De\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.256 | 1.2526 | 0.2395 | 7.3292 | 160.1026 | 12.6532 | 0 | 108.2886 |
| max | 0.2781 | 1.5885 | 0.2763 | 8.2832 | 168.2242 | 12.9701 | 0 | 110.3789 |
| mean | 0.26427 | 1.41421 | 0.25936 | 7.81659 | 163.8399 | 12.79972 | #DIV/0! | 109.2894 |
| std | 0.006719 | 0.109061 | 0.010265 | 0.288787 | 2.266678 | 0.088452 | #DIV/0! | 0.658484 |
| cv | 0.025425 | 0.077118 | 0.039579 | 0.036945 | 0.013835 | 0.00691 | #DIV/0! | 0.006025 |

De\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2102 | 1.1958 | 0.1704 | 7.1734 | 159.958 | 12.6475 | 0 | 107.9055 |
| max | 0.2778 | 1.7359 | 0.2769 | 8.2187 | 183.5268 | 13.5472 | 0 | 143.3785 |
| mean | 0.25101 | 1.37419 | 0.23952 | 7.59516 | 168.2301 | 12.96782 | #DIV/0! | 112.5953 |
| std | 0.020649 | 0.181238 | 0.031997 | 0.420572 | 7.07846 | 0.270435 | #DIV/0! | 10.86554 |
| cv | 0.082264 | 0.131887 | 0.133589 | 0.055374 | 0.042076 | 0.020854 | #DIV/0! | 0.096501 |

Eo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.211 | 1.4173 | 0.207 | 7.794 | 160.7987 | 12.6806 | 0 | 108.9248 |
| max | 0.2767 | 1.5902 | 0.2731 | 8.1097 | 175.4317 | 13.2451 | 0 | 110.0407 |
| mean | 0.24418 | 1.51062 | 0.24035 | 7.93616 | 168.0494 | 12.96221 | #DIV/0! | 109.5593 |
| std | 0.021286 | 0.062118 | 0.02158 | 0.114737 | 4.774677 | 0.18424 | #DIV/0! | 0.393336 |
| cv | 0.087172 | 0.041121 | 0.089788 | 0.014457 | 0.028412 | 0.014214 | #DIV/0! | 0.00359 |

Eo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2446 | 1.4198 | 0.2414 | 7.7962 | 159.6934 | 12.637 | 0 | 109.1717 |
| max | 0.2813 | 1.4858 | 0.2781 | 7.9189 | 167.8059 | 12.954 | 0 | 109.637 |
| mean | 0.26493 | 1.4366 | 0.2615 | 7.84886 | 163.3669 | 12.7811 | #DIV/0! | 109.3009 |
| std | 0.012439 | 0.024822 | 0.012541 | 0.044731 | 2.773769 | 0.108441 | #DIV/0! | 0.15991 |
| cv | 0.046953 | 0.017278 | 0.047958 | 0.005699 | 0.016979 | 0.008484 | #DIV/0! | 0.001463 |

Ga\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2715 | 1.4328 | 0.2666 | 7.749 | 160.0692 | 12.6518 | 0 | 109.1906 |
| max | 0.2781 | 1.4891 | 0.2764 | 7.9374 | 162.2393 | 12.7373 | 0 | 109.6033 |
| mean | 0.27459 | 1.45195 | 0.27179 | 7.81417 | 161.0878 | 12.692 | #DIV/0! | 109.3409 |
| std | 0.002412 | 0.020977 | 0.003357 | 0.060926 | 0.743303 | 0.029287 | #DIV/0! | 0.138645 |
| cv | 0.008783 | 0.014447 | 0.012353 | 0.007797 | 0.004614 | 0.002307 | #DIV/0! | 0.001268 |

Ga\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2706 | 1.4542 | 0.2667 | 7.8102 | 159.372 | 12.6243 | 0 | 109.3567 |
| max | 0.2828 | 1.577 | 0.2796 | 7.9987 | 162.2105 | 12.7362 | 0 | 109.891 |
| mean | 0.27603 | 1.4971 | 0.27229 | 7.87223 | 160.984 | 12.68791 | #DIV/0! | 109.5297 |
| std | 0.003231 | 0.039711 | 0.003727 | 0.06377 | 0.822498 | 0.032418 | #DIV/0! | 0.185226 |
| cv | 0.011707 | 0.026525 | 0.013688 | 0.008101 | 0.005109 | 0.002555 | #DIV/0! | 0.001691 |

