|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Training | Testing | MSE |  | Posterior SD |
| GBM-BRT | 9256 | 2314 | 0.0646 | 0.9615 | 0.0257 |
| GAM | 2636 | 659 | 0.0121 | 0.5213 | 0.01069 |
| MARS | 6632 | 1657 | 0.0561 | 0.9648 | 0.03397 |
| RF | 2861 | 715 | 0.64824 | 0.5851 | 0.10174 |

*Table 1* shows the results of the evaluation of runtime model skill. nTrain denotes the number of data points used to fit the model with. nTest represents the number of data points that were used to evaluate performance statistics. MSE denotes the mean squared prediction error, measured in log-seconds2. is the squared correlation between observed and predicted values, and is interpreted as fraction of explained variance. Posterior SD is the mean standard deviation of the posterior predictions, measured in log-seconds.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Training | Testing | MSE |  | Posterior SD |
| GBM-BRT | 9256 | 2314 | 0.000245 | 0.8748 | 0.0012 |
| GAM | 2636 | 659 | 0.000718 | 0.8993 | 0.004998 |
| MARS | 6632 | 1657 | 0.000168 | 0.94175 | 0.001421 |
| RF | 2861 | 715 | 0.000034 | 0.9818 | 0.00062 |

*Table 2* shows the results of the evaluation of accuracy model skill.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Execution Time Model |  |  |  |  |
|  | RF | MARS | GBM-BRT | GAM |
| Number of Covariates | -0.03% | 0.02% | -1.67% | 0.25% |
| CPU Cores | -5.55% | -0.37% | -0.04% | -0.63% |
| GB Memory | -0.65% | -4.20% | -0.12% | 0.08% |
| Number of Training Examples | -38.36% | -36.92% | -71.74% | -1.22% |
| Cells | 0.01% | -5.01% | -5.69% | -33.67% |
|  |  |  |  |  |
| Accuracy Model | RF | MARS | GBM-BRT | GAM |
| Number of Covariates | -34.39% | -29.29% | -16.40% | -50.45% |
| CPU Cores | -0.09% | 0.08% | -0.07% | 0.01% |
| GB Memory | -0.02% | -0.53% | -0.30% | 0.00% |
| Number of Training Examples | -45.72% | -26.67% | -67.84% | -0.34% |
| Cells | 0.00% | 0.07% | -0.03% | 0.01% |

*Table 3* shows the reduction in explanatory power (, converted to percent) when a model fit will all terms except one is compared to the full model, for an execution time model (top) and accuracy model (bottom). Results were rounded to two decimal places.

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Fixed Accuracy | Training Examples | covariates |
| GAM | 0.7131 | 9000 | 5 |
| GBM-BRT | 0.8087 | 10000 | 5 |
| MARS | 0.7722 | 1000 | 5 |
| RF | 0.8523 | 10000 | 5 |

***Table 4*** Accuracy-Maximizing Points for each SDM