Evaluating numeric prediction

p - predicted values

a - actual values

Performance measure	Formula
mean-squared error	$\frac{(p_1-a_1)^2+\ldots+(p_n-a_n)^2}{n}$
root mean-squared error	$\sqrt{\frac{(p_1-a_1)^2+\ldots+(p_n-a_n)^2}{n}}$
mean absolute error	$\frac{\lvert p_1-a_1\rvert+\ldots+\lvert p_n-a_n\rvert}{n}$
relative squared error	$\frac{(p_1-a_1)^2+\ldots+(p_n-a_n)^2}{(a_1-\bar{a})^2+\ldots+(a_n-\bar{a})^2}$, where $\bar{a}=\frac{1}{n}\sum_i a_i$
root relative squared error	$\sqrt{\frac{(p_1-a_1)^2+\ldots+(p_n-a_n)^2}{(a_1-\bar{a})^2+\ldots+(a_n-\bar{a})^2}}$
relative absolute error	$\frac{\lvert p_1-a_1\rvert+\ldots+\lvert p_n-a_n\rvert}{\lvert a_1-\bar{a}\rvert+\ldots+\lvert a_n-\bar{a}\rvert}$
correlation coefficient	$\frac{S_{PA}}{\sqrt{S_P S_A}}$, where $S_{PA}=\frac{\sum_i (p_i-\bar{p})(a_i-\bar{a})}{n-1}$, $S_p=\frac{\sum_i (p_i-\bar{p})^2}{n-1}$, and $S_A=\frac{\sum_i (a_i-\bar{a})^2}{n-1}$

Age	Height	Baseline	pi-ai	Linear regression	pi-ai	Regression tree	pi-ai	Model tree	pi-ai	kNN	pi-ai
2	0.85	1.63	0.78	1.43	0.58	1.39	0.54	1.20	0.35	1.01	0.16
10	1.4	1.63	0.23	1.47	0.07	1.46	0.06	1.47	0.07	1.51	0.11
35	1.7	1.63	-0.07	1.61	-0.09	1.71	0.01	1.71	0.01	1.67	-0.03
70	1.6	1.63	0.03	1.81	0.21	1.71	0.11	1.75	0.15	1.81	0.21
mean-squared error											
root mean-squared error											
mean absolute error											
relative squared error											
root relative squared error											
relative absolute error											
correlation coefficient											

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