

| Dataset                          | Task   | Size (in MB) | # Rows | # Features | # Numerical Features | # Categorical Features | ML Model | F1: KGFarm | F1: AutoLearn | Accuracy: KGFarm | Accuracy: AutoLearn | Time: KGFarm | Time: AutoLearn | Memory: KGFarm | Memory: AutoLearn (in MB) |
|----------------------------------|--------|--------------|--------|------------|----------------------|------------------------|----------|------------|---------------|------------------|---------------------|--------------|-----------------|----------------|---------------------------|
| ionosphere                       | binary | 0.094        | 351    | 34         | 34                   | 0                      | KNN      | 89.3       | 88.94         | 84.91            | 84.33               | 12.76        | 195.51          | 24.58          | 36                        |
|                                  |        |              |        |            |                      |                        | RF       | 94.76      | 94.73         | 93.18            | 93.17               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 94.5       | 94.92         | 92.61            | 93.16               |              |                 |                |                           |
| breast_cancer_wisconsin          | binary | 0.135        | 569    | 30         | 30                   | 0                      | KNN      | 93.1       | 96.13         | 95.09            | 97.18               | 10.8         | 286.31          | 11.67          | 42                        |
|                                  |        |              |        |            |                      |                        | RF       | 94.06      | 93.5          | 95.79            | 95.26               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 95.62      | 97.55         | 96.84            | 98.24               |              |                 |                |                           |
| Australian                       | binary | 0.079        | 690    | 14         | 14                   | 0                      | KNN      | 79.97      | 83.29         | 82.75            | 85.21               | 9.62         | 99.19           | 14.79          | 31                        |
|                                  |        |              |        |            |                      |                        | RF       | 85.93      | 82.11         | 87.39            | 84.34               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 84.53      | 80.35         | 86.23            | 83.04               |              |                 |                |                           |
| blood-transfusion-service-center | binary | 0.029        | 748    | 4          | 4                    | 0                      | KNN      | 36.01      | 40.51         | 74.07            | 76.07               | 6.44         | 8.73            | 1.99           | 3                         |
|                                  |        |              |        |            |                      |                        | RF       | 36.65      | 37.77         | 67.38            | 74.73               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 22.55      | 44.34         | 76.74            | 79.55               |              |                 |                |                           |
| fri_c1_1000_25                   | binary | 0.198        | 1000   | 25         | 25                   | 0                      | KNN      | 71.57      | 76.16         | 74.3             | 79.41               | 12.53        | 201.67          | 9.34           | 10                        |
|                                  |        |              |        |            |                      |                        | RF       | 88.26      | 81.59         | 89.6             | 84.61               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 79.7       | 87.59         | 81.6             | 88.91               |              |                 |                |                           |
| Hill_Valley_with_noise           | binary | 0.934        | 1212   | 100        | 100                  | 0                      | KNN      | 56.02      | 54.36         | 51.9             | 52.64               | 6.3          | 575.6           | 129.03         | 236                       |
|                                  |        |              |        |            |                      |                        | RF       | 54.95      | 49.29         | 56.02            | 53.73               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 51.58      | 58.2          | 53.96            | 51.57               |              |                 |                |                           |
| Hill_Valley_without_noise        | binary | 0.934        | 1212   | 100        | 100                  | 0                      | KNN      | 57.11      | 58.24         | 53.63            | 56.85               | 6.91         | 1186.55         | 120.34         | 128                       |
|                                  |        |              |        |            |                      |                        | RF       | 56.65      | 58.61         | 56.52            | 59.82               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 60.19      | 47.87         | 56.28            | 51.15               |              |                 |                |                           |
| pc4                              | binary | 0.413        | 1458   | 37         | 37                   | 0                      | KNN      | 54.44      | 43.37         | 89.64            | 88.89               | 15.3         | 2016.55         | 24.27          | 124                       |
|                                  |        |              |        |            |                      |                        | RF       | 47.53      | 41.19         | 90.19            | 89.3                |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 61.21      | 54.58         | 90.81            | 90.74               |              |                 |                |                           |
| OVA_Breast                       | binary | 128.919      | 1545   | 10936      | 10936                | 0                      | KNN      | 98.05      |               | 96.96            |                     | 312.39       | time out        | 322.8          | time out                  |
|                                  |        |              |        |            |                      |                        | RF       | 97.93      | time out      | 96.76            | time out            |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 97.93      |               | 96.76            |                     |              |                 |                |                           |
| kc1                              | binary | 0.34         | 2109   | 21         | 21                   | 0                      | KNN      | 31.16      | 32.49         | 83.55            | 83.55               | 8.13         | 663.97          | 65.22          | 129                       |
|                                  |        |              |        |            |                      |                        | RF       | 36.11      | 35.12         | 85.25            | 84.54               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 29.92      | 27.7          | 85.35            | 85.87               |              |                 |                |                           |
| quake                            | binary | 0.067        | 2178   | 3          | 3                    | 0                      | KNN      | 59.12      |               | 51.61            |                     | 6.5          | error           | 101.58         | error                     |