Lstm1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2346 | 1.5847 | 0.2265 | 8.0082 | 164.2992 | 12.8179 | 0 | 110.185 |
| max | 0.2613 | 1.7995 | 0.2573 | 8.4292 | 171.1131 | 13.081 | 0 | 111.4716 |
| mean | 0.24631 | 1.68816 | 0.24082 | 8.18337 | 167.9434 | 12.95902 | #DIV/0! | 110.7764 |
| std | 0.00923 | 0.064573 | 0.010544 | 0.131134 | 2.332832 | 0.090052 | #DIV/0! | 0.39235 |
| cv | 0.037474 | 0.038251 | 0.043783 | 0.016024 | 0.013891 | 0.006949 | #DIV/0! | 0.003542 |

Mlnn1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2607 | 1.3782 | 0.2592 | 7.7696 | 160.4588 | 12.6672 | 0 | 108.9829 |
| max | 0.2801 | 1.6106 | 0.2746 | 8.0272 | 163.8863 | 12.8018 | 0 | 110.1245 |
| mean | 0.2738 | 1.5187 | 0.26987 | 7.89902 | 161.5149 | 12.70879 | #DIV/0! | 109.6559 |
| std | 0.005624 | 0.064248 | 0.00459 | 0.083723 | 1.01839 | 0.039987 | #DIV/0! | 0.323463 |
| cv | 0.020541 | 0.042305 | 0.017009 | 0.010599 | 0.006305 | 0.003146 | #DIV/0! | 0.00295 |

Mvo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.26 | 1.4306 | 0.2557 | 7.7887 | 161.5649 | 12.7108 | 0 | 109.2507 |
| max | 0.2757 | 1.5552 | 0.2696 | 7.9982 | 164.6399 | 12.8312 | 0 | 109.8529 |
| mean | 0.2683 | 1.47787 | 0.26416 | 7.89368 | 162.7775 | 12.75838 | #DIV/0! | 109.4999 |
| std | 0.004799 | 0.045748 | 0.004354 | 0.06534 | 0.962531 | 0.037703 | #DIV/0! | 0.205076 |
| cv | 0.017885 | 0.030955 | 0.016484 | 0.008277 | 0.005913 | 0.002955 | #DIV/0! | 0.001873 |

Mvo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2339 | 1.4136 | 0.229 | 7.7996 | 159.3171 | 12.6221 | 0 | 109.2289 |
| max | 0.2825 | 1.5292 | 0.2798 | 7.9822 | 170.5662 | 13.0601 | 0 | 110.4005 |
| mean | 0.26387 | 1.46902 | 0.26043 | 7.87763 | 163.6041 | 12.78995 | #DIV/0! | 109.5481 |
| std | 0.01751 | 0.038103 | 0.017924 | 0.05592 | 3.968027 | 0.154548 | #DIV/0! | 0.34694 |
| cv | 0.066359 | 0.025938 | 0.068825 | 0.007099 | 0.024254 | 0.012084 | #DIV/0! | 0.003167 |

Pso\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.249 | 1.4118 | 0.2441 | 7.8178 | 160.951 | 12.6866 | 0 | 109.1716 |
| max | 0.2757 | 1.5128 | 0.2724 | 7.9885 | 167.2115 | 12.931 | 0 | 109.6616 |
| mean | 0.26104 | 1.45612 | 0.25747 | 7.88243 | 164.2618 | 12.81622 | #DIV/0! | 109.4147 |
| std | 0.00937 | 0.036382 | 0.009562 | 0.051407 | 2.115484 | 0.082528 | #DIV/0! | 0.146216 |
| cv | 0.035896 | 0.024985 | 0.03714 | 0.006522 | 0.012879 | 0.006439 | #DIV/0! | 0.001336 |

