PROFESSIONAL & CONTINUING EDUCATION
UNIVERSITY of WASHINGTON

INTRODUCTION TO ROC CHART

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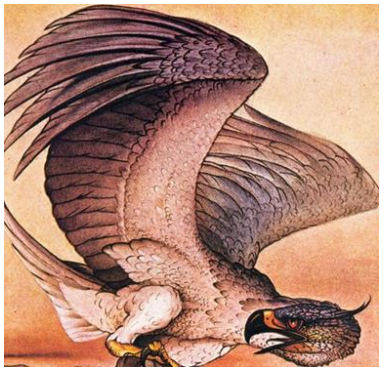
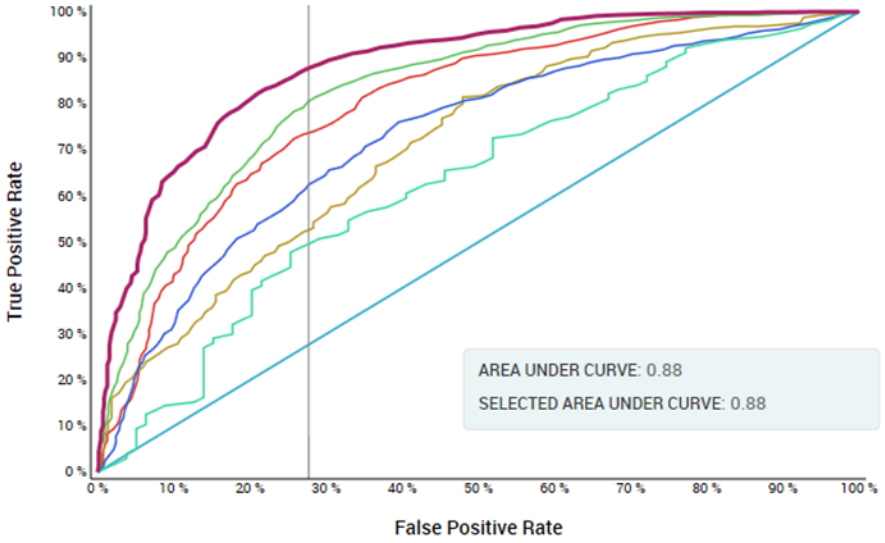
Confusion Matrix and ROC Chart



Generated from test data

Receiver Operating Characteristic Curve



Classification Matrix

Model:C0_R_LogReg

View: Percent | Count

Actual / Predicted	'Does not plan to at...	Not 'Does not plan t...
'Does not plan to at...	1284	207
Not 'Does not plan t...	165	504

