Sparse Decomposition Documentation

Release 0.1.0

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CONTENTS

Implements algorithms from 'A New Basis for Sparse PCA'.

- Documentation

CHAPTER

ONE

NOTE

- Implementations are a work in progress

CHAPTER

TWO

FEATURES

- A sparse PCA (principal component analysis) algorithm
- A sparse matrix approximation algorithm

2.1 Contents:

2.1.1 Installation

At the command line either via easy_install or pip:

```
$ easy_install sparse_decomposition
$ pip install sparse_decomposition
```

Or, if you have virtualenvwrapper installed:

```
$ mkvirtualenv sparse_decomposition
$ pip install sparse_decomposition
```

2.1.2 Usage

To use Sparse Decomposition in a project:

```
import sparse_decomposition
```

2.1.3 Reference

Decomposition

class sparse_decomposition.decomposition.**SparseComponentAnalysis**(*n_components=2*, *gamma=None*, *max_iter=10*, *scale=False*, *center=False*, *tol=0.0001*, *verbose=0*)

class sparse_decomposition.decomposition.**SparseMatrixApproximation**(*n_components=2*, *gamma=None*, *max_iter=10*, *scale=False*, *center=False*, *tol=0.0001*, *verbose=0*)

Utils

2.1.4 Contributing

Contributions are welcome, and they are greatly appreciated! Every little bit helps, and credit will always be given.

You can contribute in many ways:

Types of Contributions

Report Bugs

Report bugs at https://github.com/bdpedigo/sparse_decomposition/issues.

If you are reporting a bug, please include:

- Your operating system name and version.
- Any details about your local setup that might be helpful in troubleshooting.
- Detailed steps to reproduce the bug.

Fix Bugs

Look through the GitHub issues for bugs. Anything tagged with "bug" is open to whoever wants to implement it.

Implement Features

Look through the GitHub issues for features. Anything tagged with "feature" is open to whoever wants to implement it.

Write Documentation

sparse_decomposition could always use more documentation, whether as part of the official sparse_decomposition docs, in docstrings, or even on the web in blog posts, articles, and such.

Submit Feedback

The best way to send feedback is to file an issue at https://github.com/bdpedigo/sparse_decomposition/issues.

If you are proposing a feature:

- Explain in detail how it would work.
- Keep the scope as narrow as possible, to make it easier to implement.
- Remember that this is a volunteer-driven project, and that contributions are welcome :)

Get Started!

Ready to contribute? Here's how to set up *sparse_decomposition* for local development.

1. Fork the *sparse_decomposition* repo on GitHub.
2. Clone your fork locally:

```
$ git clone git@github.com:your_name_here/sparse_decomposition.git
```

3. Create a branch for local development:

```
$ git checkout -b name-of-your-bugfix-or-feature
```

Now you can make your changes locally.

4. When you're done making changes, check that your changes pass style and unit tests, including testing other Python versions with tox:

```
$ tox
```

To get tox, just pip install it.

5. Commit your changes and push your branch to GitHub:

```
$ git add .
$ git commit -m "Your detailed description of your changes."
$ git push origin name-of-your-bugfix-or-feature
```

6. Submit a pull request through the GitHub website.

Pull Request Guidelines

Before you submit a pull request, check that it meets these guidelines:

1. The pull request should include tests.
2. If the pull request adds functionality, the docs should be updated. Put your new functionality into a function with a docstring, and add the feature to the list in README.rst.
3. The pull request should work for Python 2.6, 2.7, and 3.3, and for PyPy. Check https://travis-ci.org/bdpedigo/sparse_decomposition under pull requests for active pull requests or run the `tox` command and make sure that the tests pass for all supported Python versions.

Tips

To run a subset of tests:

```
$ py.test test/test_sparse_decomposition.py
```

2.1.5 Credits

Development Lead

- Benjamin Pedigo <benjamindpedigo@gmail.com>

Contributors

None yet. Why not be the first?

2.1.6 History

0.1.0 (2020-11-14)

- First release on PyPI.

2.2 Feedback

If you encounter any errors or problems with **Sparse Decomposition**, please let me know! Open an Issue at the GitHub http://github.com/bdpedigo/sparse_decomposition main repository.

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