# DE-Forest

No Author Given

No Institute Given

## 1 Results

**Table 1.** BAC

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | **0.797 ± 0.043** | 0.797 ± 0.024 | 0.797 ± 0.048 | 0.792 ± 0.040 | 0.792 ± 0.040 | 0.785 ± 0.041 | 0.786 ± 0.033 | 0.731 ± 0.056 | 0.757 ± 0.039 | 0.784 ± 0.044 | 0.775 ± 0.065 |
| $ds10/pima.dat$ | 0.657 ± 0.026 | 0.667 ± 0.030 | 0.655 ± 0.023 | 0.661 ± 0.029 | 0.672 ± 0.012 | 0.657 ± 0.020 | 0.586 ± 0.026 | 0.588 ± 0.031 | 0.654 ± 0.021 | **0.687 ± 0.016** | 0.678 ± 0.026 |
| $ds10/ecoli-0-1-3-7\_vs2-6.dat$ | 0.579 ± 0.109 | 0.579 ± 0.109 | 0.579 ± 0.109 | 0.562 ± 0.107 | 0.562 ± 0.107 | 0.562 ± 0.107 | 0.516 ± 0.047 | 0.500 ± 0.000 | **0.752 ± 0.157** | 0.628 ± 0.119 | 0.500 ± 0.000 |
| $ds10/yeast-1-2-8-9\_vs7.dat$ | 0.541 ± 0.030 | 0.546 ± 0.039 | 0.534 ± 0.028 | 0.515 ± 0.027 | 0.519 ± 0.027 | 0.519 ± 0.027 | 0.507 ± 0.013 | 0.500 ± 0.000 | **0.598 ± 0.056** | 0.540 ± 0.029 | 0.525 ± 0.032 |
| $ds10/winequality-red-8\_vs6-7.dat$ | **0.560 ± 0.017** | 0.559 ± 0.017 | 0.559 ± 0.017 | 0.555 ± 0.000 | 0.555 ± 0.000 | 0.555 ± 0.000 | 0.555 ± 0.000 | 0.550 ± 0.017 | 0.558 ± 0.035 | 0.554 ± 0.002 | 0.533 ± 0.027 |
| $ds10/poker-8-9\_vs6.dat$ | 0.552 ± 0.065 | 0.532 ± 0.047 | 0.540 ± 0.048 | 0.529 ± 0.032 | 0.529 ± 0.032 | 0.529 ± 0.032 | 0.500 ± 0.000 | 0.500 ± 0.000 | **0.572 ± 0.066** | 0.544 ± 0.055 | 0.516 ± 0.020 |
| $ds10/zoo-3.dat$ | 0.591 ± 0.113 | 0.574 ± 0.113 | 0.574 ± 0.113 | 0.549 ± 0.101 | 0.549 ± 0.101 | 0.549 ± 0.101 | 0.500 ± 0.000 | 0.500 ± 0.000 | 0.590 ± 0.107 | 0.581 ± 0.107 | **0.600 ± 0.128** |

**Table 2.** F1score

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | 0.833 ± 0.030 | **0.837 ± 0.020** | 0.833 ± 0.035 | 0.833 ± 0.028 | 0.833 ± 0.028 | 0.829 ± 0.029 | 0.825 ± 0.028 | 0.783 ± 0.047 | 0.783 ± 0.029 | 0.821 ± 0.030 | 0.804 ± 0.048 |
| $ds10/pima.dat$ | 0.703 ± 0.022 | 0.711 ± 0.027 | 0.700 ± 0.020 | 0.708 ± 0.026 | 0.718 ± 0.010 | 0.703 ± 0.017 | 0.640 ± 0.027 | 0.643 ± 0.031 | 0.683 ± 0.017 | **0.728 ± 0.014** | 0.721 ± 0.021 |
| $ds10/ecoli-0-1-3-7\_vs2-6.dat$ | 0.969 ± 0.011 | 0.969 ± 0.011 | 0.969 ± 0.011 | 0.968 ± 0.011 | 0.968 ± 0.011 | 0.968 ± 0.011 | 0.963 ± 0.005 | 0.963 ± 0.005 | 0.969 ± 0.009 | **0.973 ± 0.012** | 0.963 ± 0.005 |
| $ds10/yeast-1-2-8-9\_vs7.dat$ | **0.956 ± 0.005** | 0.955 ± 0.005 | 0.955 ± 0.004 | 0.954 ± 0.004 | 0.954 ± 0.004 | 0.954 ± 0.004 | 0.954 ± 0.002 | 0.953 ± 0.000 | 0.944 ± 0.012 | 0.955 ± 0.004 | 0.955 ± 0.004 |
| $ds10/winequality-red-8\_vs6-7.dat$ | 0.973 ± 0.002 | 0.972 ± 0.003 | 0.972 ± 0.003 | **0.974 ± 0.000** | **0.974 ± 0.000** | **0.974 ± 0.000** | 0.974 ± 0.000 | 0.973 ± 0.002 | 0.959 ± 0.005 | 0.972 ± 0.002 | 0.971 ± 0.003 |
| $ds10/poker-8-9\_vs6.dat$ | **0.978 ± 0.005** | 0.977 ± 0.003 | 0.978 ± 0.004 | 0.977 ± 0.003 | 0.977 ± 0.003 | 0.977 ± 0.003 | 0.975 ± 0.001 | 0.975 ± 0.001 | 0.970 ± 0.005 | 0.978 ± 0.004 | 0.976 ± 0.002 |
| $ds10/zoo-3.dat$ | 0.940 ± 0.025 | 0.936 ± 0.026 | 0.936 ± 0.026 | 0.933 ± 0.026 | 0.933 ± 0.026 | 0.933 ± 0.026 | 0.927 ± 0.014 | 0.927 ± 0.014 | 0.922 ± 0.023 | 0.940 ± 0.024 | **0.944 ± 0.025** |