Probability threshold: 50 %

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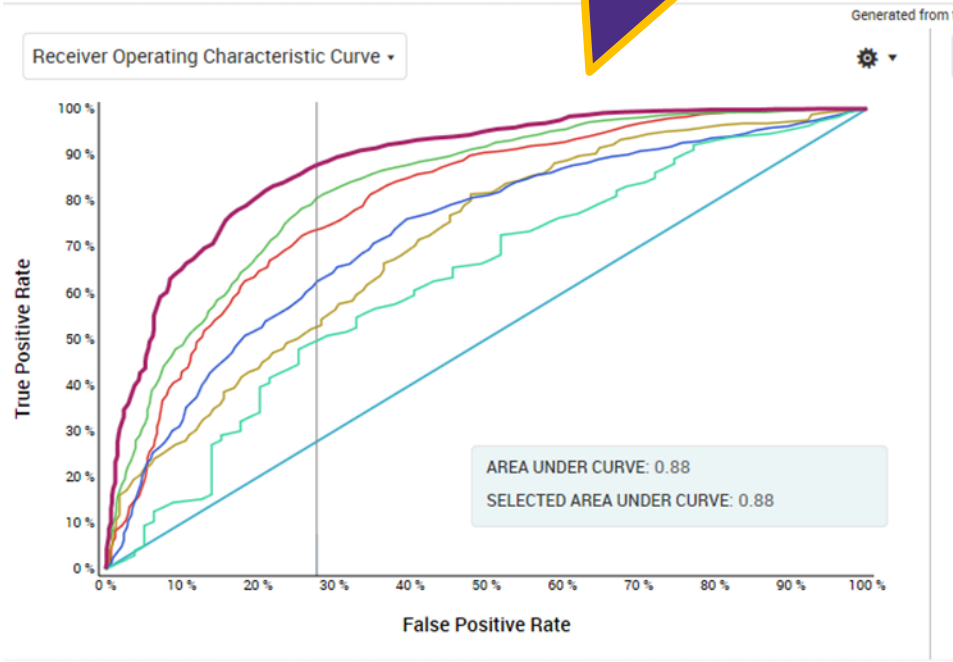
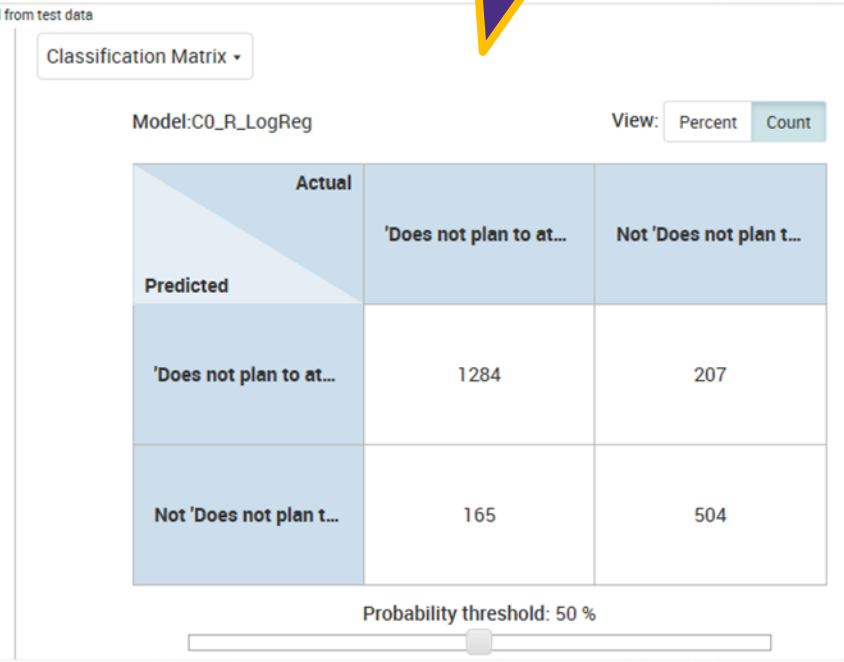
Comparison of 6 ROC curves
Each curve is from a different model

The confusion matrix for one model at one threshold





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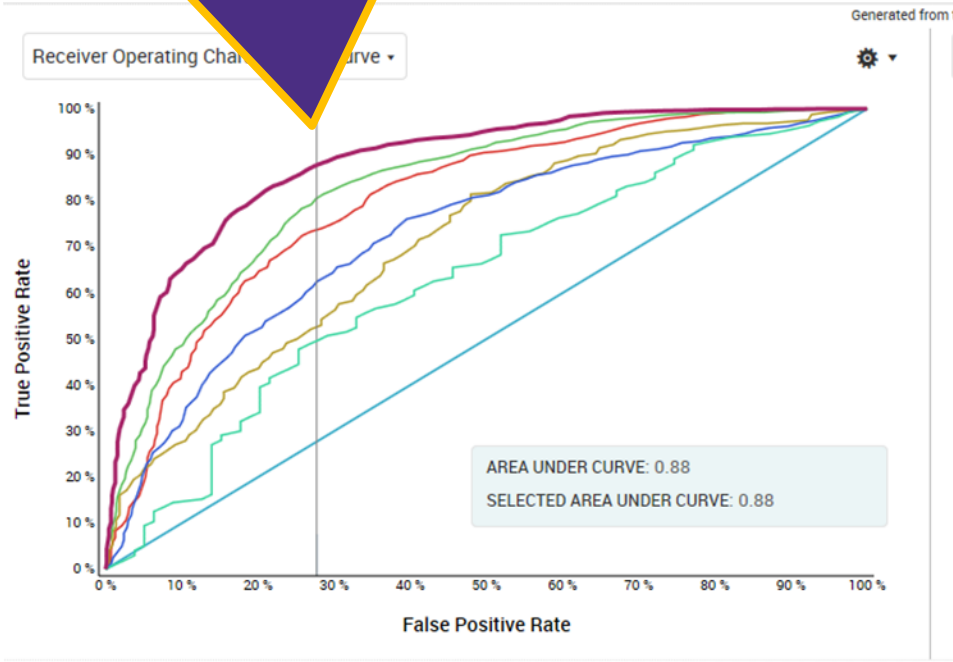
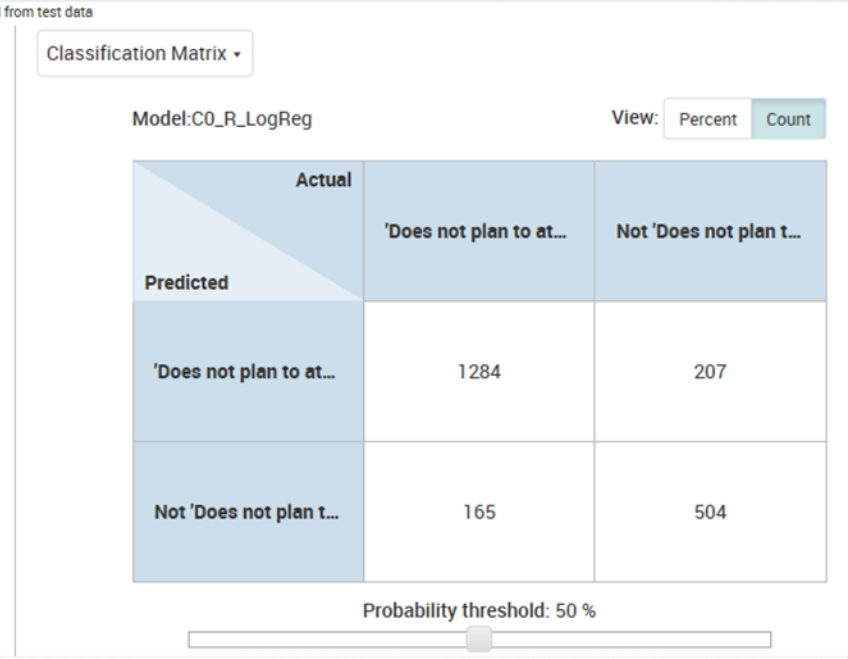
A confusion matrix corresponds to one point on one ROC curve. An ROC curve can correspond to 100s of confusion matrices





