DOCTORAL PROGRAM IN ENGINEERING SCIENCES AT ITESO

ADAPTATIVE DISCOVERING ALGORITHM BASED ON NEURAL NETWORKS

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Algorithm 2 - readSource.doc

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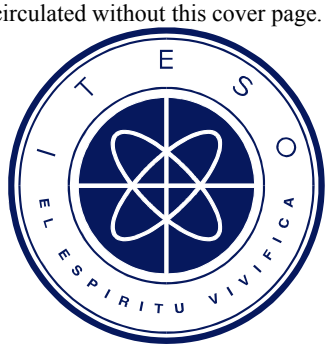

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Abstract

We present the Algorithm 2 (`readSource`) which is part of the Adaptative Discovering Algorithm based on Neural networks (ADAN algorithm).

Algorithm 2 readSource

Require: $args \neq \varnothing \wedge readArg('dataSource', args) \neq \varnothing$

1: $dataFrame \leftarrow loadData(readArg('dataSource', args))$
2: $label \leftarrow readArg('label', args)$
3: $randomizedDataFrame \leftarrow chooseRandomFeatures(args, dataFrame)$
4: $randomizedDataFrame \leftarrow concat(randomizedDataFrame,$ pop(dataFrame, label), 'columns')
5: $(dfTraining, trainY), (dfTesting, testY), dfPredict, expected \leftarrow chooseRandomData(args, randomizedDataFrame)$
6: **return** $(dfTraining, trainY), (dfTesting, testY), dfPredict, expected$

For Algorithm 2 please consider the next:

1. The function `loadData(dataSource)` in line 1, will depend from the programming language and/or from the library to achieve this. In our case, like we said at the beginning of this document, we use Keras for this. In the file `data.py`[1] you will see the implementation for the function `loadData(dataSource)`. We don't include here because is a trivial process.

2. `concat(dataFrame, obj, concatBy)`, in line 4, like its name suggests, is a function that will concat the `dataFrame` with `obj` in the axis specified by `concatBy`.

[1] adan/data.py, The Authors. May 7, 2018, https://github.com/EDario333/adan/blob/0.1.4/algorithm/data.py

In the same line, you can see the `pop(dataFrame, ‘serieName’)` function, like its name suggests, it will pop from the `dataFrame` the serie (or the y axis) specified by `‘serieName’`.

All this give us the next implementation, in Python: `randomized_df = pd.concat([randomized_df, df.pop(args.label)], 'columns')`