

Homework ranking

Decision trees

Rank	Name	Score	Stdev	Impl	Model details
1*	Margo Kopli	93.8	-	weka	random forest, 10 trees
1	Hendrik Maarand	93.4	4.11	scikit	entropy cost, tree depth 7
2	Olga Dalton	91.9	2.05	self	features split into intervals of range 5, entropy cost
3	Margus Ernits	91.3	1.44	scikit	
4	Margo Kopli	92.7	2.01	weka	consider 9 random features
5	Ottokar Tilk	79.6	2.56	self	features split at median, misclassification cost, depth at least 9
6	Andrey Sergeev	20.2	0.26	self	

* All other implementations could benefit from random forest as well.

K Nearest Neighbours

Rank	Name	Score	Stdev	Impl	Model details
1	Hendrik Maarand	98.3	-	scikit	manhattan distance, K = 9, standardized, stratified cross-validation
2	Olga Dalton	96.7	0.76	self	euclidean distance, K = 21, standardized
3	Margo Kopli	94.4	0.96	self	euclidean distance, K = 5, standardized
4	Ottokar Tilk	92.6	0.00	self	euclidean distance, K = 1, standardized

K-means

Rank	Name	Score	Stdev	Impl	Model details
1	Hendrik Maarand	96.6	0.06	scikit	standardized
2	Olga Dalton	94.5	7.54	self	standardized, restart bad runs
3	Ottokar Tilk	94.2	7.96	self	standardized
4	Margo Kopli	88.2	10.57	self	standardized

Neural Networks

Rank	Name	Score	Stdev	Impl	Model details
-	state-of-the-art	99.79	-	-	convolutional neural network [pdf]
-	best KNN	99.48	-	-	using some kind of distortion model [pdf]
1	Hendrik Maarand	97,17	-	self	learning rate: 0.01; learning rate decay: 0.99; 1 hidden layer with 349 units; 30% of data was used for validation/testing; Maximum number of epochs: 50 or 100?; Early stopping if there's been no improvement in 5 epochs. Scaled feature values (divided by max). Sigmoid hidden, Softmax output activation. Cross entropy error. Shuffle samples before each epoch
-	best linear classifier	92.4	-	-	some form of all-versus-all [pdf]
2	Olga Dalton	91.81	-	PyBrain	learning rate: 0.001; weight decay (L2): 0.01; 1 hidden layer with 75 units; 35% of data was used for validation; Maximum number of epochs: 20; Each time validation error hits a minimum, try for 3 epochs to find a better one (continueEpochs=3).