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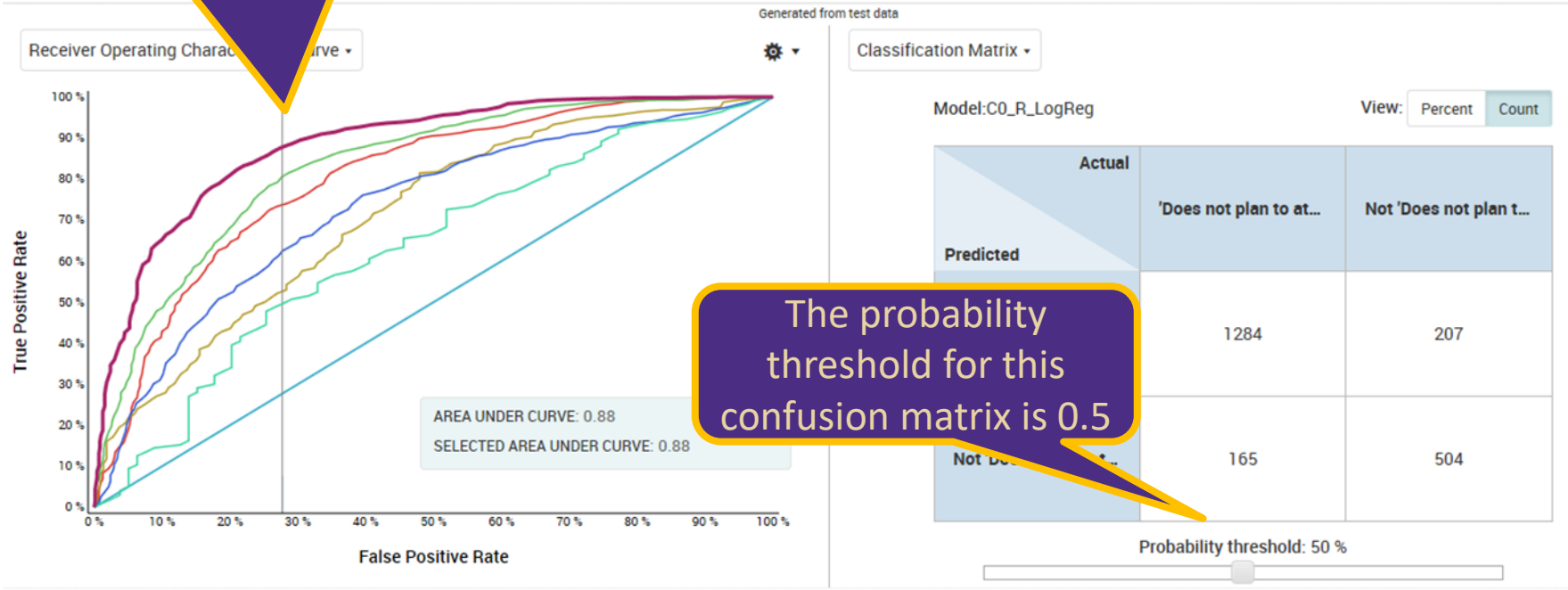
In this example, one of the models has an FPR of 0.28 when the probability threshold is 0.5