**Table 3.** Gmean

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | **0.796 ± 0.044** | 0.795 ± 0.025 | 0.796 ± 0.048 | 0.791 ± 0.041 | 0.791 ± 0.041 | 0.783 ± 0.042 | 0.784 ± 0.033 | 0.728 ± 0.057 | 0.756 ± 0.040 | 0.783 ± 0.045 | 0.773 ± 0.066 |
| $ds10/pima.dat$ | 0.655 ± 0.027 | 0.664 ± 0.031 | 0.653 ± 0.024 | 0.658 ± 0.031 | 0.670 ± 0.012 | 0.654 ± 0.021 | 0.578 ± 0.028 | 0.580 ± 0.033 | 0.653 ± 0.021 | **0.685 ± 0.017** | 0.676 ± 0.026 |
| $ds10/ecoli-0-1-3-7\_vs2-6.dat$ | 0.345 ± 0.240 | 0.345 ± 0.240 | 0.345 ± 0.240 | 0.302 ± 0.232 | 0.302 ± 0.232 | 0.302 ± 0.232 | 0.199 ± 0.127 | 0.155 ± 0.011 | **0.663 ± 0.280** | 0.454 ± 0.257 | 0.155 ± 0.011 |
| $ds10/yeast-1-2-8-9\_vs7.dat$ | 0.322 ± 0.090 | 0.335 ± 0.108 | 0.304 ± 0.083 | 0.232 ± 0.090 | 0.245 ± 0.090 | 0.245 ± 0.090 | 0.201 ± 0.052 | 0.175 ± 0.000 | **0.481 ± 0.100** | 0.321 ± 0.090 | 0.265 ± 0.102 |
| $ds10/winequality-red-8\_vs6-7.dat$ | 0.369 ± 0.038 | 0.369 ± 0.038 | 0.369 ± 0.038 | 0.357 ± 0.000 | 0.357 ± 0.000 | 0.357 ± 0.000 | 0.357 ± 0.000 | 0.336 ± 0.064 | **0.386 ± 0.073** | 0.356 ± 0.001 | 0.271 ± 0.104 |
| $ds10/poker-8-9\_vs6.dat$ | 0.289 ± 0.182 | 0.239 ± 0.148 | 0.268 ± 0.152 | 0.242 ± 0.118 | 0.242 ± 0.118 | 0.242 ± 0.118 | 0.129 ± 0.002 | 0.129 ± 0.002 | **0.377 ± 0.166** | 0.275 ± 0.163 | 0.200 ± 0.087 |
| $ds10/zoo-3.dat$ | 0.407 ± 0.228 | 0.370 ± 0.224 | 0.370 ± 0.224 | 0.319 ± 0.198 | 0.319 ± 0.198 | 0.319 ± 0.198 | 0.216 ± 0.020 | 0.216 ± 0.020 | **0.432 ± 0.222** | 0.391 ± 0.220 | 0.414 ± 0.248 |

