DOCTORAL PROGRAM IN ENGINEERING SCIENCES AT ITESO

ADAPTATIVE DISCOVERING ALGORITHM BASED ON NEURAL NETWORKS

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Algorithm 4 - chooseRandomData.doc

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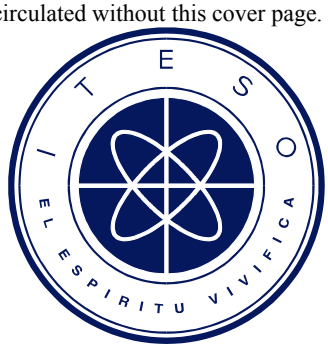

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Abstract

We present the Algorithm 4 (`chooseRandomData`) which is part of the Adaptative Discovering Algorithm based on Neural networks (ADAN algorithm).

Algorithm 4 chooseRandomData

Require: $args \neq \varnothing \wedge randomizedDataFrame \neq \varnothing$

1: $LABELS \leftarrow \ 'Setosa' \mid 'Versicolor' \mid 'Virginica'$
2: $df \leftarrow DataFrame(randomizedDataFrame)$
3: $tsda \leftarrow size(df)$
4: $tsfe \leftarrow size(df.keys)$
5: $spfe \leftarrow readArg('spfe', args)$
6: $sptr \leftarrow readArg('sptr', args)$
7: $sppr \leftarrow readArg('sppr', args)$
8: $label \leftarrow readArg('label', args)$
9: $ssfe \leftarrow int(tsfe * spfe)$
10: $sstr \leftarrow int(tsda * sptr)$
11: $dfTraining \leftarrow sample(df, sstr)$
12: $dfTesting \leftarrow \{x \mid x \notin dfTraining\}$
13: $nRecordsForPrediction \leftarrow int(tsda * sppr)$
14: $dfPredict \leftarrow sample(df, nRecordsForPrediction)$
15: $trainY \leftarrow pop(dfTraining, label)$
16: $testY \leftarrow pop(dfTesting, label)$
17: $predictY \leftarrow pop(dfPredict, label)$
18: $expected \leftarrow \ \varnothing$
19: $x \leftarrow 0$
20: **while** $x < size(predictY)$ **do**
21: $expected \leftarrow append(expected, LABELS[x])$
22: **end while**
23: **return** $(dfTraining, trainY), (dfTesting, testY), dfPredict, expected$

Take into consideration the follow about the Algorithm 4, the function `chooseRandomData(args, randomizedDataFrame)`:

1. The function `sample(dataFrame, nRecords)` in lines 11 and 14, returns a sample of `nRecords` from `dataFrame`. Again, we suggest to use a library to achieve this, in our case, once more, Pandas give us this implementation.