Performance Measures

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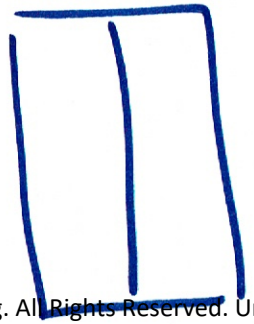
- Confusion Matrix
- ROC Curves, Gini Coefficient
- Gain and Lift Chart
- Kolomogorov-Smirnov (K-S) chart
- Concordance-Discordance ratio
- Root Mean Square Error, Mean Absolute Error



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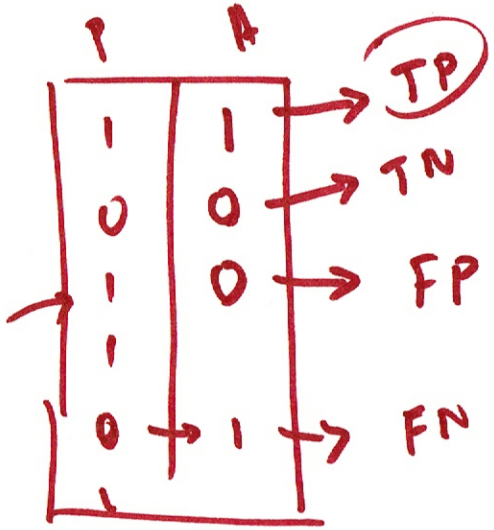

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Confusion Matrix

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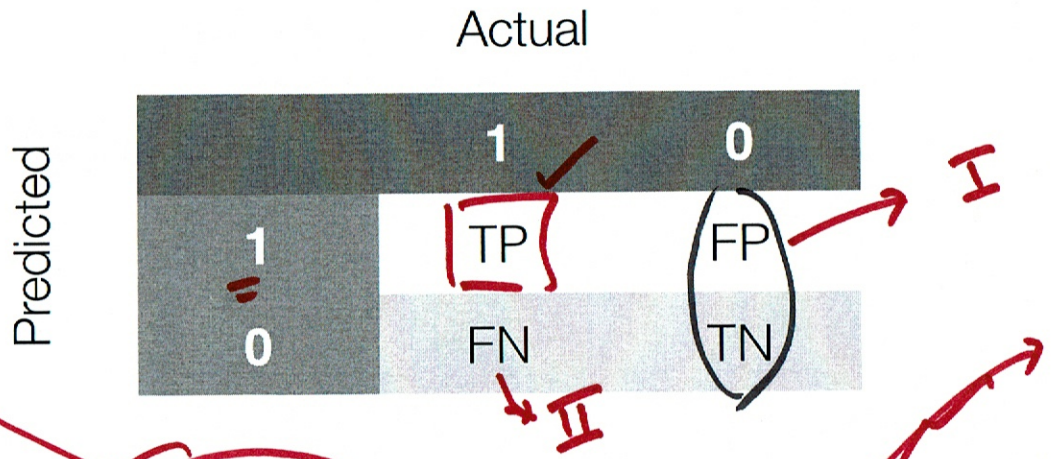
- For classification problem with a class output, the confusion matrix gives the counts of correct and erroneous predictions:



- Classification Error Rate: sum of Type 1 (FP) and Type 2 (FN) Errors (in percentage). Accuracy is 1-(error rate)

- Sensitivity (also called Recall or True Positive Rate): proportion of Total Positives that were correctly identified

$$\frac{TP}{TP + FN}$$

- Specificity (also called True Negative Rate): proportion of Total Negatives that were correctly identified

