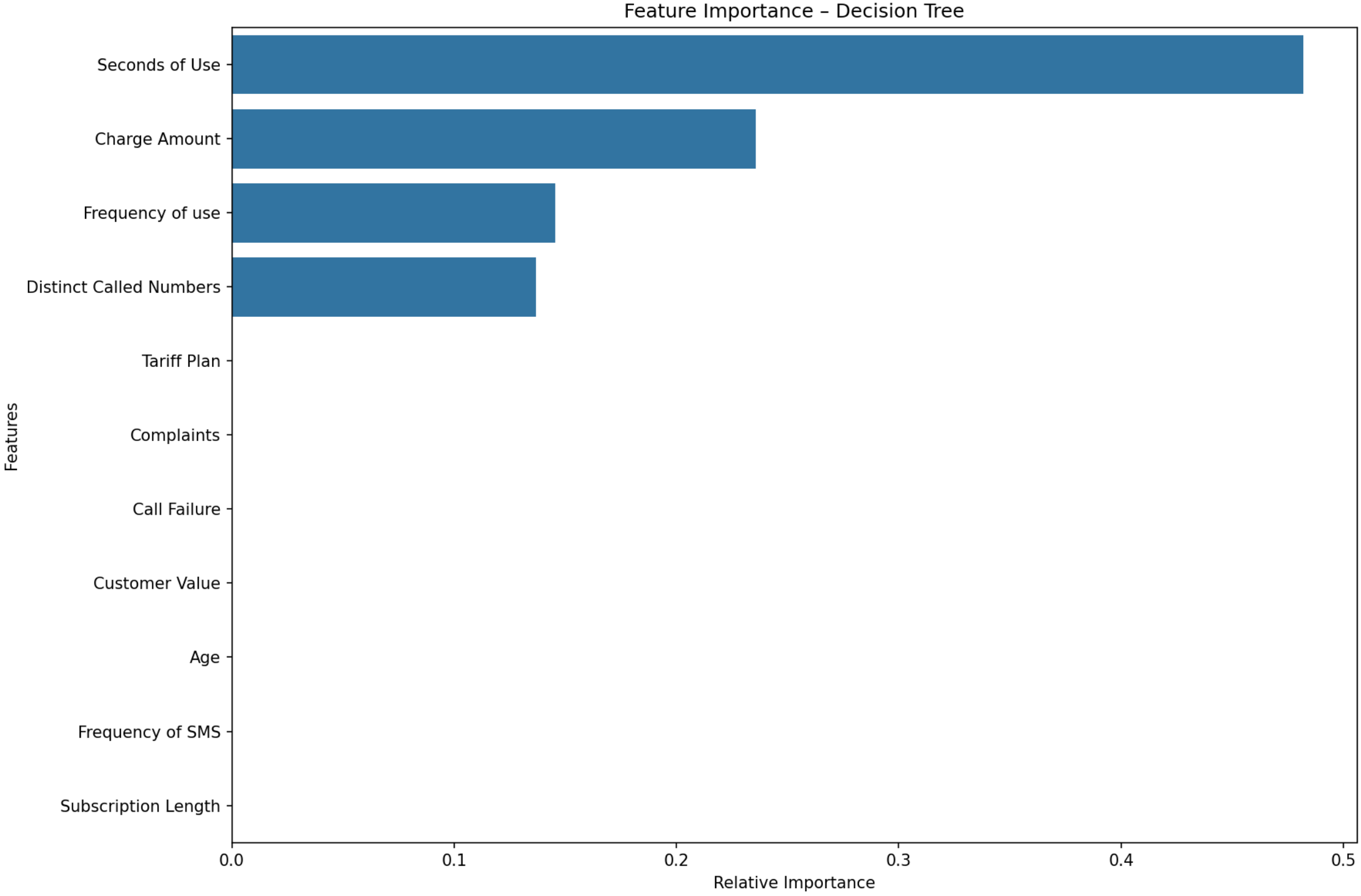
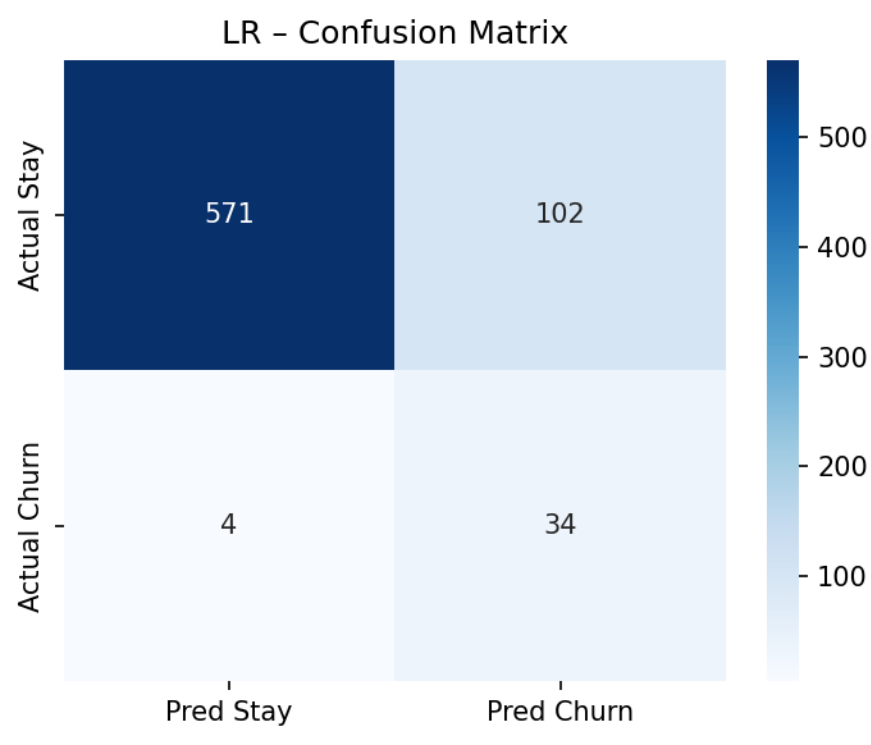