The probability threshold for this confusion matrix is 0.5

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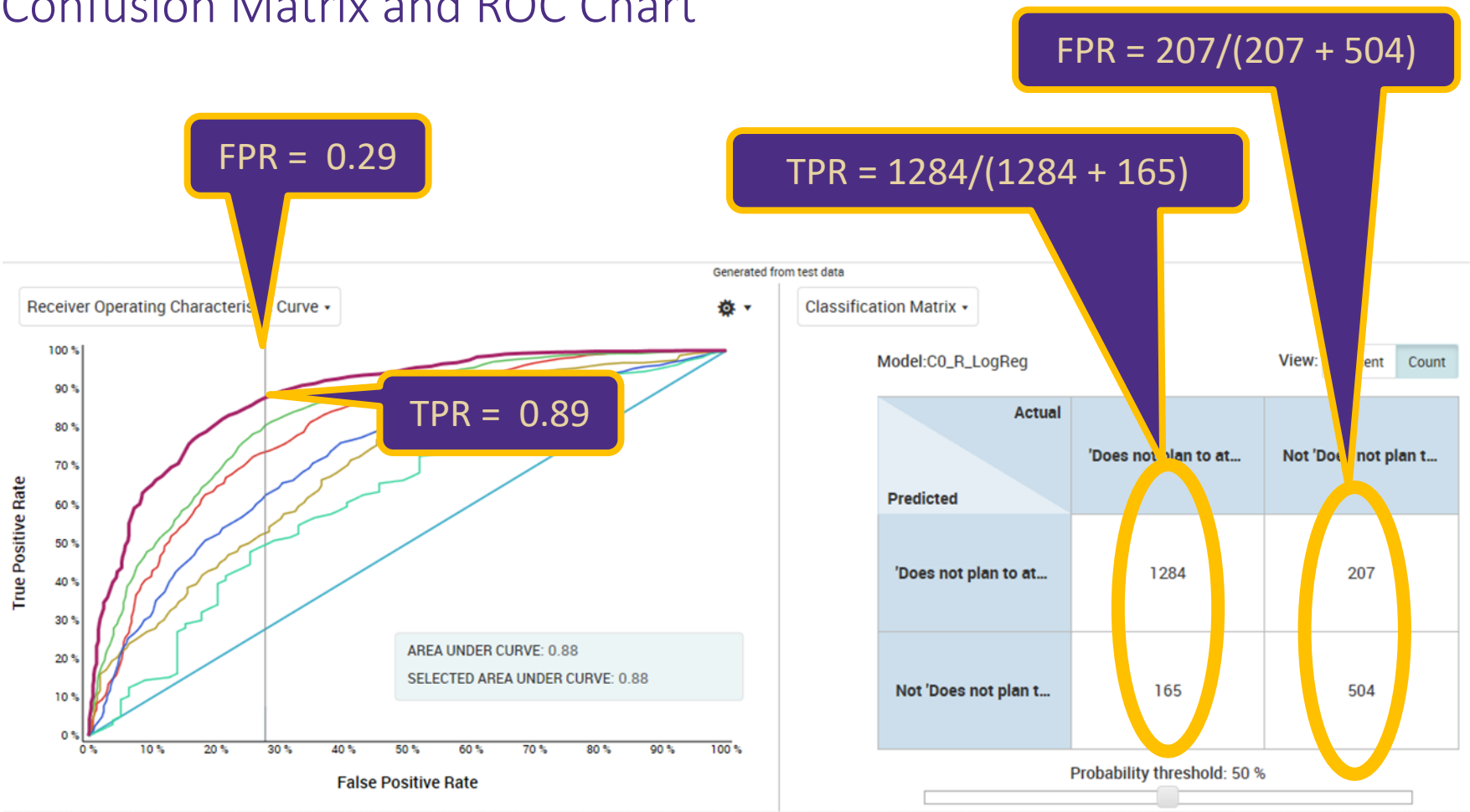