|                                  |        |              |        |            |                      |                        | RF       | 59.25      | error         | 52.2             | error               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 68.94      |               | 54.73            |                     |              |                 |                |                           |
| ozone-level-8hr                  | binary | 1.411        | 2534   | 72         | 72                   | 0                      | KNN      | 26.04      |               | 93.76            |                     | 25.23        | time out        | 166.58         | time out                  |
|                                  |        |              |        |            |                      |                        | RF       | 9.31       | time out      | 93.92            | time out            |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 41.53      |               | 93.57            |                     |              |                 |                |                           |
| jasmine                          | binary | 3.301        | 2984   | 144        | 144                  | 0                      | KNN      | 79.82      |               | 78.05            |                     | 84.69        | time out        | 221.07         | time out                  |
|                                  |        |              |        |            |                      |                        | RF       | 83.82      | time out      | 82.1             | time out            |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 78.64      |               | 77.91            |                     |              |                 |                |                           |
| space_ga_737                     | binary | 0.166        | 3107   | 6          | 6                    | 0                      | KNN      | 78.3       | 79.88         | 77.37            | 80.27               | 7.26         | 187.72          | 81.85          | 463                       |
|                                  |        |              |        |            |                      |                        | RF       | 79.04      | 79.33         | 78.44            | 80.59               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 78.7       | 60.19         | 77.44            | 65.85               |              |                 |                |                           |
| kr-vs-kp                         | binary | 0.902        | 3196   | 36         | 0                    | 36                     | KNN      | 94.07      |               | 93.74            |                     | 27.59        | time out        | 102.69         | time out                  |
|                                  |        |              |        |            |                      |                        | RF       | 97.11      | time out      | 96.96            | time out            |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 97.13      |               | 97               |                     |              |                 |                |                           |
| pollen_871                       | binary | 0.176        | 3848   | 5          | 5                    | 0                      | KNN      | 49.99      |               | 49.35            |                     | 10.94        | error           | 111.21         | error                     |
|                                  |        |              |        |            |                      |                        | RF       | 49.96      | error         | 50.29            | error               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 53.36      |               | 49.4             |                     |              |                 |                |                           |
| analcatdata_supreme              | binary | 0.247        | 4052   | 7          | 7                    | 0                      | KNN      | 96.73      | 94.45         | 98.47            | 97.36               | 7.66         | 526.05          | 133.55         | 2                         |
|                                  |        |              |        |            |                      |                        | RF       | 98.39      | 98.7          | 99.23            | 99.38               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 94.57      | 98.24         | 97.31            | 99.16               |              |                 |                |                           |
| spambase                         | binary | 2.036        | 4601   | 57         | 57                   | 0                      | KNN      | 88.28      |               | 91.09            |                     | 55.14        | time out        | 281.5          | time out                  |
|                                  |        |              |        |            |                      |                        | RF       | 94.3       | time out      | 95.57            | time out            |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 92.38      |               | 94.02            |                     |              |                 |                |                           |
| waveform-5000                    | binary | 1.564        | 5000   | 40         | 40                   | 0                      | KNN      | 73.4       | 76.85         | 82.32            | 84.34               | 52.15        | 16182.42        | 157.08         | 697                       |
|                                  |        |              |        |            |                      |                        | RF       | 83.3       | 75.22         | 88.86            | 84.6                |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 81.98      | 81.62         | 87.34            | 87.76               |              |                 |                |                           |
| sylvine                          | binary | 0.821        | 5124   | 20         | 20                   | 0                      | KNN      | 82.36      | 71.04         | 81.15            | 71.68               | 25.6         | 6839.11         | 131.88         | 207                       |
|                                  |        |              |        |            |                      |                        | RF       | 74.22      | 69.76         | 80.84            | 75.68               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 84.35      | 82.29         | 86.94            | 83.74               |              |                 |                |                           |
| phoneme                          | binary | 0.247        | 5404   | 5          | 5                    | 0                      | KNN      | 78.13      | 78.3          | 87.64            | 87.6                | 18.55        | 738.42          | 100.39         | 2                         |
|                                  |        |              |        |            |                      |                        | RF       | 82.69      | 79.85         | 90.03            | 88.62               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | NN       | 72.97      | 78.6          | 84.29            | 87.55               |              |                 |                |                           |
|                                  |        |              |        |            |                      |                        | KNN      | 67.11      |               | 66.76            |                     |              |                 |                |                           |

|                        |        |        |       |      |      |   |     |       |               |       |               |         |               |         |               |
|------------------------|--------|--------|-------|------|------|---|-----|-------|---------------|-------|---------------|---------|---------------|---------|---------------|
| christine              | binary | 67.667 | 5418  | 1636 | 1636 | 0 | RF  | 67.5  | time out      | 68.72 | time out      | 165.06  | time out      | 100.09  | time out      |