Summary (AUC=0.927)

accuracy	precision	recall	f1-score
0.83	0.95	0.83	0.88

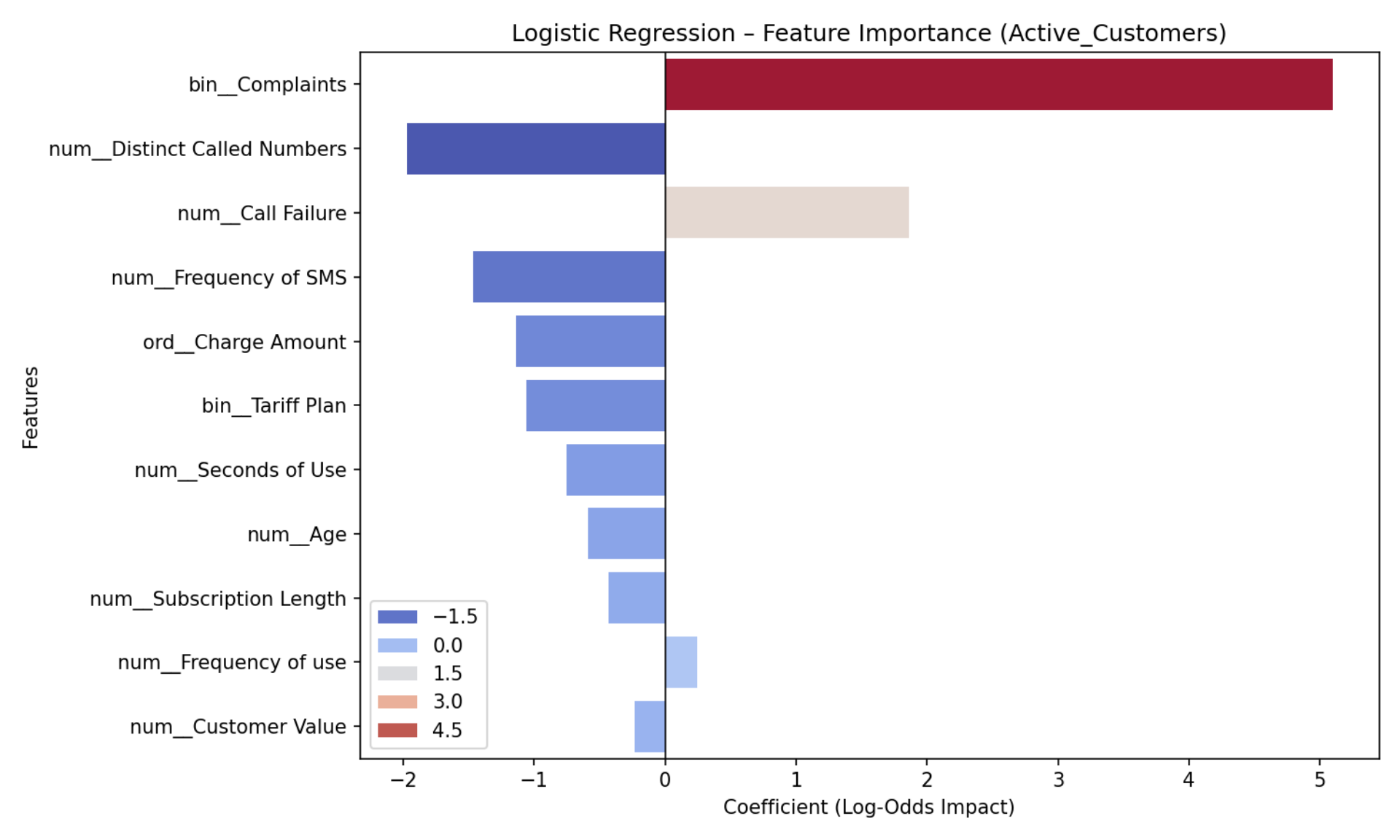

Decision Tree – Active_Customers
Seconds of Use <= 0.5
gini = 0.5
samples = 1657
value = [828.5, 828.5]
class = Churn
True
False
Charge Amount <= 436.337
gini = 0.448
samples = 1597
value = [819.529, 419.011]
class = Stay
Distinct Called Numbers <= 5670.5
gini = 0.042
samples = 60
value = [8.971, 409.489]
class = Churn
Frequency of use <= 13.5
gini = 0.5
samples = 877
value = [439.58, 419.011]
class = Stay
gini = -0.0
samples = 720
value = [379.949, 0.0]
class = Stay
