Results

Smartphone Price Prediction using Random Forest Regression

Random Forest Regression

Trees	Features per split	n(Train)	n(Validation)	n(Test)	Validation MSE	Test MSE	OOB Error
95	2	747	187	399	41415.532	32241.631	31990.766

Note. The model is optimized with respect to the *out-of-bag mean squared error*.
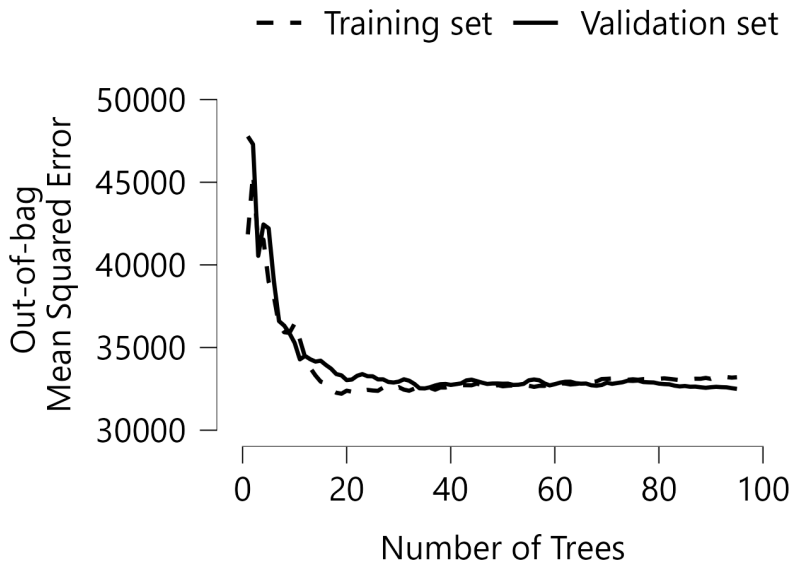
Data Split

Train: 747	Validation: 187	Test: 399	Total: 1333

Model Performance Metrics

	Value
MSE	32241.631
RMSE	179.56
MAE / MAD	110.373
MAPE	31.62%
R^2	0.626

Feature Importance Metrics

	Mean decrease in accuracy	Total increase in node purity	Mean dropout loss
RAM	51099.050	$1.107 \times 10^{+7}$	272.086
Storage	18280.268	$6.463 \times 10^{+6}$	196.893
Brand	18068.199	$5.954 \times 10^{+6}$	216.032
Color	2688.193	$3.642 \times 10^{+6}$	171.546

Note. Mean dropout loss is based on 50 permutations.

Out-of-bag Mean Squared Error Plot

Mean Decrease in Accuracy