Applied artificial intelligence

Performance measures

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There are all kinds of ways to evaluate how good a machine learning algorithm or neural network performed. In this document I will explicate some of these performance measures and explain why they are useful to us.

Performance measures

- Mean Absolute Error (MAE)
    - Mean absolute error is the mean of the difference between the predicted and original values. This performance measure can show us how much “off” the prediction was.
- Mean Squared Error (MSE)
    - In MSE we take the mean of the squared difference between original and predicted values. This is almost the same as MAE except when you use MSE the effect of outliers is clearly visible.
- Area Under curve (AUC)
    - Area under curve is used for binary classification, it takes the true positive rate and divides that by the false positive rate. When you plot this graph you will get a bow or curve, the bigger the area under the curve the better your model is performing.
- Accuracy score
    - Accuracy score is the simplest of measures, it takes the amount of correct predictions divided by the amount of predictions.
- Confusion Matrix
    - A confusion matrix gives us the prediction results, true positive, true negative, false positive, false negative. A true positive means the output was 1 and it was supposed to be 1, A true negative means the prediction was 0 but it was supposed to be 1, vice versa for true negative and false negative.