gini = 0.003
samples = 40
value = [0.528, 371.397]
class = Churn
gini = 0.297
samples = 20
value = [8.443, 38.092]
class = Churn
gini = 0.142
samples = 40
value = [12.665, 152.368]
class = Churn
Distinct Called Numbers <= 4908.0
gini = 0.473
samples = 837
value = [426.915, 266.644]
class = Stay
(...)
(...)

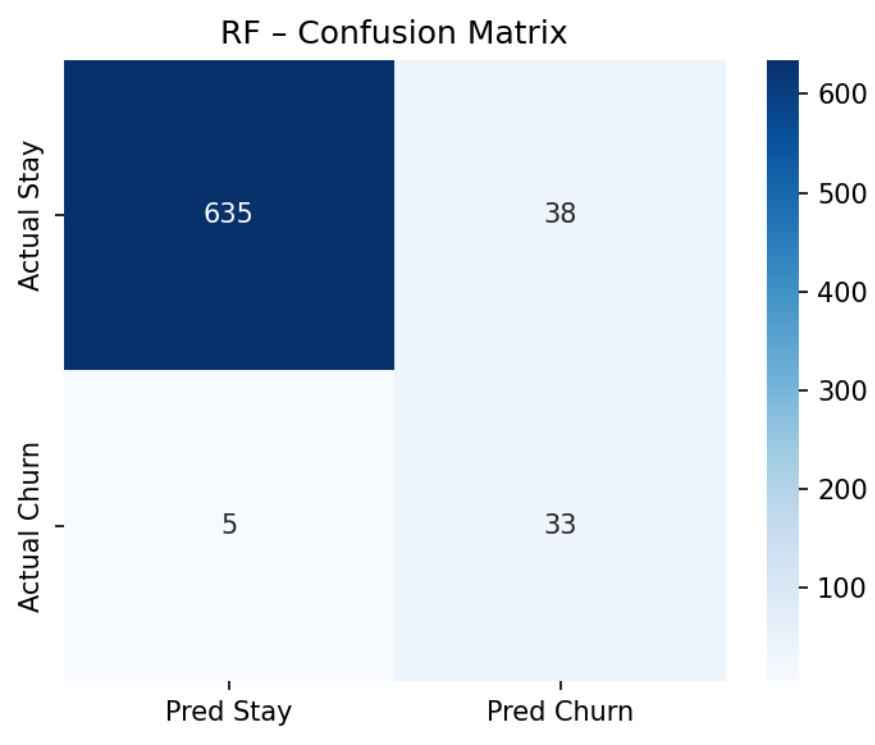

Feature Importance – Decision Tree
Seconds of Use
Charge Amount
Frequency of use
Distinct Called Numbers
Tariff Plan
Complaints
Call Failure
Customer Value
Age
Frequency of SMS
Subscription Length
Features
0.0
0.1
0.2
0.3
0.4
0.5
Relative Importance



