

# Intelligent Systems: Reasoning and Recognition

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Ensimag 2  
Exercise 1

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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  $(\text{TPR} = 0.99, \text{FPR} = 0.1)$ . Is it possible to determine the Probability of Error for the classifier at this point? If yes, give the formula. If no, explain why.