

### Meta-feature significance for a single classifier

|  | <b>Naive Bayes</b> | <b>C4.5</b> | <b>PART</b> | <b>Bayes Net</b> | <b>IB3</b> |               |
|--|--------------------|-------------|-------------|------------------|------------|---------------|
| <b>MaxMutual Information</b>             | 0.7220             | 0.7033      | 0.6459      | 0.5190           | 0.6735     | <b>0.6527</b> |
| <b>NumberOfFeatures</b>                  | 0.5953             | 0.5448      | 0.5186      | 0.3623           | 0.5464     | <b>0.5135</b> |
| <b>MinOneTenth PerceptronWeightSum</b>   | 0.5361             | 0.6241      | 0.4404      | 0.5188           | 0.3023     | <b>0.4843</b> |
| <b>MaxOneTenthBestK</b>                  | 0.2239             | 0.9608      | 0.7241      | 0.0390           | 0.4489     | <b>0.4794</b> |
| <b>MinHalf PerceptronWeightSum</b>       | 0.4191             | 0.6438      | 0.4402      | 0.4111           | 0.4194     | <b>0.4667</b> |
| <b>DataSetDimensionality</b>             | 0.4097             | 0.4260      | 0.4992      | 0.5481           | 0.4391     | <b>0.4644</b> |
| <b>NumberOfInstances</b>                 | 0.3996             | 0.4655      | 0.5188      | 0.5286           | 0.3803     | <b>0.4586</b> |
| <b>MinSqrt PerceptronWeightSum</b>       | 0.4583             | 0.5745      | 0.4013      | 0.5286           | 0.2828     | <b>0.4491</b> |
| <b>EquivalentNumber OfFeatures</b>       | 0.3902             | 0.3962      | 0.5188      | 0.3721           | 0.5660     | <b>0.4487</b> |
| <b>MeanMutual Information</b>            | 0.4781             | 0.4655      | 0.4600      | 0.4013           | 0.4195     | <b>0.4449</b> |
| <b>NumberOfClasses</b>                   | 0.4193             | 0.5547      | 0.5285      | 0.3230           | 0.3220     | <b>0.4295</b> |
| <b>PrunedTreeDevLevel</b>                | 0.3511             | 0.5349      | 0.2937      | 0.4112           | 0.5563     | <b>0.4294</b> |
| <b>NoiseSignalRatio</b>                  | 0.3220             | 0.4457      | 0.4403      | 0.4305           | 0.5075     | <b>0.4292</b> |
| <b>PrunedTreeMinBranch</b>               | 0.4486             | 0.3169      | 0.5580      | 0.1565           | 0.6441     | <b>0.4248</b> |
| <b>PrunedTreeMinAttr</b>                 | 0.3706             | 0.4755      | 0.4403      | 0.3817           | 0.3804     | <b>0.4097</b> |
| <b>MeanStandard Deviation</b>            | 0.3903             | 0.4556      | 0.4305      | 0.3330           | 0.4293     | <b>0.4077</b> |
| <b>UnprunedTree LeavesNumber</b>         | 0.3510             | 0.4358      | 0.4698      | 0.3230           | 0.4584     | <b>0.4076</b> |
| <b>PrunedTreeDevAttr</b>                 | 0.2925             | 0.4161      | 0.4306      | 0.4110           | 0.4783     | <b>0.4057</b> |
| <b>PrunedTreeMinClass</b>                | 0.3998             | 0.3665      | 0.4989      | 0.3426           | 0.4001     | <b>0.4016</b> |
| <b>PrunedTreeDevClass</b>                | 0.3804             | 0.3665      | 0.4110      | 0.3818           | 0.4489     | <b>0.3977</b> |
| <b>PrunedTreeMeanClass</b>               | 0.3607             | 0.5250      | 0.3619      | 0.3231           | 0.4099     | <b>0.3961</b> |
| <b>MaxSqrtBestK</b>                      | 0.2337             | 0.6835      | 0.5870      | 0.0880           | 0.3806     | <b>0.3946</b> |
