Intelligent Systems: Reasoning and Recognition

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Performance Evaluation Metrics

1) What is an ROC curve and how is it used?

2) What does it mean for an ROC curve to pass below the line from (0, 0) to (1, 1)? Use the mathematics to explain your answer.

3) You are given a classifier with an ROC curve for that passes the point (TPR = 0.99, FPR = 0.1). Is it possible to determine the Probability of Error for the classifier at this point? If yes, give the formula. If no, explain why.