|                        |        |        |       |      |      |   | NN  | 69.62 |               | 68.11 |               |         |               |         |               |
| page-blocks            | binary | 0.459  | 5473  | 10   | 10   | 0 | KNN | 98.46 | 98.34         | 97.22 | 97            | 19.9    | 2880.76       | 95.2    | 53            |
|                        |        |        |       |      |      |   | RF  | 98.66 | 98.53         | 97.59 | 97.37         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 98.6  | 98.32         | 97.48 | 96.97         |         |               |         |               |
| wind_847               | binary | 0.752  | 6574  | 14   | 14   | 0 | KNN | 84.29 | 85.13         | 83.27 | 83.97         | 37.39   | 4783.88       | 136.19  | 3             |
|                        |        |        |       |      |      |   | RF  | 87.21 | 84.22         | 86.2  | 83.6          |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 87.37 | 87.15         | 86.48 | 86.29         |         |               |         |               |
| delta_ailerons         | binary | 0.326  | 7129  | 5    | 5    | 0 | KNN | 58.72 | 94.33         | 67.75 | 93.94         | 33.89   | 1158.02       | 113.96  | 467           |
|                        |        |        |       |      |      |   | RF  | 52.35 | 94.44         | 64.86 | 94.11         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 61.85 | 94.53         | 69.95 | 94.14         |         |               |         |               |
| puma8NH_816            | binary | 0.563  | 8192  | 8    | 8    | 0 | KNN | 81.84 | 78.66         | 81.63 | 78.5          | 25.37   | 2010.28       | 133.21  | 5             |
|                        |        |        |       |      |      |   | RF  | 82.36 | 80.99         | 82.09 | 81.34         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 83.88 | 81.11         | 83.64 | 81.17         |         |               |         |               |
| kin8nm_807             | binary | 0.563  | 8192  | 8    | 8    | 0 | KNN | 79.96 | 78.22         | 79.8  | 78.25         | 46.26   | 2681.61       | 91.96   | 0             |
|                        |        |        |       |      |      |   | RF  | 80.93 | 76.71         | 80.74 | 77.64         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 84.93 | 88.31         | 84.73 | 88.07         |         |               |         |               |
| cpu_small_735          | binary | 0.813  | 8192  | 12   | 12   | 0 | KNN | 84.45 | 68.53         | 90.91 | 85.22         | 23.56   | 10350.33      | 121.98  | 11            |
|                        |        |        |       |      |      |   | RF  | 86.78 | 58.08         | 92.37 | 74.61         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 86.65 | 73.01         | 92.14 | 85.95         |         |               |         |               |
| cpu_act_761            | binary | 1.375  | 8192  | 21   | 21   | 0 | KNN | 85.48 |               | 91.52 |               | 35.43   | time out      | 150.34  | time out      |
|                        |        |        |       |      |      |   | RF  | 88.61 | time out      | 93.36 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 89.37 |               | 93.7  |               |         |               |         |               |
| puma32H_752            | binary | 2.063  | 8192  | 32   | 32   | 0 | KNN | 57.14 | 57.1          | 56.41 | 56.91         | 57      | 10016.43      | 135.69  | 491           |
|                        |        |        |       |      |      |   | RF  | 63.32 | 77.66         | 62.94 | 78.81         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 64.28 | 57.79         | 63.17 | 57.79         |         |               |         |               |
| bank32nh_833           | binary | 2.063  | 8192  | 32   | 32   | 0 | KNN | 84.65 |               | 76.95 |               | 46.4    | time out      | 357.59  | time out      |
|                        |        |        |       |      |      |   | RF  | 86.52 | time out      | 80.49 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 86.02 |               | 80.51 |               |         |               |         |               |
| mc1                    | binary | 2.754  | 9466  | 38   | 38   | 0 | KNN | 43.19 |               | 99.46 |               | 42.25   | time out      | 193     | time out      |
|                        |        |        |       |      |      |   | RF  | 40.85 | time out      | 98.95 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 39.26 |               | 99.37 |               |         |               |         |               |
| delta_elevators        | binary | 0.508  | 9517  | 6    | 6    | 0 | KNN | 84.75 | 86.81         | 84.08 | 86.78         | 25.92   | 3311.39       | 218.92  | 281           |
|                        |        |        |       |      |      |   | RF  | 86.34 | 86.83         | 85.68 | 87.1          |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 87.24 | 88.23         | 86.58 | 88.13         |         |               |         |               |
| mammography            | binary | 0.597  | 11183 | 6    | 6    | 0 | KNN | 66.54 | 64.01         | 98.68 | 98.65         | 18.98   | 4675          | 183.36  | 3             |
|                        |        |        |       |      |      |   | RF  | 63.03 | 63.59         | 98.66 | 98.65         |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 67.14 | 66.91         | 98.68 | 98.71         |         |               |         |               |
| ailerons               | binary | 4.301  | 13750 | 40   | 40   | 0 | KNN | 65.31 |               | 56.35 |               | 71.19   | time out      | 122.19  | time out      |
|                        |        |        |       |      |      |   | RF  | 69.74 | time out      | 78.7  | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 71.79 |               | 68.37 |               |         |               |         |               |
| eeg-eye-state          | binary | 1.714  | 14980 | 14   | 14   | 0 | KNN | 22.29 |               | 53.27 |               | 36.03   | time out      | 111.93  | time out      |
|                        |        |        |       |      |      |   | RF  | 18.41 | time out      | 56.51 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 12.38 |               | 53.05 |               |         |               |         |               |
| MagicTelescope         | binary | 1.741  | 19020 | 11   | 11   | 0 | KNN | 95.31 |               | 96.76 |               | 61.69   | time out      | 48.68   | time out      |
|                        |        |        |       |      |      |   | RF  | 99.97 | time out      | 99.98 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 99.07 |               | 99.34 |               |         |               |         |               |
| riccardo               | binary | 655.67 | 20000 | 4296 | 4296 | 0 | KNN | 93.05 |               | 96.27 |               | 1614.95 | time out      | 158.09  | time out      |
|                        |        |        |       |      |      |   | RF  | 99.25 | time out      | 99.62 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 96.79 |               | 98.34 |               |         |               |         |               |
| guillermo              | binary | 655.67 | 20000 | 4296 | 4296 | 0 | KNN | 72.08 |               | 77.58 |               | 1595.99 | time out      | 102.96  | time out      |
|                        |        |        |       |      |      |   | RF  | 28.52 | time out      | 66.04 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 64.65 |               | 72.09 |               |         |               |         |               |
| Amazon_employee_access | binary | 2.5    | 32769 | 9    | 9    | 0 | KNN | 96.79 |               | 93.8  |               | 62.77   | time out      | 672.39  | time out      |
|                        |        |        |       |      |      |   | RF  | 97.24 | time out      | 94.72 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 97.03 |               | 94.24 |               |         |               |         |               |