$$\frac{TN}{TN + FP}$$

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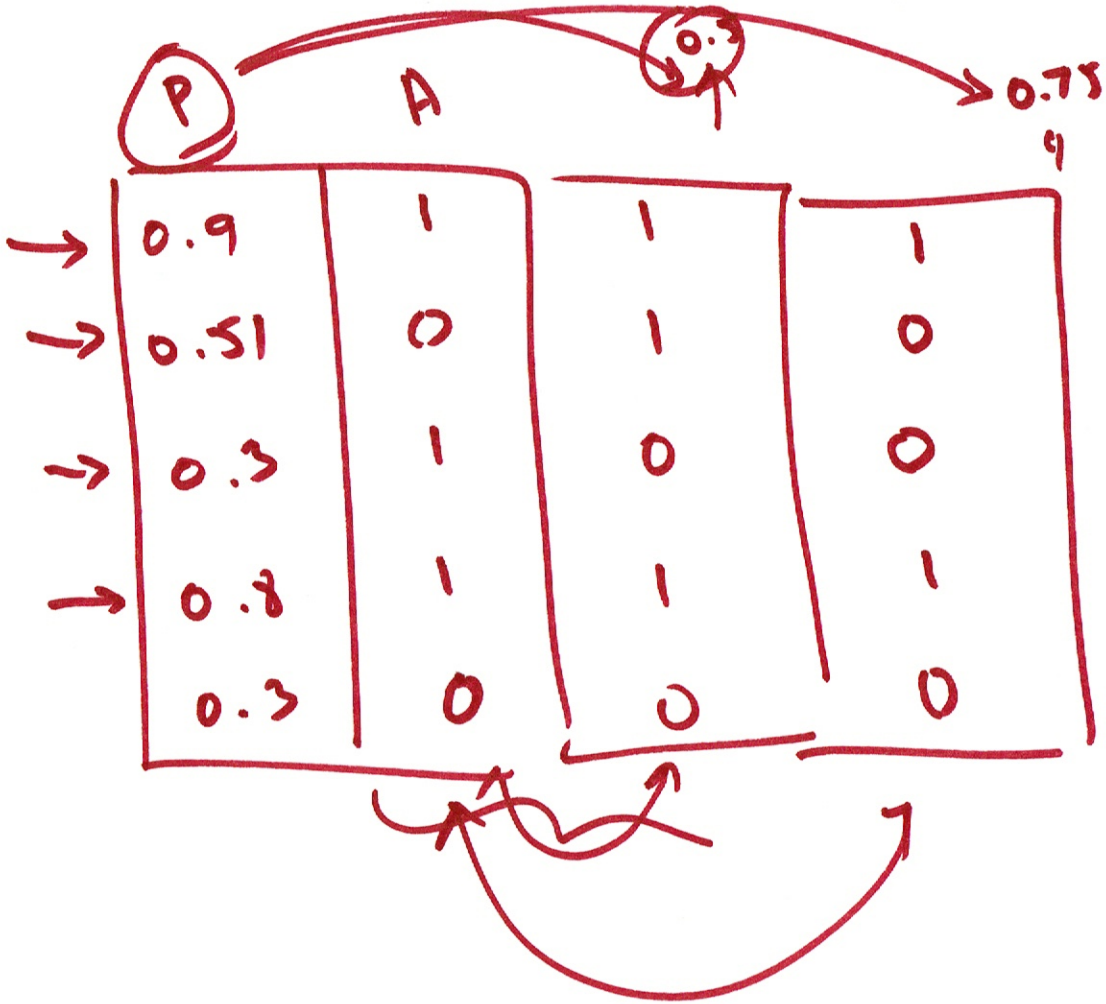

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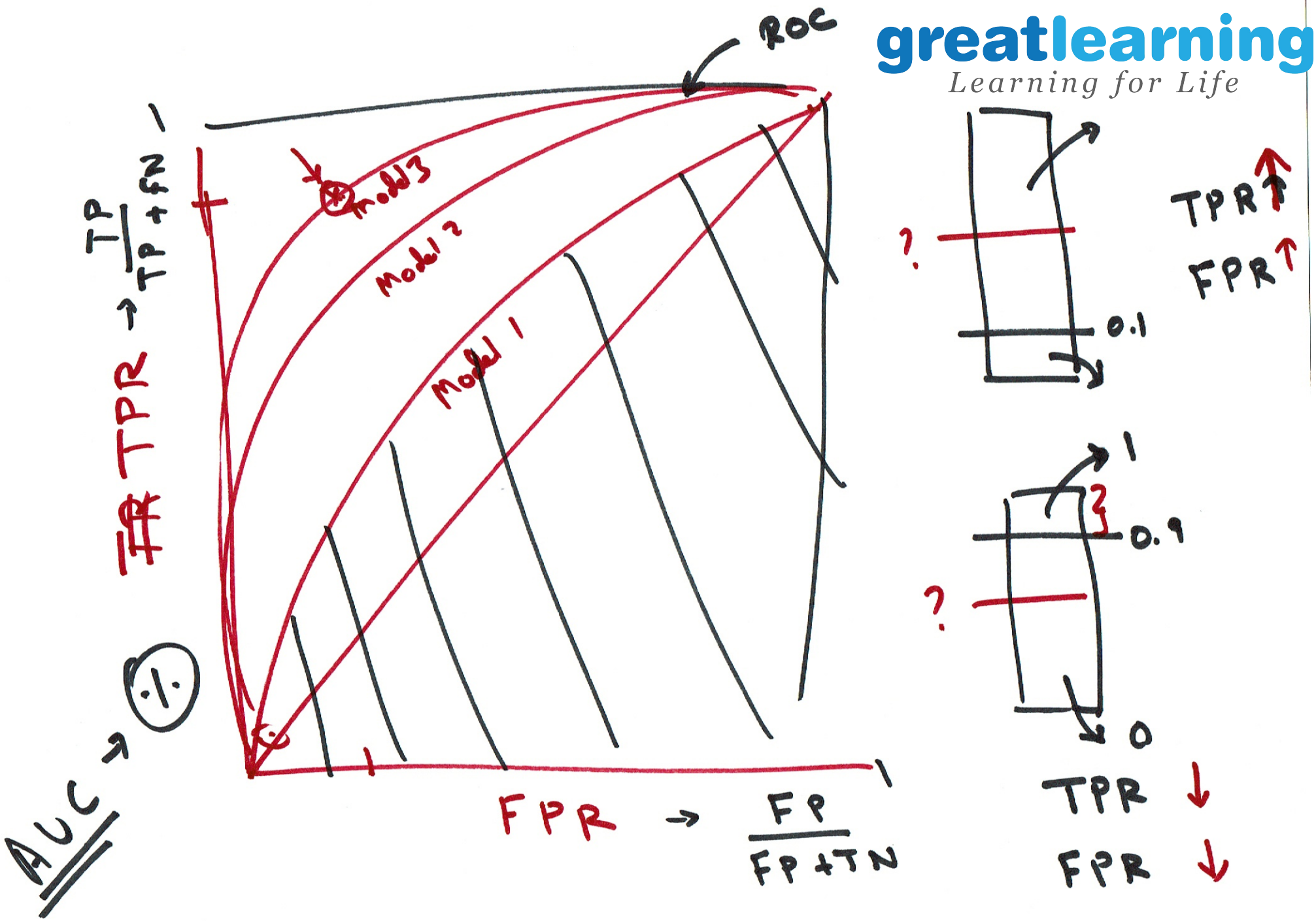