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Confusion Matrix and ROC Chart

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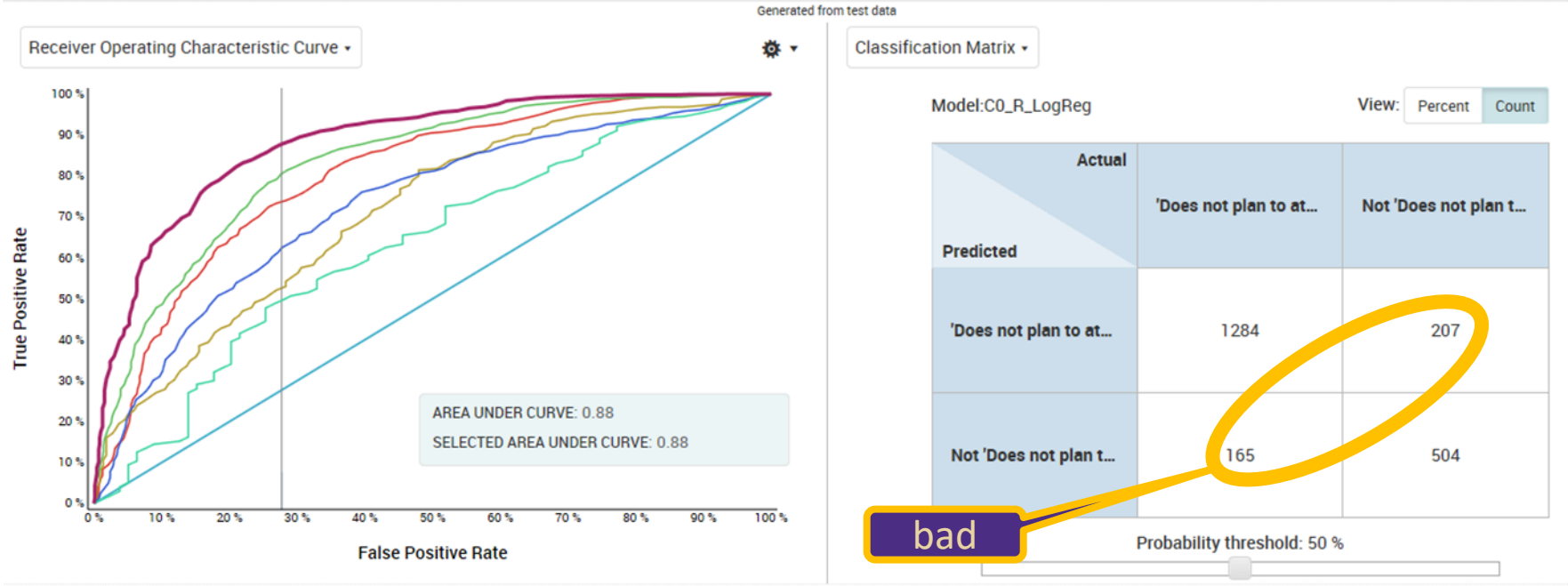