| nomao                  | binary | 31.291 | 34465 | 118  | 118  | 0 | KNN | 95.59 |               | 93.7  |               | 145.67  | time out      | 67.89   | time out      |
|                        |        |        |       |      |      |   | RF  | 95.12 | time out      | 93.03 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 95.1  |               | 92.98 |               |         |               |         |               |
| electricity            | binary | 3.111  | 45312 | 8    | 8    | 0 | KNN | 79.88 |               | 83.3  |               | 277.84  | time out      | 162.22  | time out      |
|                        |        |        |       |      |      |   | RF  | 86.14 | time out      | 88.51 | time out      |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 75.95 |               | 80.27 |               |         |               |         |               |
| numera128.6            | binary | 16.167 | 96320 | 21   | 21   | 0 | KNN | 51.78 |               | 50.58 |               | 815.3   | out of memory | 1538.75 | out of memory |
|                        |        |        |       |      |      |   | RF  | 51.81 | out of memory | 50.97 | out of memory |         |               |         |               |
|                        |        |        |       |      |      |   | NN  | 55.57 |               | 51.41 |               |         |               |         |               |

|           |        |        |        |    |    |   |     |       |               |       |               |         |               |         |               |
|-----------|--------|--------|--------|----|----|---|-----|-------|---------------|-------|---------------|---------|---------------|---------|---------------|
| MiniBooNE | binary | 49.74  | 130064 | 50 | 50 | 0 | KNN | 76.43 | out of memory | 86.94 | out of memory | 717.99  | out of memory | 2364.48 | out of memory |
|           |        |        |        |    |    |   | RF  | 80.22 |               | 89.11 |               |         |               |         |               |
|           |        |        |        |    |    |   | NN  | 76.4  |               | 87.42 |               |         |               |         |               |
| airlines  | binary | 32.921 | 539383 | 7  | 4  | 3 | KNN | 50.56 | out of memory | 57.86 | out of memory | 4295.61 | out of memory | 4129.69 | out of memory |
|           |        |        |        |    |    |   | RF  | 55.6  |               | 60.35 |               |         |               |         |               |
|           |        |        |        |    |    |   | NN  | 49.34 |               | 58.95 |               |         |               |         |               |

| Dataset                                | Task       | Size (in MB) | # Rows | # Features | # Numerical Features | # Categorical Features | ML Model | F1: KGFarm | F1: AutoLearn | Accuracy: KGFarm | Accuracy: AutoLearn | Time: KGFarm | Time: AutoLearn | Memory: KGFarm | Memory: AutoLearn (in MB) |
|--|------------|--------------|--------|------------|----------------------|------------------------|----------|------------|---------------|------------------|---------------------|--------------|-----------------|----------------|---------------------------|
| glass                                  | multiclass | 0.016        | 205    | 9          | 9                    | 0                      | KNN      | 71.14      | 67.46         | 70.24            | 70.22               | 5.97         | 31.79           | 5.83           | 7                         |
|  |            |              |        |            |                      |                        | RF       | 73.96      | 68.46         | 73.66            | 70.43               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 66.83      | 70.88         | 66.83            | 71.79               |              |                 |                |                           |
| vehicle                                | multiclass | 0.147        | 846    | 18         | 18                   | 0                      | KNN      | 63.18      | 73.46         | 63.94            | 74.36               | 8.12         | 504.32          | 7.98           | 49                        |
|  |            |              |        |            |                      |                        | RF       | 70.7       | 75.74         | 71.51            | 76.36               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 72.2       | 81.05         | 73.29            | 81.32               |              |                 |                |                           |
| cnae-9                                 | multiclass | 0.287        | 1080   | 856        | 856                  | 0                      | KNN      | 68.76      | time out      | 69.54            | time out            | 52.6         | time out        | 9.69           | time out                  |
|  |            |              |        |            |                      |                        | RF       | 73.62      |               | 73.06            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 75.06      |               | 74.35            |                     |              |                 |                |                           |
| wine_quality_red                       | multiclass | 0.449        | 1599   | 11         | 11                   | 0                      | KNN      | 57.96      | 57.32         | 54.85            | 59.05               | 12.96        | 302.13          | 7.02           | 9                         |
|  |            |              |        |            |                      |                        | RF       | 65.18      | 64.67         | 67.85            | 66.35               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 55.89      | 62.62         | 61.04            | 63.6                |              |                 |                |                           |
| car_evaluation                         | multiclass | 0.29         | 1728   | 21         | 21                   | 0                      | KNN      | 92.58      | 91.53         | 91.61            | 92.02               | 17.19        | 760.07          | 2.08           | 14                        |
|  |            |              |        |            |                      |                        | RF       | 95.89      | 93.7          | 95.83            | 93.93               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 97.76      | 99.1          | 97.74            | 99.07               |              |                 |                |                           |
| mfeat-factors                          | multiclass | 3.311        | 2000   | 216        | 216                  | 0                      | KNN      | 88.54      | time out      | 88.55            | time out            | 74.11        | time out        | 4.66           | time out                  |
|  |            |              |        |            |                      |                        | RF       | 96.59      |               | 96.6             |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 95.69      |               | 95.7             |                     |              |                 |                |                           |
| segment                                | multiclass | 0.353        | 2310   | 19         | 19                   | 0                      | KNN      | 88.5       | 91.22         | 88.79            | 91.39               | 18.3         | 1797.13         | 2.5            | 56                        |
|  |            |              |        |            |                      |                        | RF       | 94.62      | 95.98         | 94.72            | 95.97               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 95.35      | 95.84         | 95.37            | 95.84               |              |                 |                |                           |
