A List of Regression Models' Evaluation Metrics

By: Noureddin Sadawi

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1. **Error-based Measures (Sensitive stats - certainty of predictions)** in Expose

   (a) **Mean Absolute Error:** Returns the mean absolute error.

   (b) **Root Mean Squared Error:** Returns the root mean squared error.

   (c) **Relative Absolute Error:** Returns the relative absolute error.

   (d) **Root Relative Squared Error:** Returns the root relative squared error if the class is numeric.

$$MAE = \frac{\sum_{i=1}^{n} |p_i - a_i|}{n} \qquad RMSE = \sqrt{\frac{\sum_{i=1}^{n} (p_i - a_i)^2}{n}}$$

$$RAE = \frac{\sum_{i=1}^{n} |p_i - a_i|}{\sum_{i=1}^{n} |\bar{a} - a_i|} \qquad RSE = \frac{\sum_{i=1}^{n} (p_i - a_i)^2}{\sum_{i=1}^{n} (\bar{a} - a_i)^2}$$

a = actual target

p = predicted target

Figure 1: Metrics

   (e) **Mean Squared Error:**

   (f) **Mean Absolute Percentage Error:**

   (g) **Normalized Mean Squared Error:**

   (h) **r squared:**

   (i) **Relative Squared Error:**

   (j) **Sum Squared Error:**

2. **Correlation Coefficient:** Returns the correlation coefficient if the class is numeric. in Expose
3. **Information Criterion:** in Expose
   (a) **Akaike Information Criterion:**
   (b) **Bayesian Information Criterion:**
4. **Robust Error Measures:** in Expose
   (a) **Alpha Trimmed Mean Square Error:**
   (b) **M Estimator:**
   (c) **Median Squared Error:**
5. **SF stats**
   (a) **SF Prior Entropy:** Returns the total entropy for the null model.
   (b) **SF Mean Scheme Entropy:** Returns the entropy per instance for the scheme
   (c) **SF Entropy Gain:** Returns the total SF, which is the null model entropy minus the scheme entropy.
   (d) **SF Mean Prior Entropy:** Returns the entropy per instance for the null model.
   (e) **SF Scheme Entropy:** Returns the total entropy for the scheme.
   (f) **SF Mean Entropy Gain:** Returns the SF per instance, which is the null model entropy minus the scheme entropy, per instance.
6. Number_of_training_instances
7. Number_of_testing_instances
8. Elapsed_Time_training
9. Elapsed_Time_testing
10. UserCPU_Time_training
11. UserCPU_Time_testing
12. Serialized_Model_Size
13. Serialized_Train_Set_Size
14. Serialized_Test_Set_Size