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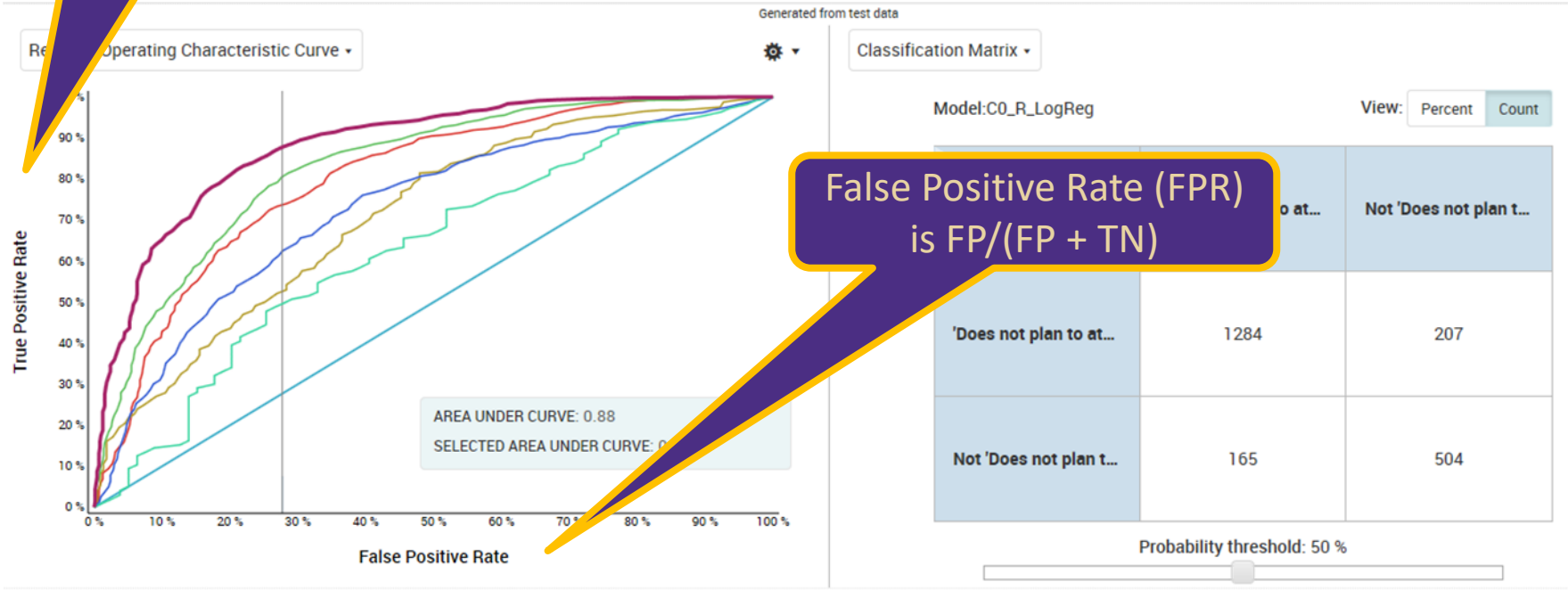
True Positive Rate (TPR) is TP/(TP + FN)

False Positive Rate (FPR) is FP/(FP + TN)



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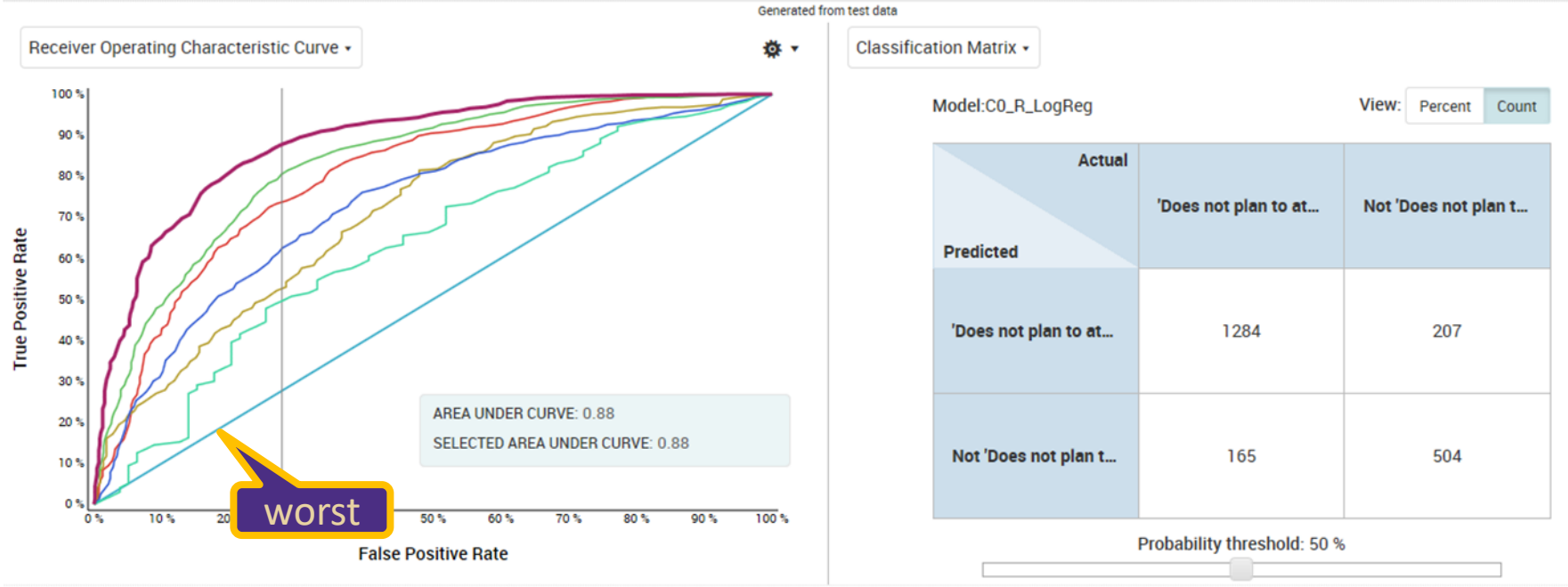