| abalone                                | multiclass | 0.287        | 4177   | 8          | 7                    | 1                      | KNN      | 19.68      | 20.38         | 21.67            | 22.02               | 22.09        | 178.82          | 1.46           | 86                        |
|  |            |              |        |            |                      |                        | RF       | 17.91      | 20.55         | 17.31            | 21.59               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 23.87      | 25.36         | 27.29            | 27.85               |              |                 |                |                           |
| wine_quality_white                     | multiclass | 0.449        | 4898   | 11         | 11                   | 0                      | KNN      | 53.8       | 54.43         | 54.9             | 55.35               | 29.35        | 2876.98         | 1              | 76                        |
|  |            |              |        |            |                      |                        | RF       | 59.7       | 63.48         | 62.64            | 64.42               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 52.06      | 60.65         | 54.39            | 61.23               |              |                 |                |                           |
| optdigits                              | multiclass | 2.787        | 5620   | 64         | 64                   | 0                      | KNN      | 93.11      | time out      | 93.11            | time out            | 76.19        | time out        | 35.97          | time out                  |
|  |            |              |        |            |                      |                        | RF       | 98.06      |               | 98.06            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 95.73      |               | 95.73            |                     |              |                 |                |                           |
| satimage                               | multiclass | 1.815        | 6430   | 36         | 36                   | 0                      | KNN      | 84.46      | time out      | 84.71            | time out            | 35.54        | time out        | 5.45           | time out                  |
|  |            |              |        |            |                      |                        | RF       | 83.97      |               | 83.87            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 85.55      |               | 85.82            |                     |              |                 |                |                           |
| fabert                                 | multiclass | 50.338       | 8237   | 800        | 800                  | 0                      | KNN      | 21.56      | time out      | 27.52            | time out            | 161.68       | time out        | 4.38           | time out                  |
|  |            |              |        |            |                      |                        | RF       | 23.43      |               | 22.08            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 28.35      |               | 36.21            |                     |              |                 |                |                           |
| dilibert                               | multiclass | 152.664      | 10000  | 2000       | 2000                 | 0                      | KNN      | 47.96      | time out      | 48.67            | time out            | 410.53       | time out        | 17.9           | time out                  |
|  |            |              |        |            |                      |                        | RF       | 48.26      |               | 48.67            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 51.67      |               | 52.79            |                     |              |                 |                |                           |
| robert                                 | multiclass | 549.393      | 10000  | 7200       | 7200                 | 0                      | KNN      | 19.35      | time out      | 20.29            | time out            | 1559.04      | time out        | 28.78          | time out                  |
|  |            |              |        |            |                      |                        | RF       | 26.26      |               | 26.62            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 21.96      |               | 23.55            |                     |              |                 |                |                           |
| pendigits                              | multiclass | 1.426        | 10992  | 16         | 16                   | 0                      | KNN      | 96.44      | time out      | 96.45            | time out            | 72.27        | time out        | 34.35          | time out                  |
|  |            |              |        |            |                      |                        | RF       | 99.13      |               | 99.13            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 98.92      |               | 98.92            |                     |              |                 |                |                           |
| kropt                                  | multiclass | 1.498        | 28056  | 6          | 3                    | 3                      | KNN      | 18.06      | 20.11         | 14.49            | 22.55               | 160.88       | 6418.63         | 4.42           | 552                       |
|  |            |              |        |            |                      |                        | RF       | 29.99      | 29.63         | 25.87            | 32.82               |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 29.51      | 29.1          | 31.75            | 32.39               |              |                 |                |                           |
| splice                                 | multiclass | 1.509        | 3190   | 61         | 0                    | 61                     | KNN      | 66.99      | error         | 66.61            | error               | 70.57        | error           | 151.01         | error                     |
|  |            |              |        |            |                      |                        | RF       | 94.05      |               | 94.04            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 87.83      |               | 87.81            |                     |              |                 |                |                           |
| jungle_chess_2pcs_raw_endgame_complete | multiclass | 2.394        | 44819  | 6          | 6                    | 0                      | KNN      | 75.8       | time out      | 75.95            | time out            | 210.8        | time out        | 121.94         | time out                  |
|  |            |              |        |            |                      |                        | RF       | 78.37      |               | 78.44            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 80.58      |               | 80.9             |                     |              |                 |                |                           |
| shuttle                                | multiclass | 4.425        | 58000  | 9          | 9                    | 0                      | KNN      | 95.05      | time out      | 95.55            | time out            | 134.76       | time out        | 141.91         | time out                  |
|  |            |              |        |            |                      |                        | RF       | 84.78      |               | 88.51            |                     |              |                 |                |                           |
|  |            |              |        |            |                      |                        | NN       | 89.29      |               | 90.88            |                     |              |                 |                |                           |

