- The details of each parameter setting is explained in the research paper, section 2.3. Below is a list of examples for the different parameter spaces used at each parameter setting.

| | Examples for Parameter Space Values | | | |
|----------------|---|---|--|--|
| Caret Model | Default Setting | Trivial Setting | Optimized Setting | |
| C5.0 | $model = \{rules\}, winnow = \\ \{FALSE\}, trials = \{1\}$ | $model = \{tree\}, winnow = \{TRUE\}, trials = \{40\}$ | $egin{aligned} \operatorname{model} = & \{\operatorname{rules, tree}\}, \ \operatorname{winnow} = & \{\operatorname{FALSE,TRUE}\}, \end{aligned}$ | |
| | , () | , , , , , | $	ext{trials} = \{1, 10, 20, 40\}$ | |
| AdaBoost.M1 | $mfinal = \{50\}, maxdepth$ | $mfinal = \{250\},$ | $mfinal = \{50, 100, 150, 200,$ | |
| | $=\{1\}, coeflearn = \{Breiman\}$ | $\max depth = \{5\},$ | $250\}$, maxdepth= $\{1$, | |
| | | $coeflearn = \{Breiman\}$ | $2,3,4,5\},$ | |
| | | | $\operatorname{coeflearn} = \{\operatorname{Breiman}\}$ | |
| avNNet | $size = \{1\}, decay = \{0\}, bag$ | size = $\{9\}$, decay = $\{0.1\}$,bag | size = $\{1, 3, 5, 7, 9\}$, decay | |
| | $= \{ 	ext{FALSE} \}$ | $= \{ \mathrm{TRUE} \}$ | $=\{0,0.0001,0.001,0.01,$ | |
| | | | $0.1\}$, bag ={FALSE, | |
| 2727 | | (2) | TRUE} | |
| pcaNNet | $size = \{1\}, decay = \{0\}$ | size = $\{9\}$, decay = $\{0.1\}$ | $size = \{1, 3, 5, 7, 9\},\$ | |
| | | | $decay = \{0, 0.0001, 0.001, 0$ | |
| | . (1) 1 (0) | . (0) 1 (0.1) | 0.01, 0.1} | |
| nnet | $size = \{1\}, decay = \{0\}$ | size = $\{9\}$, decay = $\{0.1\}$ | $size = \{1, 3, 5, 7, 9\}, decay = \{0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,$ | |
| £.1_ | d (1) (10) | J (1) (50) | $\{0, 0.0001, 0.001, 0.01, 0.1\}$ | |
| fda | $degree = \{1\}, nprune = \{10\}$ | $degree = \{1\}, nprune = \{50\}$ | $\begin{array}{c} \text{degree} = \{1\}, \ \text{nprune} = \{10, \\ 20, \ 30, \ 40, 50\} \end{array}$ | |
| mlpWeightDecay | $size = \{1\}, decay = \{0\}$ | size = $\{9\}$, decay = $\{0.1\}$ | $size = \{1, 3, 5, 7, 9\}, decay =$ | |
| | (.) | (-) | $\{0, 0.0001, 0.001, 0.01, 0.1\}$ | |
| mlp | $size = \{1\}$ | $size = \{9\}$ | $size = \{1, 3, 5, 7, 9\}$ | |
| LMT | $iter=\{1\}$ | $iter = \{81\}$ | $iter = \{1, 21, 41, 61, 81\}$ | |
| gpls | $K.prov = \{1\}$ | $K.prov = \{5\}$ | $K.prov = \{1, 2, 3, 4, 5\}$ | |
| LogitBoost | | $ nIter = \{51\} $ | | |
| knn | $k = \{1\}$ | $k = \{17\}$ $nrounds = \{250\}, eta = \{0.3\},$ | $k = \{1, 5, 9, 13, 17\}$ | |
| xgbTree | $egin{aligned} &\operatorname{nrounds} = \{100\}, \ &\operatorname{eta} = \{0.3\}, \operatorname{max_depth} \end{aligned}$ | $\max \text{ depth=}\{5\},$ | $ \text{nrounds} = \{50, 100, 150, 200, 250\}, \text{ eta} = \{0.3\}, $ | |