**Table 4.** Precision

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | 0.836 ± 0.029 | **0.842 ± 0.022** | 0.838 ± 0.037 | 0.840 ± 0.027 | 0.840 ± 0.027 | 0.836 ± 0.027 | 0.828 ± 0.028 | 0.792 ± 0.048 | 0.788 ± 0.028 | 0.826 ± 0.028 | 0.811 ± 0.048 |
| $ds10/pima.dat$ | 0.705 ± 0.023 | 0.711 ± 0.027 | 0.700 ± 0.019 | 0.712 ± 0.025 | 0.721 ± 0.011 | 0.705 ± 0.016 | 0.659 ± 0.030 | 0.665 ± 0.035 | 0.685 ± 0.018 | **0.729 ± 0.015** | 0.722 ± 0.020 |
| $ds10/ecoli-0-1-3-7\_vs2-6.dat$ | 0.963 ± 0.018 | 0.963 ± 0.018 | 0.963 ± 0.018 | 0.961 ± 0.018 | 0.961 ± 0.018 | 0.961 ± 0.018 | 0.952 ± 0.009 | 0.951 ± 0.007 | **0.973 ± 0.012** | 0.969 ± 0.017 | 0.951 ± 0.007 |
| $ds10/yeast-1-2-8-9\_vs7.dat$ | **0.955 ± 0.013** | 0.952 ± 0.012 | 0.954 ± 0.013 | 0.946 ± 0.014 | 0.948 ± 0.014 | 0.948 ± 0.014 | 0.944 ± 0.013 | 0.938 ± 0.000 | 0.950 ± 0.006 | 0.951 ± 0.007 | 0.946 ± 0.010 |
| $ds10/winequality-red-8\_vs6-7.dat$ | 0.977 ± 0.007 | 0.972 ± 0.007 | 0.972 ± 0.007 | **0.981 ± 0.003** | **0.981 ± 0.003** | **0.981 ± 0.003** | 0.981 ± 0.003 | 0.979 ± 0.007 | 0.963 ± 0.002 | 0.972 ± 0.005 | 0.970 ± 0.010 |
| $ds10/poker-8-9\_vs6.dat$ | **0.977 ± 0.010** | 0.974 ± 0.010 | 0.976 ± 0.010 | 0.976 ± 0.010 | 0.976 ± 0.010 | 0.976 ± 0.010 | 0.967 ± 0.001 | 0.967 ± 0.001 | 0.971 ± 0.004 | 0.976 ± 0.010 | 0.974 ± 0.009 |
| $ds10/zoo-3.dat$ | 0.927 ± 0.039 | 0.919 ± 0.038 | 0.919 ± 0.038 | 0.915 ± 0.036 | 0.915 ± 0.036 | 0.915 ± 0.036 | 0.904 ± 0.018 | 0.904 ± 0.018 | 0.923 ± 0.030 | 0.931 ± 0.037 | **0.933 ± 0.038** |

**Table 5.** Recall

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | 0.837 ± 0.027 | **0.842 ± 0.020** | 0.837 ± 0.034 | 0.839 ± 0.025 | 0.839 ± 0.025 | 0.836 ± 0.026 | 0.829 ± 0.028 | 0.793 ± 0.044 | 0.783 ± 0.028 | 0.826 ± 0.026 | 0.807 ± 0.045 |
| $ds10/pima.dat$ | 0.716 ± 0.019 | 0.721 ± 0.024 | 0.710 ± 0.017 | 0.722 ± 0.021 | 0.729 ± 0.011 | 0.715 ± 0.014 | 0.679 ± 0.019 | 0.683 ± 0.026 | 0.682 ± 0.017 | **0.736 ± 0.014** | 0.731 ± 0.018 |
| $ds10/ecoli-0-1-3-7\_vs\_2-6.dat$ | 0.978 ± 0.006 | 0.978 ± 0.006 | 0.978 ± 0.006 | 0.978 ± 0.007 | 0.978 ± 0.007 | 0.978 ± 0.007 | 0.974 ± 0.005 | 0.975 ± 0.003 | 0.968 ± 0.010 | **0.979 ± 0.008** | 0.975 ± 0.003 |
| $ds10/yeast-1-2-8-9\_vs\_7.dat$ | 0.966 ± 0.005 | 0.964 ± 0.006 | 0.966 ± 0.005 | 0.967 ± 0.003 | 0.967 ± 0.003 | 0.967 ± 0.003 | **0.969 ± 0.001** | 0.968 ± 0.000 | 0.939 ± 0.018 | 0.965 ± 0.004 | 0.967 ± 0.002 |
| $ds10/winequality-red-8\_vs\_6-7.dat$ | 0.980 ± 0.003 | 0.978 ± 0.003 | 0.978 ± 0.003 | **0.981 ± 0.001** | **0.981 ± 0.001** | **0.981 ± 0.001** | 0.981 ± 0.001 | 0.981 ± 0.001 | 0.955 ± 0.009 | 0.978 ± 0.003 | 0.980 ± 0.002 |
| $ds10/poker-8-9\_vs\_6.dat$ | **0.985 ± 0.002** | 0.984 ± 0.002 | 0.985 ± 0.002 | 0.984 ± 0.002 | 0.984 ± 0.002 | 0.984 ± 0.002 | 0.983 ± 0.001 | 0.983 ± 0.001 | 0.969 ± 0.007 | 0.985 ± 0.002 | 0.984 ± 0.001 |
| $ds10/zoo-3.dat$ | 0.957 ± 0.014 | 0.955 ± 0.015 | 0.955 ± 0.015 | 0.953 ± 0.018 | 0.953 ± 0.018 | 0.953 ± 0.018 | 0.951 ± 0.009 | 0.951 ± 0.009 | 0.925 ± 0.029 | 0.955 ± 0.018 | **0.960 ± 0.015** |