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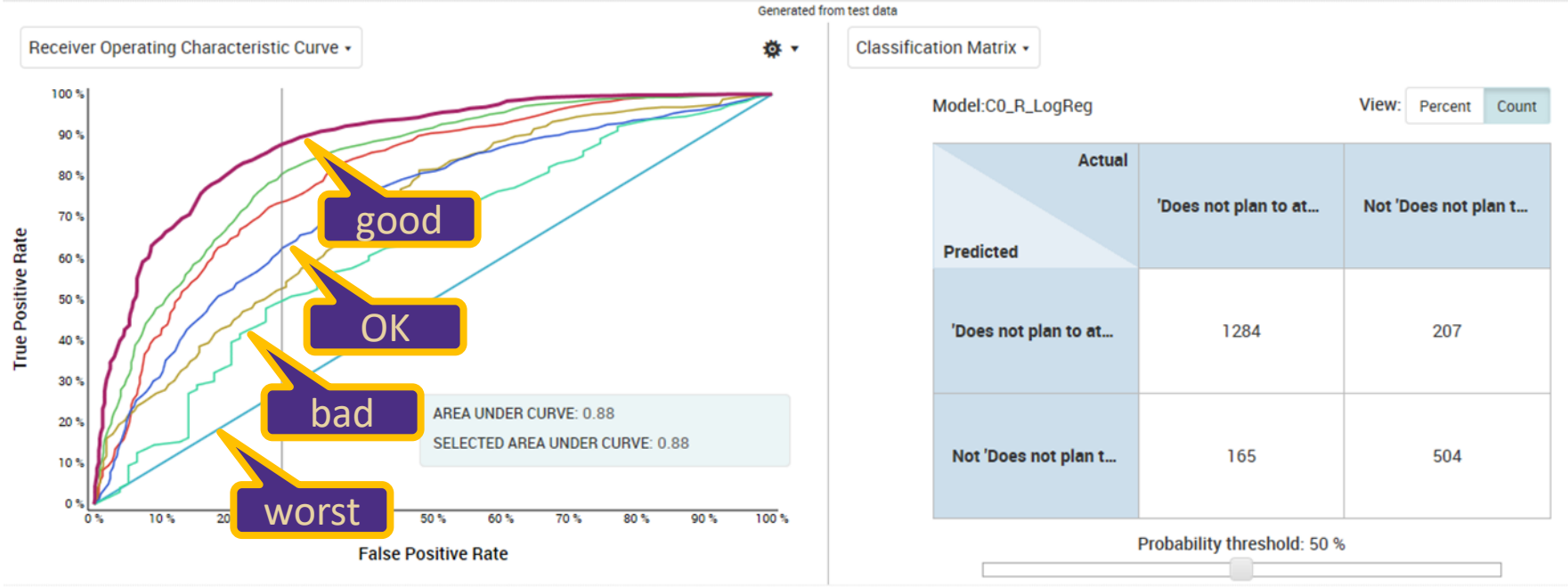

