FIGURE 1. Indicators of forecast error and goodness-of-fit for the validation set, and fine-tuned hyperparameters according to algorithm

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Algorithm | Without fine-tuning | | | With fine-tuning (10-fold cross-validation) | | | |
| MSE | MAE |  | MSE | MAE |  | Hyperparameters |
| Ridge | 2.256 | 0.556 | -0.981 | 1.335 | 0.525 | -0.171 |  |
| Lasso | 12.156 | 0.741 | -9.671 | 1.140 | 0.911 | -0.000 |  |
| ElasticNet | 1.689 | 0.833 | -0.482 | 1.633 | 0.534 | -0.434 |  |
| Decision Tree | 0.266 | 0.398 | 0.768 | 0.131 | 0.303 | 0.886 |  |
| AdaBoost | 0.146 | 0.321 | 0.872 | 0.123 | 0.288 | 0.893 |  |
| Gradient Boosting | 0.129 | 0.290 | 0.888 | 0.125 | 0.288 | 0.891 |  |
| Random Forest | 0.134 | 0.292 | 0.884 | 0.128 | 0.289 | 0.889 | *out-of-bag samples* |
| Extra Trees | 0.139 | 0.300 | 0.879 | 0.128 | 0.291 | 0.889 | *out-of-bag samples* |

Note: Details on hyperparameters can be found in the research paper.