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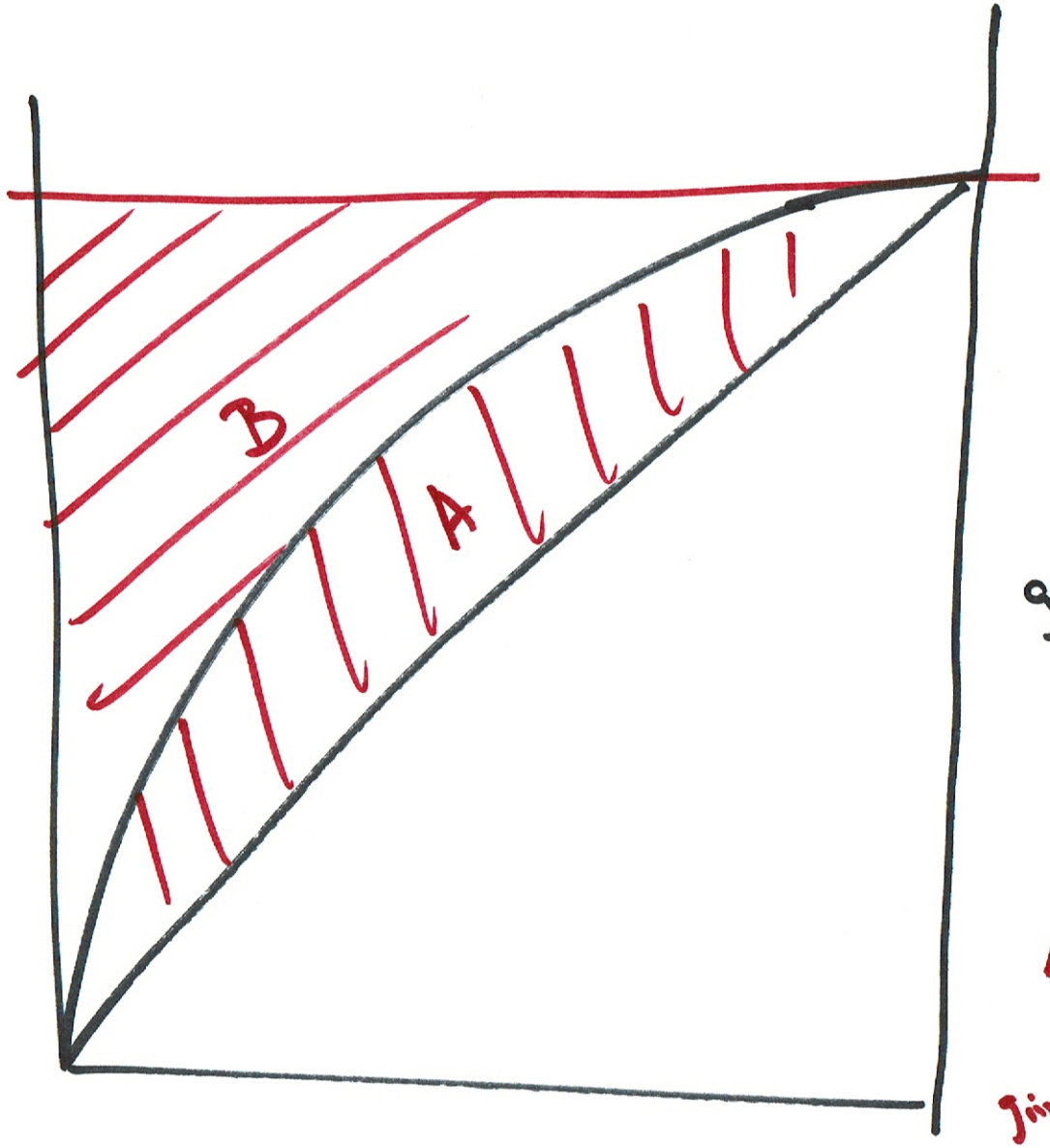

