OutlierDetectFrame

Enviroment

- 需要 *Python2.6+* 或者 *Python3.3+*
- 需要 *Numpy1.8*

Usage

1. 创建一新的异常检测算法 (可以使用 `cli.py -n ${算法名称}`)
2. **必须继承**
    - outdetect.algorithm.OutlierBasic.OutlierBasic
3. **可以import**
    - outdetect.utils.distance.${Distance}
    - outdetect.utils.log.LOG
    - outdetect.utils.excepts.${Exception}
    - ……
4. 使用本框架建立一个python异常检测程序
5. **必须import**
    - outdetect.datamodel.data.Data
    - outdetect.algorithm.${Algorithm}
6. **可以import**
    - outdetect.utils.distance.${Distance}
    - outdetect.utils.log.LOG
    - outdetect.utils.excepts.${Exception}
    - ……
7. `./example.py`里是一个示例程序

Cli.py

`cli.py` 是本框架的命令行工具

- 创建一个新的异常检测算法，生成的模版会在`/outdetect/Algorithm/`下 `./cli.py -n ${Name}`
- 清除所有日志文件 `./cli.py -c`
- 获得帮助 `./cli.py -h`

结构

文件夹目录

```
.
├── README.md
├── README_CHS.md
├── cli.py
├── example.py
├── log
├── outdetect
|   ├── __init__.py
|   ├── algorithm
|   |   ├── HourDetect.py
|   |   ├── OutlierBasic.py
|   |   └── __init__.py
|   ├── datamodel
|   |   ├── __init__.py
|   |   └── data.py
|   ├── template
|   |   └── algorithm.py.tmpl
|   └── utils
|       ├── __init__.py
|       ├── distance.py
|       ├── excepts.py
|       └── log.py
└── test
    └── data
```

---

outdetect.datamodel.data.Data

输入 => ***字典(Dict)***

```
        {
            KEY    =>  string,  会根据KEY排序
            VALUE  =>  list,    list  =>  float
        }
```

示例

```
        {
            '20130721': [2.1, 2.4, ...],
            '20130722': [0.5, 2,1, ...],
            '........': [..., ..., ...],
            '20130730': [0.7, 2.4, ...]
        }
```

---

outdetect.algorithm.OutlierBasic.OutlierBasic

必须覆写

```
        {
            set_conf           =>  set configures below
            run                =>  run program
            outlier_detection  =>  same as run
        }
```

---

outdetect.utils.log.LOG

日志处理

```
        {
            Console: Min Level INFO
            LogFile: Min Level WARNING
        }
```

输出示例

```
        {
            [2014-08-21 23:45:56,977] (ERROR) - error
            [2014-08-21 23:45:56,978] (WARNING) - warn
            [2014-08-21 23:45:56,978] (INFO) - info
        }
```

---

outdetect.utils.distance.Distance

Classmethod

```
        {
            cosine                =>  Cosine Distance
            euclidean             =>  Euclidean Distance
            cross_correlation     =>  Cross Correlation
            dynamic_time_wraping  =>  Dynamic Time Wraping
        }
```

---

outdetect.utils.excepts

Exception

```
        {
            DataFormatError
        }
```

---

outdetect.algorithm.HourDetect.HourDetect

API

```
        {
            set_conf           =>  set configures below
            run                =>  run program
            outlier_detection  =>  same as run
        }
```

配置

```
        {
            target      =>  string, Default: None
            dist        =>  string, Default: euclidean
            norm_range  =>  float , Default: 0.25 between 0.0-1.0
            threshold   =>  float , Default: 0.25 between 0.0-1.0
        }
```