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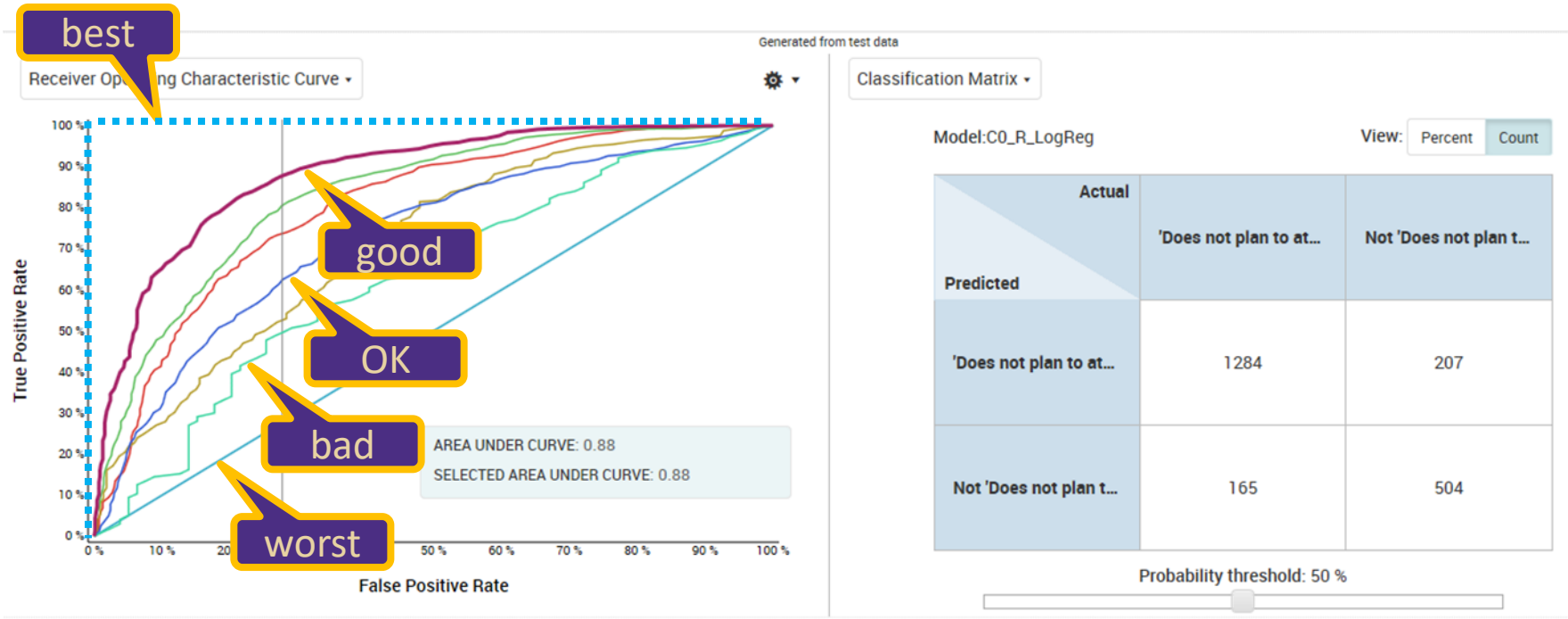

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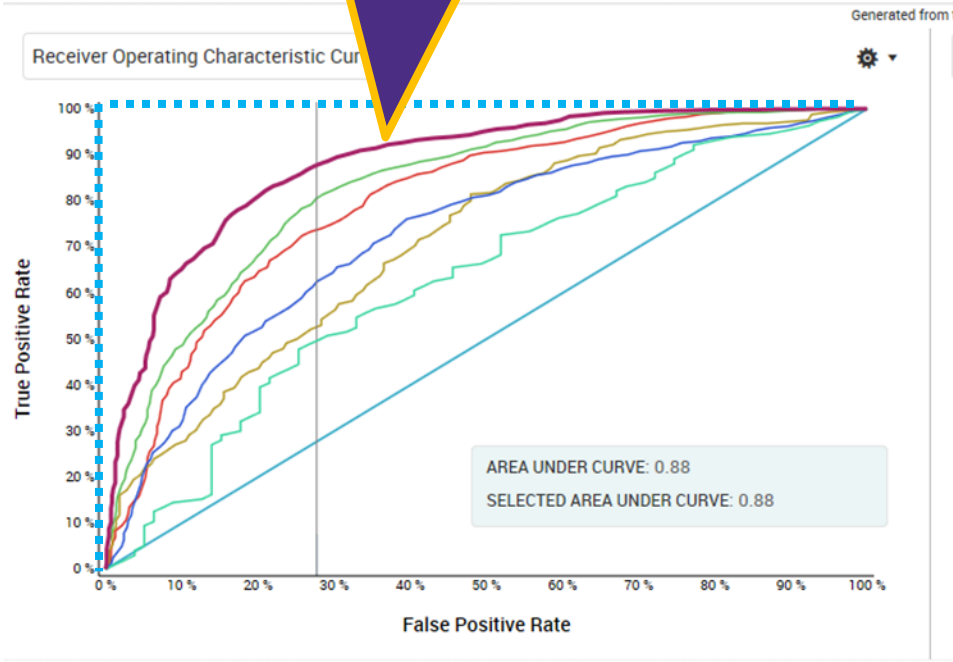
ROC charts are non-decreasing functions



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