~~AC~~

AUC

gini coeff = $\frac{A}{A+B}$

$A = AUC - 0.5$

$A + B = 0.5$

gini coeff = $\frac{AUC - 0.5}{0.5}$

$\boxed{Gini = 2AUC - 1}$

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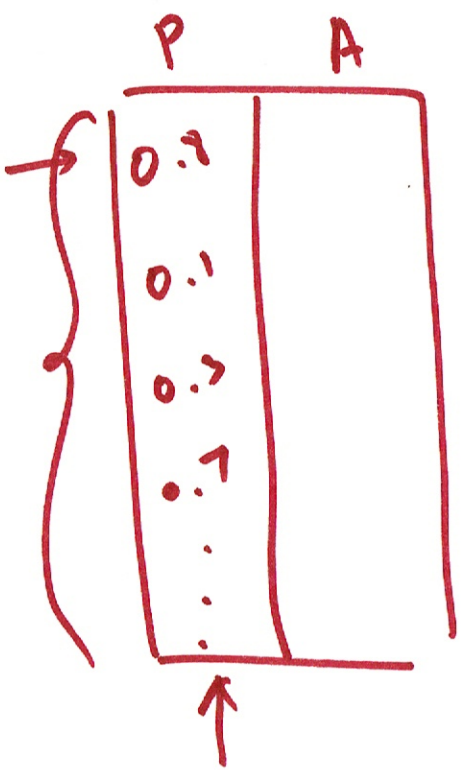

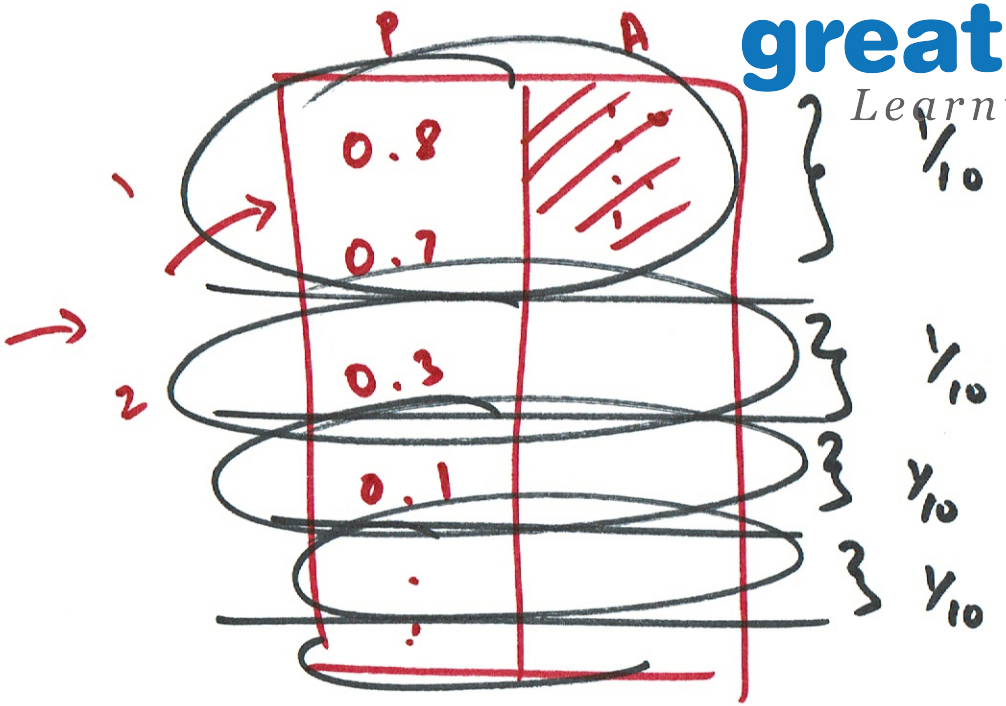

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