MAIN RESULTS

1. The best algorithm:

'weka.classifiers.trees.RandomForest' with parameter ['-K', 4] (average accuracy result is approximately 0.885219)

Moreover, this algorithm with others parameters also give the accuracy score which is very well. ***So I suggest us apply this algorithm on our model.***

2. The worst algoritm:

'weka.classifiers.functions.MultilayerPerceptron' with parameter ['-H', '24,24,12', '-N', '150', '-L', '0.1', '-V', '20', '-E', '10']

And with others parameters, this algorithm don't give the good result. ***So don't chose this algorithm.***

3. The dataset:

Description	Dataset	Average accuracy
The hardest dataset	'badges2'	0.998830
The easiest dataset	'primary-tumor'	0.366166

4. The NaN value:

- The algo "weka.classifiers.bayes.BayesNet" with parameter '['-Q', 'weka.classifiers.bayes.net.search.local.LAGDHillClimber', '-E', 'weka.classifiers.bayes.net.estimate.BMAEstimator']' has a bad result (70 Nan Values) but with others parameters, it has a few NaN values. ***So, the selection of parameters for each algorithm is very important.***
- The dataset "mfeat-pixel" has the most values (17 NaN values). I try to open this dataset, I see that there're many value 0. It's not natural. ***So, the approach to analyze our model is heavily depenent on the nature of the dataset.***
- Most datasets have at least 1 value null (50%), and there are also no many NaN values (total is 72 NaN values in our model). ***So this missing values don't cause errors in our general model.***

5. Optimal parameters for each algorithm:

Algorithm	Best Parameter	Average Accuracy
BayesNet	['-Q', 'weka.classifiers.bayes.net.search.local.HillClimber', '-E', 'weka.classifiers.bayes.net.estimate.SimpleEstimator']	0.865083
Naive Bayers	['-K']	0.840289

Algorithm	Best Parameter	Average Accuracy
Rule Parts	['-C', 0.15, '-M', 2]	0.862190
Rules Jrip	['-N', 2]	0.861247
Trees J48	['-M', 2]	0.816474
Random Tree	[]	0.802317
Random Forest	['-K', 4]	0.884717
Multilayer Perceptron	['-H', '100', '-N', '100', '-L', '0.1', '-V', '20', '-E', '10']	0.821361
IBk	['-K', 5]	0.817839
OneR	['-B', 8]	0.633414
Simple Logistic	[]	0.865376
Logistic	['-M', 300]	0.839286
SMO	[]	0.850218