| volkert                             | multiclass | 80.522       | 58310  | 180        | 180                  | 0                      | KNN      | 40.63      | time out      | 42.37        | time out        | 655.33       | time out        | 121.54         | time out                  |
|-------------------------------------|------------|--------------|--------|------------|----------------------|------------------------|----------|------------|---------------|--------------|-----------------|--------------|-----------------|----------------|---------------------------|
|                                     |            |              |        |            |                      |                        | RF       | 44.46      |               | 48.69        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 45.1       |               | 49.12        |                 |              |                 |                |                           |
| helena                              | multiclass | 13.927       | 65196  | 27         | 27                   | 0                      | KNN      | 25.44      | error         | 26.41        | error           | 1090.92      | error           | 2758.51        | error                     |
|                                     |            |              |        |            |                      |                        | RF       | 29.56      |               | 33.02        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 31.77      |               | 34.8         |                 |              |                 |                |                           |
| connect-4                           | multiclass | 22.163       | 67557  | 42         | 42                   | 0                      | KNN      | 70.33      | time out      | 71.34        | time out        | 385.84       | time out        | 26.66          | time out                  |
|                                     |            |              |        |            |                      |                        | RF       | 71.6       |               | 70.4         |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 73.61      |               | 76.78        |                 |              |                 |                |                           |
| Fashion-MNIST                       | multiclass | 419.236      | 70000  | 784        | 784                  | 0                      | KNN      | 48.62      | out of memory | 48.87        | out of memory   | 1366.24      | out of memory   | 13.45          | out of memory             |
|                                     |            |              |        |            |                      |                        | RF       | 51.29      |               | 51.47        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 50.46      |               | 51.41        |                 |              |                 |                |                           |
| mnist_784                           | multiclass | 419.235      | 70000  | 784        | 784                  | 0                      | KNN      | 70.72      | time out      | 71.03        | time out        | 1649.49      | time out        | 28.44          | time out                  |
|                                     |            |              |        |            |                      |                        | RF       | 77.54      |               | 77.65        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 75.52      |               | 75.71        |                 |              |                 |                |                           |
| jannis                              | multiclass | 35.136       | 83733  | 54         | 54                   | 0                      | KNN      | 65.79      | out of memory | 65.91        | out of memory   | 593.62       | out of memory   | 36.34          | out of memory             |
|                                     |            |              |        |            |                      |                        | RF       | 68.82      |               | 69.7         |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 68.62      |               | 69.55        |                 |              |                 |                |                           |
| dionis                              | multiclass | 193.691      | 416188 | 60         | 60                   | 0                      | KNN      | 84.82      | out of memory | 84.82        | out of memory   | 5126.61      | out of memory   | 30159.06       | out of memory             |
|                                     |            |              |        |            |                      |                        | RF       | 86.61      |               | 86.64        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 83.47      |               | 83.54        |                 |              |                 |                |                           |
| covertime                           | multiclass | 243.802      | 581012 | 54         | 54                   | 0                      | KNN      | 90.04      | out of memory | 90.06        | out of memory   | 5994.87      | out of memory   | 1347.19        | out of memory             |
|                                     |            |              |        |            |                      |                        | RF       | 92.58      |               | 92.77        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | NN       | 76.45      |               | 65.71        |                 |              |                 |                |                           |
| Dataset                             | Task       | Size (in MB) | # Rows | # Features | # Numerical Features | # Categorical Features | ML Model | R2: KGFarm | R2: AutoLearn | RMSE: KGFarm | RMSE: AutoLearn | Time: KGFarm | Time: AutoLearn | Memory: KGFarm | Memory: AutoLearn (in MB) |
| witmer_census_1980                  | regression | 0.002        | 50     | 5          | 4                    | 1                      | NN       | 0.68       |               | 893.93       |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 0.35       | error         | 793.49       | error           | 4.92         | error           | 15.1           | error                     |
|                                     |            |              |        |            |                      |                        | EN       | 2.39       |               | 690.51       |                 |              |                 |                |                           |
| stock                               | regression | 0.073        | 950    | 9          | 9                    | 0                      | NN       | 97.07      | 97.71         | 98.86        | 763.37          |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 97.31      | 88.86         | 85.82        | 1675.22         | 8.58         | 129.75          | 23.19          | 24                        |
|                                     |            |              |        |            |                      |                        | EN       | 59.61      | 97.95         | 289.13       | 722.02          |              |                 |                |                           |
| socmob                              | regression | 0.053        | 1156   | 5          | 1                    | 4                      | NN       | 76.67      |               | 1945.73      |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 74.31      | error         | 1999.67      | error           | 4.94         | error           | 31.55          | error                     |
|                                     |            |              |        |            |                      |                        | EN       | 53.4       |               | 2676.81      |                 |              |                 |                |                           |
