PadrePads

Release 0.1.10

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Building on the PyPaDS toolset, **'PadrePaDS'_** aims to add additional semantic information to tracked experiments.

CHAPTER 1

Install PyPads

Logging your experiments manually can be overwhelming and exhaustive? PyPads is a tool to help automate logging as much information as possible by tracking the libraries of your choice.

- **Installing PyPads:** With pip | From source

1.1 Getting started!

1.1.1 Installing the latest release with pip

The lastest stable version of padrepads can be downloaded and installed from PyPi:

```
pip install padrepads
```

Note that in order to avoid potential conflicts with other packages it is strongly recommended to use a virtual environment, e.g. python3 `virtualenv` (see python3 virtualenv documentation) or conda environments.

> **Warning:** PadrePads requires Python 3.6 or newer.

1.1.2 Installing padrepads from source

This section introduces how to install the **master branch** of padrepads. This can be done by building from source.

Building from source

Building from source is required to work on a contribution (bug fix, new feature, code or documentation improvement).

1. Use Git to check out the latest source from the pypads repository on Github.:

```
git clone git@github.com:padre-lab-eu/padre-pads.git   # add --depth 1 if your
↪connection is slow
cd padre-pads
```

If you plan on submitting a pull-request, you should clone from your fork instead.

2. Install poetry tool for dependency managenment for your platform. See instructions in the Official documenta-tion.:

```
pip install poetry
```

3. Optional (but recommended): create and activate a dedicated virtualenv or conda environment.

4. Build the project with poetry, this will generate a whl and a tar file under dist/:

```
poetry build (in the root folder of the repository)
```

5. Install padrepads using one of the two generated files:

```
pip install dist/padrepads-X.X.X.tar.gz
OR
pip install dist/padrepads-X.X.X-py3-none-any.whl
```

Dependencies

Runtime dependencies

Pypads requires the following dependencies both at build time and at runtime:

- Python (>= 3.6),
- Pypads (>= 1.8.0)

Build dependencies

Building padrepads also requires:

- Poetry >= 0.12.

Test dependencies

Running tests requires:

- pytest >= 5.2.5,
- scikit-learn >= 0.21.3,
- tensorflow >= 2.0.0b1,
- psutil >= 5.7.0,
- networkx >= 2.4,
- keras >= 2.3.1.
- PyTorch >= 1.4.0
- torchvision >= 0.5.0

Related Projects

- **PaDRe-Pads** is a tool that builds on PyPads and add some semantics to the tracked data of Machine learning experiments. See the padre-pads documentation.

2.1 Related Projects

2.1.1 PadrePads

PyPaDRE was the original experimental project developed on the context of padre-lab to track machine learning experiments. After identifying drawbacks in the basic architecture or pypadre the development on pypads was started. The documentation for PyPaDRE can be found here.

2.1.2 PadrePads

Pypads is the basic hooking library used in padrepads. The documentation for PyPads can be found here.

Concepts

PadrePads builds upon pypads when it comes to tracking, but it also adds a layer of loggers that tracks semantic information from experiments executions.

3.1 Dataset tracking

PadrePads have a dataset logger that tries to identify the object returned by the tracked function hooked with 'pypads_dataset'. After collecting as mush metadata on this object, padrepads then dumps it on disk along with the metadata and link to the current run ID.

The currently supported dataset providers by padrepads:

```
- Scikit-learn (sklearn.datasets).
- Keras datasets.
- torchvision datasets.
```

3.2 Split tracking

3.3 Decisions tracking

3.4 Grid Search

CHAPTER 4

Indices and tables

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