Summary (AUC=0.952)

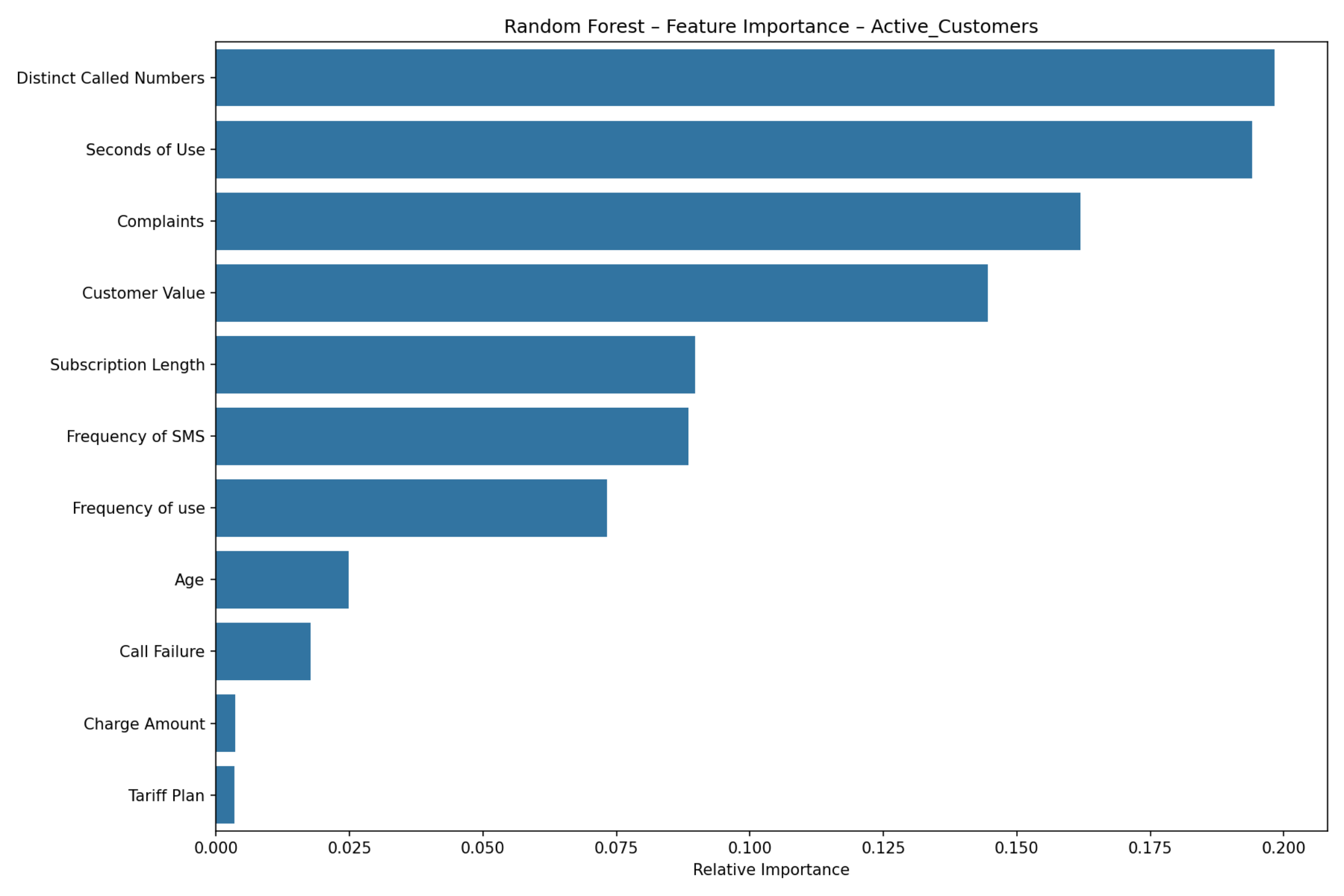
accuracy	precision	recall	f1-score
0.85	0.95	0.85	0.89

