De\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1902 | 0.6602 | 0.062 | 4.86 | 54.6614 | 7.3933 | 0 | 70.0016 |
| max | 0.2277 | 0.9229 | 0.1978 | 6.0228 | 63.9096 | 7.9944 | 0 | 79.2488 |
| mean | 0.20895 | 0.82303 | 0.11607 | 5.58053 | 60.22961 | 7.75859 | #DIV/0! | 75.73119 |
| std | 0.0139 | 0.084677 | 0.044158 | 0.374105 | 3.008268 | 0.194497 | #DIV/0! | 2.950876 |
| cv | 0.066521 | 0.102885 | 0.380446 | 0.067037 | 0.049947 | 0.025069 | #DIV/0! | 0.038965 |

De\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1004 | 0.6085 | -0.0724 | 4.6373 | 52.1396 | 7.2208 | 0 | 68.6715 |
| max | 0.2468 | 1.0258 | 0.2348 | 6.7295 | 73.0707 | 8.5481 | 0 | 83.806 |
| mean | 0.19874 | 0.82558 | 0.08875 | 5.70612 | 62.0902 | 7.86768 | #DIV/0! | 76.77968 |
| std | 0.04168 | 0.130621 | 0.106533 | 0.643066 | 7.259378 | 0.459264 | #DIV/0! | 4.619155 |
| cv | 0.209723 | 0.158217 | 1.200373 | 0.112698 | 0.116917 | 0.058374 | #DIV/0! | 0.060161 |

Eo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.0719 | 0.727 | 0.0235 | 5.4449 | 60.4165 | 7.7728 | 0 | 74.7874 |
| max | 0.1743 | 0.8243 | 0.1133 | 5.7765 | 66.5372 | 8.157 | 0 | 78.3648 |
| mean | 0.13639 | 0.7654 | 0.08619 | 5.60933 | 62.26385 | 7.88984 | #DIV/0! | 76.69265 |
| std | 0.029973 | 0.031771 | 0.029227 | 0.103678 | 1.991829 | 0.125283 | #DIV/0! | 1.287831 |
| cv | 0.219759 | 0.041509 | 0.339095 | 0.018483 | 0.03199 | 0.015879 | #DIV/0! | 0.016792 |

Eo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1552 | 0.7478 | 0.1003 | 5.4514 | 59.3005 | 7.7007 | 0 | 74.8353 |
| max | 0.2114 | 0.8353 | 0.1297 | 5.6856 | 61.3048 | 7.8297 | 0 | 79.9749 |
| mean | 0.18287 | 0.77855 | 0.11762 | 5.55353 | 60.12319 | 7.75381 | #DIV/0! | 76.0948 |
| std | 0.017703 | 0.031398 | 0.009591 | 0.078126 | 0.65381 | 0.042113 | #DIV/0! | 1.489944 |
| cv | 0.096806 | 0.040329 | 0.08154 | 0.014068 | 0.010875 | 0.005431 | #DIV/0! | 0.01958 |

Ga\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2045 | 0.7473 | 0.1301 | 5.3494 | 57.537 | 7.5853 | 0 | 74.2971 |
| max | 0.2352 | 0.8347 | 0.1556 | 5.5897 | 59.2741 | 7.699 | 0 | 76.1304 |
| mean | 0.22011 | 0.79087 | 0.14292 | 5.47457 | 58.3998 | 7.64186 | #DIV/0! | 75.2451 |
| std | 0.010206 | 0.027188 | 0.009819 | 0.081416 | 0.669428 | 0.043788 | #DIV/0! | 0.645957 |
| cv | 0.046369 | 0.034377 | 0.068705 | 0.014872 | 0.011463 | 0.00573 | #DIV/0! | 0.008585 |

Ga\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2094 | 0.7842 | 0.1206 | 5.443 | 57.6898 | 7.5954 | 0 | 75.0169 |
| max | 0.2283 | 0.8545 | 0.1533 | 5.6546 | 59.9223 | 7.7409 | 0 | 76.4062 |
| mean | 0.22107 | 0.81341 | 0.13757 | 5.53189 | 58.76275 | 7.66556 | #DIV/0! | 75.6078 |
| std | 0.005661 | 0.02274 | 0.01041 | 0.068429 | 0.709234 | 0.046248 | #DIV/0! | 0.472494 |
| cv | 0.025608 | 0.027956 | 0.07567 | 0.01237 | 0.012069 | 0.006033 | #DIV/0! | 0.006249 |

