DOCTORAL PROGRAM IN ENGINEERING SCIENCES AT ITESO

ADAPTATIVE DISCOVERING ALGORITHM BASED ON NEURAL NETWORKS

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Implementation details.doc

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Abstract

We present the implementation details of the Adaptative Discovering Algorithm based on Neural networks (ADAN algorithm).

THE IMPLEMENTATION

You can find the first preliminary ADAN's implementation in its repository at https://github.com/EDario333/adan/. The last stable release is the 0.1.5, so make sure to run `git checkout 0.1.5`.

Please note that the implementations for the Algorithm 1 is contained in `adan.py`[1] and the rest you will find in `data.py`[2].

Also we have `utils.py`[3] at the `utils` package. This contains functions to save the outputs for each run (if you pass the `-sres` argument at the runtime, i.e.: `python adan.py -arg1 val1 -arg2 val2 … -sres -resd /path/to/the/directory/where/the/outputs/will/be/saved`). Please note that `utils.py` requires pynput[4] so, make sure to run `pip install pynput` before try the algorithm.

Finally, but not least important, you also will need pyspectator[5] because in the implementation for the `trainInputFunction(features, labels, batch_size)`

[1] adan/adan.py, The Authors. May 7, 2018, https://github.com/EDario333/adan/blob/0.1.4/algorithm/adan.py
[2] adan/data.py, The Authors. May 7, 2018, https://github.com/EDario333/adan/blob/0.1.4/algorithm/data.py
[3] adan/utils.py, The Authors. May 7, 2018, https://github.com/EDario333/adan/blob/0.1.4/algorithm/utils/utils.py
[4] pynput – PyPI, Python Software Foundation. May 7, 2018, https://pypi.org/project/pynput/
[5] pyspectator – PyPI, Python Software Foundation. May 7, 2018, https://pypi.org/project/pyspectator/

and `evaluateInputFunction(features, labels, batch_size)`, this in `data.py`[28], currently we are measuring the CPU load and its temperature; this was not included in Algorithms 5 and 6, because is not part of the Algorithms themselves.