| weather_izmir                       | regression | 0.112        | 1461   | 9          | 9                    | 0                      | NN       | 96.85      | 99.05         | 151.76       | 1291.37         |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 97.18      | 98.61         | 151.9        | 1561.56         | 6.57         | 152.44          | 0              | 20                        |
|                                     |            |              |        |            |                      |                        | EN       | 91.21      | 99.22         | 313.57       | 1169.44         |              |                 |                |                           |
| debutanizer                         | regression | 0.146        | 2394   | 7          | 7                    | 0                      | NN       | 0.32       | 75.85         | 13.19        | 32855.75        |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 0.25       | 26.07         | 12.55        | 57552.34        | 7.05         | 190.81          | 0              | 28                        |
|                                     |            |              |        |            |                      |                        | EN       | 0.15       | 63.27         | 15.89        | 40525.83        |              |                 |                |                           |
| space_ga_507                        | regression | 0.166        | 3107   | 6          | 6                    | 0                      | NN       | 43.1       |               | 12.34        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 41.66      | error         | 12.17        | error           | 7.82         | error           | 0              | error                     |
|                                     |            |              |        |            |                      |                        | EN       | 0.28       |               | 16.2         |                 |              |                 |                |                           |
| pollen_529                          | regression | 0.176        | 3848   | 5          | 5                    | 0                      | NN       | 39.66      | 70.9          | 317.67       | 58624.88        |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 31.35      | 62.43         | 327.42       | 65937.79        | 8.19         | 100.74          | 0              | 55                        |
|                                     |            |              |        |            |                      |                        | EN       | 2.57       | 74.63         | 333.41       | 54800.33        |              |                 |                |                           |
| mercedes-benz-greener-manufacturing | regression | 12.139       | 4209   | 377        | 369                  | 8                      | NN       | 55.31      |               | 881.49       |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 55.33      | error         | 881.48       | error           | 5.96         | error           | 0.26           | error                     |
|                                     |            |              |        |            |                      |                        | EN       | 49.24      |               | 1018.28      |                 |              |                 |                |                           |
| wind_503                            | regression | 0.752        | 6574   | 14         | 14                   | 0                      | NN       | 73.46      | 75.84         | 346.45       | 7765.03         |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 73.92      | 73.67         | 346.43       | 8106.52         | 26.81        | 5506.69         | 0.8            | 140                       |
|                                     |            |              |        |            |                      |                        | EN       | 61.53      | 78.75         | 379.92       | 7283.57         |              |                 |                |                           |
| bank8FM                             | regression | 0.563        | 8192   | 8          | 8                    | 0                      | NN       | 94.13      | 94.98         | 3.68         | 51984.52        |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 93.2       | 81.68         | 3.96         | 99363.32        | 14.06        | 1785.46         | 0.25           | 123                       |
|                                     |            |              |        |            |                      |                        | EN       | 0.04       | 95.69         | 15.19        | 48181.76        |              |                 |                |                           |
| kin8nm_189                          | regression | 0.563        | 8192   | 8          | 8                    | 0                      | NN       | 34.08      |               | 21.68        |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 22.85      | time out      | 23.35        | time out        | 14.84        | time out        | 0              | time out                  |
|                                     |            |              |        |            |                      |                        | EN       | 0.12       |               | 26.36        |                 |              |                 |                |                           |
| puma8NH_225                         | regression | 2.063        | 8192   | 8          | 8                    | 0                      | NN       | 67.28      |               | 322.43       |                 |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 62.78      | time out      | 345.22       | time out        | 14.31        | time out        | 0.25           | time out                  |
|                                     |            |              |        |            |                      |                        | EN       | 31.64      |               | 497.88       |                 |              |                 |                |                           |
| cpu_small_227                       | regression | 0.813        | 8192   | 12         | 12                   | 0                      | NN       | 97.4       | 87.57         | 303.95       | 417.47          |              |                 |                |                           |
|                                     |            |              |        |            |                      |                        | RF       | 97.51      | 68.65         | 298.68       | 663.17          | 38.54        | 10627.91        | 0              | 218                       |
|                                     |            |              |        |            |                      |                        | EN       | 90.84      | 81.94         | 990.64       | 502.04          |              |                 |                |                           |

|                     |            |         |         |    |    |   |    |       |               |            |               |          |               |         |               |
|---------------------|------------|---------|---------|----|----|---|----|-------|---------------|------------|---------------|----------|---------------|---------|---------------|
| cpu_act_573         | regression | 1.375   | 8192    | 21 | 21 | 0 | NN | 98.13 | time out      | 258.89     | time out      | 47.23    | time out      | 0       | time out      |
|                     |            |         |         |    |    |   | RF | 98.15 |               | 260.64     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 90.97 |               | 991.08     |               |          |               |         |               |
| bank32nh_558        | regression | 2.063   | 8192    | 32 | 32 | 0 | NN | 48.05 | time out      | 8.77       | time out      | 19.36    | time out      | 0       | time out      |