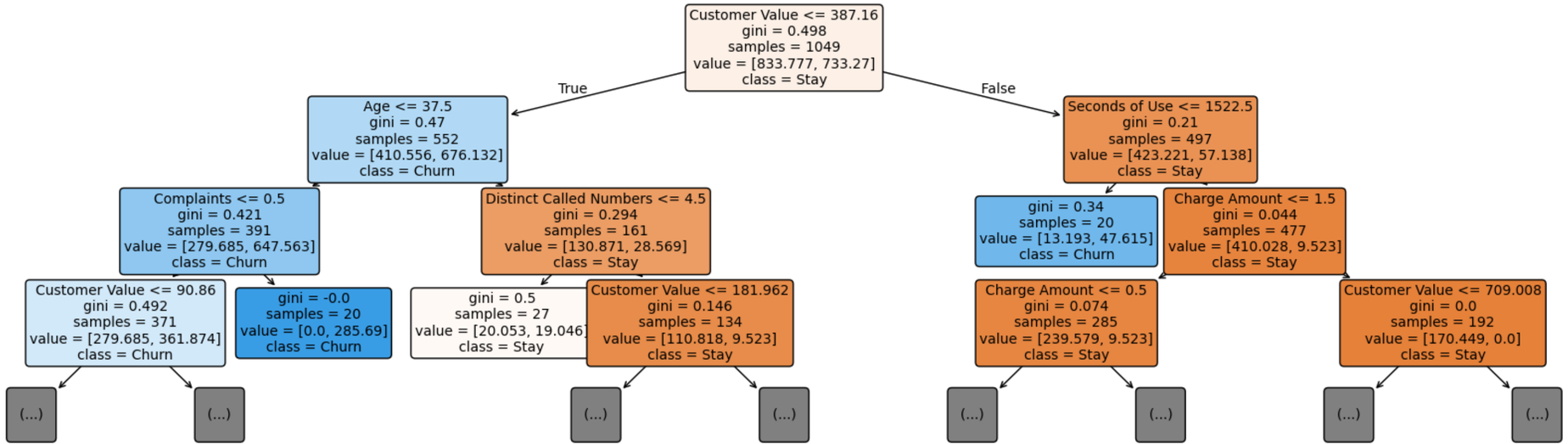

Logistic Regression – Feature Importance (Active_Customers)
bin__Complaints
num__Distinct Called Numbers
num__Call Failure
num__Frequency of SMS
ord__Charge Amount
bin__Tariff Plan
num__Seconds of Use
num__Age
num__Subscription Length
num__Frequency of use
num__Customer Value
Features
−1.5
0.0
1.5
3.0
4.5
−2
−1
0
1
2
3
4
5
Coefficient (Log-Odds Impact)



Summary (AUC=0.976)

accuracy	precision	recall	f1-score
0.94	0.96	0.94	0.95


Random Forest – Feature Importance – Active_Customers
Distinct Called Numbers
Seconds of Use
Complaints
Customer Value
Subscription Length
Frequency of SMS
Frequency of use
Age
Call Failure
Charge Amount
Tariff Plan
0.000
0.025
0.050
0.075
0.100
0.125
0.150
0.175
0.200
Relative Importance


Customer Value <= 387.16
gini = 0.498
samples = 1049
value = [833.777, 733.27]
class = Stay
True
False
Age <= 37.5
gini = 0.47
samples = 552
value = [410.556, 676.132]
class = Churn
Seconds of Use <= 1522.5
gini = 0.21
samples = 497
value = [423.221, 57.138]
class = Stay
Complaints <= 0.5
gini = 0.421
samples = 391
value = [279.685, 647.563]
class = Churn
Distinct Called Numbers <= 4.5
gini = 0.294
samples = 161
value = [130.871, 28.569]
class = Stay
gini = 0.34
samples = 20
value = [13.193, 47.615]
class = Churn
Charge Amount <= 1.5
gini = 0.044
samples = 477
value = [410.028, 9.523]
class = Stay
Customer Value <= 90.86
gini = 0.492
samples = 371
value = [279.685, 361.874]
class = Churn
gini = -0.0
samples = 20
value = [0.0, 285.69]
class = Churn
gini = 0.5
samples = 27
value = [20.053, 19.046]
class = Stay
Customer Value <= 181.962
gini = 0.146
samples = 134
value = [110.818, 9.523]
class = Stay
Charge Amount <= 0.5
gini = 0.074
samples = 285
value = [239.579, 9.523]
class = Stay
Customer Value <= 709.008
gini = 0.0
samples = 192
value = [170.449, 0.0]
class = Stay
(...)
(...)
(...)
(...)
(...)
(...)
(...)
(...)