Pso\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.257 | 1.4233 | 0.2528 | 7.8018 | 160.3514 | 12.663 | 0 | 109.2434 |
| max | 0.2799 | 1.5815 | 0.2751 | 7.9269 | 165.2861 | 12.8564 | 0 | 109.8608 |
| mean | 0.27122 | 1.49161 | 0.26758 | 7.88101 | 162.022 | 12.72869 | #DIV/0! | 109.54 |
| std | 0.00691 | 0.051282 | 0.006737 | 0.04035 | 1.487841 | 0.058329 | #DIV/0! | 0.200061 |
| cv | 0.025478 | 0.03438 | 0.025176 | 0.00512 | 0.009183 | 0.004582 | #DIV/0! | 0.001826 |

Rnn1hl

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.1269 | 1.549 | 0.1147 | 7.9438 | 164.5468 | 12.8276 | 0 | 110.0163 |
| max | 0.259 | 2.001 | 0.2562 | 9.0088 | 195.8344 | 13.9941 | 0 | 113.2474 |
| mean | 0.22633 | 1.75055 | 0.21926 | 8.3438 | 172.7139 | 13.13799 | #DIV/0! | 111.2477 |
| std | 0.039391 | 0.124034 | 0.041784 | 0.29552 | 9.239816 | 0.344565 | #DIV/0! | 0.897492 |
| cv | 0.174044 | 0.070854 | 0.190569 | 0.035418 | 0.053498 | 0.026227 | #DIV/0! | 0.008068 |

Wdo\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2176 | 1.4291 | 0.2139 | 7.5929 | 161.3298 | 12.7016 | 0 | 109.1577 |
| max | 0.2764 | 1.8054 | 0.2707 | 8.4754 | 173.8894 | 13.1867 | 0 | 111.4505 |
| mean | 0.2596 | 1.60432 | 0.25494 | 8.0054 | 164.8199 | 12.83722 | #DIV/0! | 110.1839 |
| std | 0.018309 | 0.130992 | 0.019781 | 0.290571 | 4.375423 | 0.169188 | #DIV/0! | 0.820116 |
| cv | 0.070529 | 0.08165 | 0.07759 | 0.036297 | 0.026547 | 0.013179 | #DIV/0! | 0.007443 |

Wdo\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2595 | 1.4489 | 0.2425 | 7.6686 | 159.9547 | 12.6473 | 0 | 109.1266 |
| max | 0.2787 | 1.8379 | 0.2769 | 8.6324 | 167.5679 | 12.9448 | 0 | 111.7429 |
| mean | 0.26977 | 1.60243 | 0.26213 | 8.03179 | 163.2261 | 12.77563 | #DIV/0! | 110.1538 |
| std | 0.00777 | 0.142021 | 0.011875 | 0.321682 | 2.627852 | 0.102746 | #DIV/0! | 0.902702 |
| cv | 0.028804 | 0.088628 | 0.045302 | 0.040051 | 0.016099 | 0.008042 | #DIV/0! | 0.008195 |

Woa\_lstm

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2602 | 1.4293 | 0.2564 | 7.8248 | 160.872 | 12.6835 | 0 | 109.2317 |
| max | 0.2759 | 1.5621 | 0.2728 | 7.9328 | 164.503 | 12.8259 | 0 | 109.8478 |
| mean | 0.26739 | 1.47762 | 0.26368 | 7.88945 | 162.8869 | 12.76261 | #DIV/0! | 109.5495 |
| std | 0.005899 | 0.035263 | 0.006247 | 0.042053 | 1.380917 | 0.054141 | #DIV/0! | 0.177837 |
| cv | 0.022062 | 0.023865 | 0.023693 | 0.00533 | 0.008478 | 0.004242 | #DIV/0! | 0.001623 |

Woa\_mlp

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ev | msle | r2 | mae | mse | rmse | mape | smape |
| min | 0.2275 | 1.4511 | 0.2255 | 7.8146 | 160.5993 | 12.6728 | 0 | 109.3259 |
| max | 0.2771 | 1.7862 | 0.274 | 8.4457 | 171.3326 | 13.0894 | 0 | 111.2659 |
| mean | 0.25711 | 1.55671 | 0.25279 | 8.00106 | 165.2957 | 12.85597 | #DIV/0! | 110.0376 |
| std | 0.016529 | 0.100567 | 0.017455 | 0.18005 | 3.864197 | 0.150073 | #DIV/0! | 0.53939 |
| cv | 0.064287 | 0.064602 | 0.069051 | 0.022503 | 0.023377 | 0.011673 | #DIV/0! | 0.004902 |