| <b>MeanLinear CorrelationCoefficient</b> | 0.3803             | 0.5053      | 0.3034      | 0.4601           | 0.3219     | <b>0.3942</b> |
| <b>UnprunedTree MeanAttr</b>             | 0.2535             | 0.4854      | 0.3522      | 0.3819           | 0.4978     | <b>0.3941</b> |
| <b>UnprunedTreeDevAttr</b>               | 0.3021             | 0.4952      | 0.4208      | 0.3620           | 0.3805     | <b>0.3921</b> |
| <b>MeanCoefficient OfVariation</b>       | 0.3512             | 0.4854      | 0.3718      | 0.3132           | 0.4297     | <b>0.3902</b> |
| <b>UnprunedTree MeanClass</b>            | 0.3119             | 0.4655      | 0.4304      | 0.3034           | 0.4391     | <b>0.3901</b> |
| <b>UnprunedTreeMaxClass</b>              | 0.3023             | 0.4457      | 0.4110      | 0.3426           | 0.4486     | <b>0.3901</b> |

|   |        |        |        |        |        |               |
|---|--------|--------|--------|--------|--------|---------------|
| <b>MeanNormalized<br/>FeatureEntropy</b>      | 0.7027 | 0.6935 | 0.0880 | 0.3328 | 0.1169 | <b>0.3868</b> |
| <b>MeanOneTenth<br/>PerceptronWeightSum</b>   | 0.4096 | 0.5547 | 0.3424 | 0.3719 | 0.2535 | <b>0.3864</b> |
| <b>StdDevHalf<br/>PerceptronWeightSum</b>     | 0.3707 | 0.4160 | 0.4109 | 0.4403 | 0.2926 | <b>0.3861</b> |
| <b>UnprunedTreeMaxLevel</b>                   | 0.3607 | 0.3763 | 0.4305 | 0.3131 | 0.4490 | <b>0.3859</b> |
| <b>PrunedTreeMaxClass</b>                     | 0.3313 | 0.5052 | 0.4403 | 0.2153 | 0.4293 | <b>0.3842</b> |
| <b>MeanHalf<br/>PerceptronWeightSum</b>       | 0.3802 | 0.5745 | 0.2153 | 0.4700 | 0.2732 | <b>0.3826</b> |
| <b>MaxSqrt<br/>PerceptronWeightSum</b>        | 0.3607 | 0.4556 | 0.2935 | 0.4014 | 0.4001 | <b>0.3823</b> |
| <b>UnprunedTree<br/>DevBranch</b>             | 0.1362 | 0.4160 | 0.3620 | 0.4405 | 0.5367 | <b>0.3783</b> |
| <b>MeanSqrt<br/>PerceptronWeightSum</b>       | 0.3413 | 0.5150 | 0.2935 | 0.3720 | 0.3609 | <b>0.3765</b> |
| <b>UnprunedTreeMinAttr</b>                    | 0.4193 | 0.4358 | 0.3425 | 0.3033 | 0.3805 | <b>0.3763</b> |
| <b>PrunedTreeNodeNumber</b>                   | 0.3899 | 0.5249 | 0.3718 | 0.2739 | 0.3024 | <b>0.3726</b> |
| <b>UnprunedTreeMinClass</b>                   | 0.3509 | 0.4754 | 0.3131 | 0.3229 | 0.4001 | <b>0.3725</b> |
| <b>PrunedTreeMeanAttr</b>                     | 0.4484 | 0.3368 | 0.3719 | 0.2446 | 0.4585 | <b>0.3720</b> |
| <b>StdDevSqrt<br/>PerceptronWeightSum</b>     | 0.3805 | 0.4754 | 0.3327 | 0.3327 | 0.3317 | <b>0.3706</b> |
| <b>UnprunedTree<br/>MeanBranch</b>            | 0.4486 | 0.3962 | 0.2838 | 0.4013 | 0.3219 | <b>0.3703</b> |
| <b>UnprunedTree<br/>MaxAttr</b>               | 0.2926 | 0.4061 | 0.4697 | 0.2250 | 0.4489 | <b>0.3685</b> |
| <b>UnprunedTree<br/>DevClass</b>              | 0.3609 | 0.3962 | 0.3426 | 0.3327 | 0.3807 | <b>0.3626</b> |
| <b>StdDevOneTenth<br/>PerceptronWeightSum</b> | 0.3606 | 0.4160 | 0.3131 | 0.3133 | 0.3807 | <b>0.3568</b> |
| <b>PrunedTree<br/>LeavesNumber</b>            | 0.3902 | 0.4556 | 0.3033 | 0.3132 | 0.2930 | <b>0.3511</b> |
| <b>MeanKurtosis</b>                           | 0.2730 | 0.3962 | 0.4795 | 0.2838 | 0.3217 | <b>0.3508</b> |
| <b>MaxOneTenth<br/>PerceptronWeightSum</b>    | 0.2925 | 0.3764 | 0.2837 | 0.3914 | 0.4098 | <b>0.3508</b> |