|                     |            |         |         |    |    |   | RF | 40.9  |               | 9.34       |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 0.09  |               | 12.17      |               |          |               |         |               |
| puma32H_308         | regression | 2.063   | 8192    | 32 | 32 | 0 | NN | 20.5  | 89.69         | 2.7        | 72264.61      | 10.67    | 17369         | 0       | 526           |
|                     |            |         |         |    |    |   | RF | 18.59 | 14.83         | 3.24       | 207780.63     |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 13.82 | 89.58         | 2.81       | 72602.58      |          |               |         |               |
| sulfur              | regression | 0.539   | 10081   | 6  | 6  | 0 | NN | 79.63 | 81.52         | 2.36       | 114468.28     | 12.7     | 3376          | 57.04   | 63            |
|                     |            |         |         |    |    |   | RF | 81.55 | 64.49         | 2.21       | 158676.14     |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 0.05  | 74.97         | 5.28       | 133194.8      |          |               |         |               |
| pol                 | regression | 5.608   | 15000   | 48 | 48 | 0 | NN | 93.42 | time out      | 1070       | time out      | 49.12    | time out      | 37.02   | time out      |
|                     |            |         |         |    |    |   | RF | 98.69 |               | 477.07     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 28.41 |               | 3530.04    |               |          |               |         |               |
| rainfall_bangladesh | regression | 0.511   | 16755   | 3  | 1  | 2 | NN | 62.4  | error         | 15320.77   | error         | 37.8     | error         | 399.03  | error         |
|                     |            |         |         |    |    |   | RF | 68.18 |               | 14092.45   |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 0.33  |               | 24945.62   |               |          |               |         |               |
| bng_echomonths      | regression | 1.335   | 17496   | 9  | 9  | 0 | NN | 44.42 | 42.41         | 1177.21    | 383086.11     | 23.16    | 9041.44       | 869.84  | 2153          |
|                     |            |         |         |    |    |   | RF | 42.85 | 45.46         | 1193.39    | 372801.88     |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 42.41 | 47.62         | 1198.38    | 365328.95     |          |               |         |               |
| houses              | regression | 1.417   | 20640   | 8  | 8  | 0 | NN | 71.93 | time out      | 6107263.75 | time out      | 20.94    | time out      | 125.66  | time out      |
|                     |            |         |         |    |    |   | RF | 68.65 |               | 6417998.56 |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 23.35 |               | 10100584.8 |               |          |               |         |               |
| house_8L            | regression | 1.565   | 22784   | 8  | 8  | 0 | NN | 64.69 | time out      | 3133926.85 | time out      | 58.86    | time out      | 162.06  | time out      |
|                     |            |         |         |    |    |   | RF | 66.62 |               | 3045809.13 |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 32.43 |               | 4339003.52 |               |          |               |         |               |
| house_16H           | regression | 2.955   | 22784   | 16 | 16 | 0 | NN | 57.48 | time out      | 47349.24   | time out      | 64.74    | time out      | 281.08  | time out      |
|                     |            |         |         |    |    |   | RF | 51.13 |               | 50617.9    |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 56.1  |               | 48112.6    |               |          |               |         |               |
| bng_lowbwt          | regression | 2.373   | 31104   | 9  | 9  | 0 | NN | 46.51 | time out      | 52639.04   | time out      | 38.36    | time out      | 18.3    | time out      |
|                     |            |         |         |    |    |   | RF | 38.9  |               | 55371.28   |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 41.52 |               | 55042.34   |               |          |               |         |               |
| fried               | regression | 3.422   | 40768   | 10 | 10 | 0 | NN | 85.38 | time out      | 191.02     | time out      | 97.74    | time out      | 545.49  | time out      |
|                     |            |         |         |    |    |   | RF | 85.44 |               | 190.66     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 53.42 |               | 341.03     |               |          |               |         |               |
| 2dplanes            | regression | 3.422   | 40768   | 10 | 10 | 0 | NN | 93.42 | time out      | 112.45     | time out      | 52.61    | time out      | 183.92  | time out      |
|                     |            |         |         |    |    |   | RF | 93.31 |               | 113.41     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 56.3  |               | 290.32     |               |          |               |         |               |
| mv                  | regression | 3.733   | 40768   | 11 | 11 | 0 | NN | 99.87 | time out      | 36.9       | time out      | 122.68   | time out      | 196.49  | time out      |
|                     |            |         |         |    |    |   | RF | 99.96 |               | 20.24      |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 52.06 |               | 721.43     |               |          |               |         |               |
| bng_breastTumor     | regression | 8.899   | 116640  | 9  | 9  | 0 | NN | 8.67  | out of memory | 988.95     | out of memory | 175.32   | out of memory | 176.8   | out of memory |
|                     |            |         |         |    |    |   | RF | 10.05 |               | 981.42     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 4.37  |               | 1011.95    |               |          |               |         |               |
| bng_pwLinear        | regression | 14.867  | 177147  | 10 | 10 | 0 | NN | 60.96 | out of memory | 279.31     | out of memory | 472.37   | out of memory | 1617.03 | out of memory |
|                     |            |         |         |    |    |   | RF | 61.45 |               | 277.54     |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 42.93 |               | 337.74     |               |          |               |         |               |
| bng_pharynx         | regression | 83.923  | 1000000 | 10 | 10 | 0 | NN | 72.64 | out of memory | 18644.4    | out of memory | 9989.46  | out of memory | 126.39  | out of memory |
|                     |            |         |         |    |    |   | RF | 79.22 |               | 14542.24   |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 64.75 |               | 25453.56   |               |          |               |         |               |
| bng_pbc             | regression | 144.959 | 1000000 | 19 | 19 | 0 | NN | 54.93 | out of memory | 44561.63   | out of memory | 9973.31  | out of memory | 8934.94 | out of memory |
|                     |            |         |         |    |    |   | RF | 55.89 |               | 36463.92   |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 48.24 |               | 73492.53   |               |          |               |         |               |
| poker               | regression | 86.022  | 1025010 | 11 | 11 | 0 | NN | 12.54 | out of memory | 49.37      | out of memory | 10228.88 | out of memory | 7743.32 | out of memory |
|                     |            |         |         |    |    |   | RF | 28.56 |               | 43.6       |               |          |               |         |               |
|                     |            |         |         |    |    |   | EN | 8.74  |               | 66.96      |               |          |               |         |               |