Lstm1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | -0.1028 | 0.9837 | -0.3947 | 6.3955 | 72.6401 | 8.5229 | 0 | 81.258 |
| max | 0.0776 | 1.2534 | -0.0661 | 7.7929 | 95.0339 | 9.7485 | 0 | 89.7386 |
| mean | 0.01496 | 1.10993 | -0.19042 | 6.98873 | 81.11243 | 8.99782 | #DIV/0! | 85.08062 |
| std | 0.059906 | 0.086791 | 0.109915 | 0.451297 | 7.490113 | 0.410227 | #DIV/0! | 2.70922 |
| cv | 4.004432 | 0.078195 | -0.57722 | 0.064575 | 0.092342 | 0.045592 | #DIV/0! | 0.031843 |

Mlnn1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | -0.0692 | 0.8067 | -0.1721 | 5.5035 | 58.2459 | 7.6319 | 0 | 75.4169 |
| max | 0.2336 | 0.9634 | 0.1452 | 6.4164 | 79.8628 | 8.9366 | 0 | 81.8159 |
| mean | 0.11877 | 0.88963 | 0.01577 | 5.95488 | 67.06349 | 8.17648 | #DIV/0! | 78.31106 |
| std | 0.113035 | 0.055337 | 0.116423 | 0.344628 | 7.931553 | 0.481449 | #DIV/0! | 2.074299 |
| cv | 0.95171 | 0.062202 | 7.382547 | 0.057873 | 0.118269 | 0.058882 | #DIV/0! | 0.026488 |
|  |  |  |  |  |  |  |  |  |

Mvo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1339 | 0.7034 | 0.1012 | 5.2841 | 56.7038 | 7.5302 | 0 | 73.4451 |
| max | 0.2217 | 0.825 | 0.1678 | 5.6632 | 61.239 | 7.8255 | 0 | 77.5291 |
| mean | 0.19978 | 0.76151 | 0.1379 | 5.4645 | 58.74092 | 7.66365 | #DIV/0! | 75.27104 |
| std | 0.025312 | 0.038268 | 0.022927 | 0.136426 | 1.561694 | 0.101581 | #DIV/0! | 1.271663 |
| cv | 0.126697 | 0.050253 | 0.166256 | 0.024966 | 0.026586 | 0.013255 | #DIV/0! | 0.016894 |

Mvo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1875 | 0.7202 | 0.1108 | 5.3295 | 57.2844 | 7.5686 | 0 | 73.6382 |
| max | 0.2284 | 0.8012 | 0.1593 | 5.5828 | 60.5861 | 7.7837 | 0 | 76.0542 |
| mean | 0.20264 | 0.7717 | 0.13373 | 5.46589 | 59.02501 | 7.6825 | #DIV/0! | 75.06065 |
| std | 0.013428 | 0.025405 | 0.014844 | 0.080181 | 1.011422 | 0.06585 | #DIV/0! | 0.710057 |
| cv | 0.066267 | 0.032921 | 0.110999 | 0.014669 | 0.017135 | 0.008571 | #DIV/0! | 0.00946 |

Pso\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1302 | 0.7372 | 0.0799 | 5.3678 | 58.0003 | 7.6158 | 0 | 74.1928 |
| max | 0.2175 | 0.797 | 0.1488 | 5.6779 | 62.6913 | 7.9178 | 0 | 76.8311 |
| mean | 0.19062 | 0.77037 | 0.12536 | 5.51067 | 59.5962 | 7.71922 | #DIV/0! | 75.4724 |
| std | 0.025754 | 0.018258 | 0.023828 | 0.108527 | 1.622935 | 0.10453 | #DIV/0! | 0.825988 |
| cv | 0.135105 | 0.0237 | 0.190074 | 0.019694 | 0.027232 | 0.013542 | #DIV/0! | 0.010944 |