| <b>Normalized<br/>ClassEntropy</b>            | 0.2045 | 0.3367 | 0.3620 | 0.3916 | 0.4587 | <b>0.3507</b> |
| <b>StdDevHalfBestK</b>                        | 0.3510 | 0.7231 | 0.3229 | 0.1762 | 0.1753 | <b>0.3497</b> |
| <b>UnprunedTree<br/>MeanLevel</b>             | 0.3022 | 0.3863 | 0.3914 | 0.3035 | 0.3610 | <b>0.3489</b> |
| <b>PrunedTree<br/>MeanBranch</b>              | 0.3317 | 0.5745 | 0.2445 | 0.3035 | 0.2828 | <b>0.3474</b> |
| <b>MeanHalfBestK</b>                          | 0.2337 | 0.4952 | 0.4501 | 0.2349 | 0.3218 | <b>0.3471</b> |
| <b>UnprunedTreeWidth</b>                      | 0.3121 | 0.4062 | 0.4306 | 0.2054 | 0.3805 | <b>0.3470</b> |

|  |        |        |        |        |        |               |
|--|--------|--------|--------|--------|--------|---------------|
| <b>UnprunedTree<br/>NodeNumber</b>     | 0.3997 | 0.3962 | 0.3424 | 0.2642 | 0.3317 | <b>0.3469</b> |
| <b>UnprunedTree<br/>MinBranch</b>      | 0.3709 | 0.1584 | 0.5969 | 0.1858 | 0.4197 | <b>0.3463</b> |
| <b>UnprunedTree<br/>DevLevel</b>       | 0.2632 | 0.4457 | 0.3522 | 0.2642 | 0.4001 | <b>0.3451</b> |
| <b>MaxHalf<br/>PerceptronWeightSum</b> | 0.3218 | 0.3962 | 0.2837 | 0.3330 | 0.3901 | <b>0.3449</b> |
| <b>PrunedTree<br/>MeanLevel</b>        | 0.3999 | 0.3071 | 0.4599 | 0.2642 | 0.2831 | <b>0.3428</b> |
| <b>MinSqrtBestK</b>                    | 0.3510 | 0.2972 | 0.2544 | 0.4698 | 0.3317 | <b>0.3408</b> |
| <b>MinHalfBestK</b>                    | 0.1756 | 0.2278 | 0.5286 | 0.3033 | 0.4682 | <b>0.3407</b> |
| <b>MeanSkewness</b>                    | 0.3705 | 0.4555 | 0.3524 | 0.3034 | 0.2147 | <b>0.3393</b> |
| <b>PrunedTreeMaxLevel</b>              | 0.3416 | 0.3764 | 0.3717 | 0.3231 | 0.2831 | <b>0.3391</b> |
| <b>UnprunedTree<br/>MaxBranch</b>      | 0.2732 | 0.3467 | 0.2837 | 0.4209 | 0.3707 | <b>0.3390</b> |
| <b>FullPerceptron<br/>WeightSum</b>    | 0.2827 | 0.3170 | 0.3619 | 0.5482 | 0.1656 | <b>0.3351</b> |
| <b>MinOneTenthBestK</b>                | 0.2436 | 0.2674 | 0.4405 | 0.3033 | 0.4197 | <b>0.3349</b> |
| <b>FullBestK</b>                       | 0.2143 | 0.4655 | 0.1466 | 0.1858 | 0.6443 | <b>0.3313</b> |
| <b>StdDevOneTenthBestK</b>             | 0.1947 | 0.6141 | 0.3228 | 0.2054 | 0.2926 | <b>0.3259</b> |
| <b>MeanOneTenthBestK</b>               | 0.2044 | 0.4061 | 0.4012 | 0.2935 | 0.3025 | <b>0.3215</b> |
| <b>PrunedTreeDevBranch</b>             | 0.0486 | 0.4161 | 0.3912 | 0.2836 | 0.4490 | <b>0.3177</b> |
| <b>PrunedTreeWidth</b>                 | 0.3316 | 0.4160 | 0.3131 | 0.2055 | 0.2926 | <b>0.3117</b> |
| <b>UnprunedTreeHeight</b>              | 0.2828 | 0.4061 | 0.1858 | 0.3328 | 0.3512 | <b>0.3117</b> |
| <b>PrunedTreeMaxAttr</b>               | 0.2634 | 0.4062 | 0.3327 | 0.1957 | 0.3316 | <b>0.3059</b> |
| <b>MeanSqrtBestK</b>                   | 0.1265 | 0.4259 | 0.4012 | 0.1662 | 0.3512 | <b>0.2942</b> |
| <b>PrunedTreeHeight</b>                | 0.2340 | 0.3566 | 0.3032 | 0.2348 | 0.2828 | <b>0.2823</b> |
| <b>MaxHalfBestK</b>                    | 0.0974 | 0.4160 | 0.5480 | 0.0977 | 0.1365 | <b>0.2591</b> |
| <b>PrunedTreeMaxBranch</b>             | 0.1852 | 0.3565 | 0.2641 | 0.2152 | 0.2732 | <b>0.2588</b> |
| <b>StdDevSqrtBestK</b>                 | 0.2142 | 0.2774 | 0.1663 | 0.1664 | 0.4586 | <b>0.2565</b> |