| | $= \{1\}, \text{gamma} = \{0\},$ | $ \frac{\text{max_deptn} - \{0\}}{\text{gamma} = \{0\}}, $ | $\max_{\text{depth}=\{1, 2, 3, 4, 5\},}$ | |
| | colsam- | colsample by tree = $\{0.8\}$, | $ \begin{array}{c} \text{max_depth} = \{1, 2, 0, 4, 0\}, \\ \text{gamma} = 0, \end{array} $ | |
| | ple bytree=0.8, | $\min_{\text{child_weight}=\{1\},}$ | $\begin{array}{c} \text{gaining } \text{5,} \\ \text{colsample } \text{bytree} = 0.8, \end{array}$ | |
| | $\min_{\text{child}} \text{weight} = \{1\},$ | $\frac{1}{\text{subsample}} = \{0.5\}$ | $\begin{array}{ccc} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$ | |
| | $\begin{array}{c} - \\ \text{subsample} = \{0.5\} \end{array}$ | 1 () | $\frac{_}{\mathrm{subsample}} = 0.5$ | |
| gbm | $n.trees = \{100\},$ | $\text{n.trees} = \{250\},$ | $n.trees = \{50, 100, 150, 200,$ | |
| | $interaction.depth = \{1\},$ | $interaction.depth = \{5\},$ | 250 , interaction.depth ={1, | |
| | $shrinkage = \{0.1\},$ | ${ m shrinkage} = \{0.1\},$ | $\{2, 3, 4, 5\}, \mathrm{shrinkage} = 1$ | |
| | ${ m n.minobsinnode} = \{10\}$ | ${\rm n.minobsinnode} {=} \{10\}$ | $\{0.1\}$, n.minobsinnode= $\{10\}$ | |
| rbf | $size = \{11\}$ | $size = \{19\}$ | $size = \{11, 13, 15, 17, 19\}$ | |
| svmRadial | $\mathrm{C}=\{1\},~\mathrm{sigma}=\{0.5\}$ | $C = \{4\}, sigma = \{0.9\}$ | $C = \{0.25, 0.5, 1, 2, 4\},\$ | |
| | | | $sigma = \{0.1, 0.3, 0.5, 0.7,$ | |
| | (70) | (272) | 0.9} | |
| gamboost | $mstop = \{50\}, prune = \{no\}$ | $mstop = \{250\}, prune = \{yes\}$ | $mstop = \{50, 100, 150, 200, 150, 150, 150, 150, 150, 150, 150, 1$ | |
| | (10) | (50) | 250 , prune= $\{\text{no,yes}\}$ | |
| rf | | | | |
| JRip | $egin{aligned} \operatorname{NumOpt}=&\{2\},\ \operatorname{NumFolds}=&\{3\}, \end{aligned}$ | $egin{aligned} 	ext{NumOpt} = & \{5\}, \ 	ext{NumFolds} = & \{3\}, \end{aligned}$ | $egin{aligned} \operatorname{NumOpt} = & \{1,2,3,4,5\}, \ \operatorname{NumFolds} = & \{3\}, \end{aligned}$ | |
| | $NumFords = \{3\}, \\ MinWeights = \{2\}$ | $NumFolds = \{3\}, \\ MinWeights = \{2\}$ | $\begin{array}{l} \text{NumFolds} = \{3\}, \\ \text{MinWeights} = \{2\} \end{array}$ | |
| multinom | $\frac{\text{decay} = \{0\}}{\text{decay}}$ | $\frac{\text{decay} = \{0.1\}}{\text{decay}}$ | $\frac{\text{decay} = \{0, 0.0001, 0.001,}{\text{decay} = \{0, 0.0001, 0.001,}$ | |
| | | | $0.01,0.1\}$ | |
| pda | $\mathrm{lambda} = \{1\}$ | $\mathrm{lambda}=\!\!\{5\}$ | ${ m lambda} = \{1,2,3,4,5\}$ | |
| rpart | cp = c(0.01) | $\mathrm{cp}{=}\{0.5\}$ | $\mathbf{cp} = \{0.0001, 0.001, 0.01, 0.1, $ | |
| | | | 0.5} | |