Pso\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1496 | 0.7138 | 0.0518 | 5.2846 | 57.2342 | 7.5653 | 0 | 73.7677 |
| max | 0.2255 | 0.8539 | 0.16 | 5.8154 | 64.6105 | 8.0381 | 0 | 77.2481 |
| mean | 0.20199 | 0.77907 | 0.13289 | 5.48845 | 59.08249 | 7.68534 | #DIV/0! | 75.32864 |
| std | 0.024059 | 0.035616 | 0.032512 | 0.144348 | 2.216025 | 0.14219 | #DIV/0! | 0.964392 |
| cv | 0.119112 | 0.045716 | 0.244651 | 0.0263 | 0.037507 | 0.018501 | #DIV/0! | 0.012802 |

Rnn1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | -0.057 | 0.9051 | -0.3306 | 6.0538 | 69.5105 | 8.3373 | 0 | 78.8413 |
| max | 0.0914 | 1.218 | -0.0202 | 7.5778 | 90.6607 | 9.5216 | 0 | 88.5785 |
| mean | 0.04613 | 1.05022 | -0.12658 | 6.70575 | 76.76251 | 8.75292 | #DIV/0! | 83.32973 |
| std | 0.053704 | 0.096116 | 0.107176 | 0.475828 | 7.302076 | 0.406646 | #DIV/0! | 2.956444 |
| cv | 1.164179 | 0.09152 | -0.84671 | 0.070958 | 0.095126 | 0.046458 | #DIV/0! | 0.035479 |

Wdo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1442 | 0.823 | 0.011 | 5.6192 | 60.676 | 7.7895 | 0 | 75.9173 |
| max | 0.2191 | 0.9723 | 0.1095 | 6.2591 | 67.3856 | 8.2089 | 0 | 80.7184 |
| mean | 0.1777 | 0.88226 | 0.0711 | 5.83993 | 63.29172 | 7.95469 | #DIV/0! | 77.7038 |
| std | 0.026605 | 0.046377 | 0.030016 | 0.205814 | 2.044172 | 0.127935 | #DIV/0! | 1.522068 |
| cv | 0.149719 | 0.052566 | 0.422163 | 0.035242 | 0.032298 | 0.016083 | #DIV/0! | 0.019588 |

Wdo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1565 | 0.8139 | 0.0314 | 5.474 | 59.2595 | 7.698 | 0 | 74.8715 |
| max | 0.2159 | 0.927 | 0.1303 | 6.0691 | 65.9995 | 8.124 | 0 | 79.0819 |
| mean | 0.20013 | 0.87232 | 0.09614 | 5.75399 | 61.58707 | 7.84654 | #DIV/0! | 77.05098 |
| std | 0.017823 | 0.040478 | 0.033466 | 0.199771 | 2.280454 | 0.144269 | #DIV/0! | 1.419739 |
| cv | 0.089058 | 0.046403 | 0.348098 | 0.034719 | 0.037028 | 0.018386 | #DIV/0! | 0.018426 |

Woa\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1887 | 0.796 | 0.0979 | 5.4302 | 57.4446 | 7.5792 | 0 | 74.624 |
| max | 0.2332 | 0.8832 | 0.1569 | 5.775 | 61.4666 | 7.8401 | 0 | 77.1808 |
| mean | 0.21142 | 0.84031 | 0.11927 | 5.6173 | 60.00997 | 7.74629 | #DIV/0! | 76.11179 |
| std | 0.011869 | 0.026191 | 0.016889 | 0.100538 | 1.151081 | 0.074618 | #DIV/0! | 0.760693 |
| cv | 0.056142 | 0.031169 | 0.141601 | 0.017898 | 0.019181 | 0.009633 | #DIV/0! | 0.009994 |

Woa\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1579 | 0.8256 | 0.0526 | 5.5227 | 58.7968 | 7.6679 | 0 | 75.6501 |
| max | 0.2288 | 0.9272 | 0.1371 | 5.9451 | 64.5562 | 8.0347 | 0 | 78.1107 |
| mean | 0.19836 | 0.85067 | 0.10204 | 5.68649 | 61.18535 | 7.8213 | #DIV/0! | 76.56288 |
| std | 0.023929 | 0.030485 | 0.027191 | 0.121303 | 1.853441 | 0.118067 | #DIV/0! | 0.792555 |
| cv | 0.120634 | 0.035836 | 0.266474 | 0.021332 | 0.030292 | 0.015096 | #DIV/0! | 0.010352 |