**Table 6.** Specificity

| Dataset name | DE-Forest-gm | DE-Forest-AUC | DE-Forest-bac | DE-Forest-gm-b | DE-Forest-AUC-b | DE-Forest-bac-b | RandomFS | RandomFS-b | DT | RF | RF-b |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $ds10/glass0.dat$ | **0.757 ± 0.061** | 0.751 ± 0.033 | 0.757 ± 0.066 | 0.746 ± 0.058 | 0.746 ± 0.058 | 0.734 ± 0.059 | 0.742 ± 0.041 | 0.669 ± 0.072 | 0.730 ± 0.058 | 0.742 ± 0.064 | 0.742 ± 0.092 |
| $ds10/pima.dat$ | 0.599 ± 0.036 | 0.613 ± 0.037 | 0.600 ± 0.030 | 0.600 ± 0.041 | 0.616 ± 0.019 | 0.598 ± 0.029 | 0.492 ± 0.035 | 0.494 ± 0.039 | 0.625 ± 0.028 | **0.639 ± 0.022** | 0.625 ± 0.035 |
| $ds10/ecoli-0-1-3-7\_vs\_2-6.dat$ | 0.180 ± 0.212 | 0.180 ± 0.212 | 0.180 ± 0.212 | 0.147 ± 0.209 | 0.147 ± 0.209 | 0.147 ± 0.209 | 0.057 ± 0.097 | 0.025 ± 0.003 | **0.536 ± 0.315** | 0.277 ± 0.231 | 0.025 ± 0.003 |
| $ds10/yeast-1-2-8-9\_vs\_7.dat$ | 0.115 ± 0.058 | 0.128 ± 0.078 | 0.103 ± 0.054 | 0.064 ± 0.052 | 0.070 ± 0.052 | 0.070 ± 0.052 | 0.045 ± 0.026 | 0.032 ± 0.000 | **0.256 ± 0.101** | 0.115 ± 0.058 | 0.083 ± 0.063 |
| $ds10/winequality-red-8\_vs\_6-7.dat$ | 0.141 ± 0.033 | 0.141 ± 0.033 | 0.141 ± 0.033 | 0.130 ± 0.000 | 0.130 ± 0.000 | 0.130 ± 0.000 | 0.130 ± 0.000 | 0.119 ± 0.033 | **0.162 ± 0.070** | 0.130 ± 0.000 | 0.086 ± 0.053 |
| $ds10/poker-8-9\_vs\_6.dat$ | 0.118 ± 0.129 | 0.080 ± 0.092 | 0.096 ± 0.094 | 0.074 ± 0.063 | 0.074 ± 0.063 | 0.074 ± 0.063 | 0.017 ± 0.001 | 0.017 ± 0.001 | **0.175 ± 0.129** | 0.104 ± 0.107 | 0.048 ± 0.039 |
| $ds10/zoo-3.dat$ | 0.225 ± 0.215 | 0.193 ± 0.214 | 0.193 ± 0.214 | 0.145 ± 0.188 | 0.145 ± 0.188 | 0.145 ± 0.188 | 0.049 ± 0.009 | 0.049 ± 0.009 | **0.254 ± 0.211** | 0.208 ± 0.200 | 0.240 ± 0.243 |