Machine Learning Implementation

How to implement machine learning algorithms?

Tools for Machine Learning

Weka

- https://www.cs.waikato.ac.nz/ml/weka/

Python

- https://www.python.org/

Data Format

Data Format

- CSV
- ARFF
- LIBSVM

Data Format

- CSV
- ARFF
- LIBSVM

Label	D_1	D_2	D_3	…	D_n
1					
0					
0					
1					
0					
…					
1					

Data Format

- CSV
- ARFF
- LIBSVM

```
@RELATION iris

@ATTRIBUTE sepallength  REAL
@ATTRIBUTE sepalwidth   REAL
@ATTRIBUTE petallength  REAL
@ATTRIBUTE petalwidth   REAL
@ATTRIBUTE class    {Iris-setosa,Iris-versicolor,Iris-virginica}

@DATA
5.1,3.5,1.4,0.2,Iris-setosa
4.9,3.0,1.4,0.2,Iris-setosa
4.7,3.2,1.3,0.2,Iris-setosa
4.6,3.1,1.5,0.2,Iris-setosa
5.0,3.6,1.4,0.2,Iris-setosa
5.4,3.9,1.7,0.4,Iris-setosa
4.6,3.4,1.4,0.3,Iris-setosa
5.0,3.4,1.5,0.2,Iris-setosa
4.4,2.9,1.4,0.2,Iris-setosa
4.9,3.1,1.5,0.1,Iris-setosa
5.4,3.7,1.5,0.2,Iris-setosa
4.8,3.4,1.6,0.2,Iris-setosa
4.8,3.0,1.4,0.1,Iris-setosa
4.3,3.0,1.1,0.1,Iris-setosa
5.8,4.0,1.2,0.2,Iris-setosa
```

SCIKIT-LEARN

- Scikit-learn provides a range of supervised and unsupervised learning algorithms via a consistent interface in Python.
- The library is focused on modeling data.

SCIKIT-LEARN Library

2007

Developed by

David Cournapeau

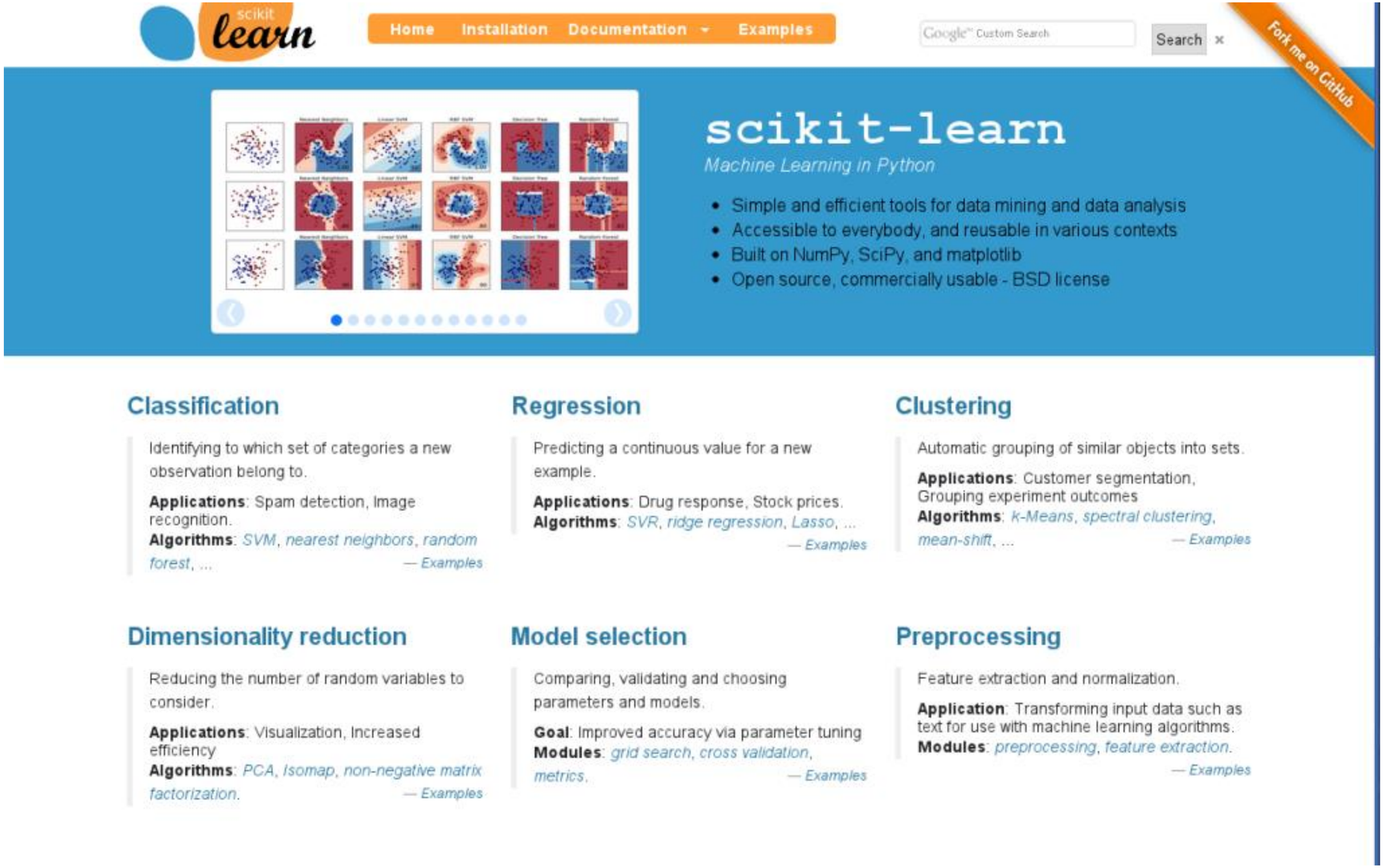
2010

- The first public release (v0.1 beta) was published in late January 2010.

Now

- > 30 active contributors
- Paid sponsorship from INRIA, Google, Tinyclues and the Python Software Foundation.

SCIKIT-LEARN Homepage



Install and Use Scikit-learn

- Install
  - pip install scikit-learn
- Check the installation
  - python -m pip show scikit-learn # to see which version and where scikit-learn is installed
  - python -m pip freeze # to see all packages installed
  - python -c "import sklearn; sklearn.show_versions()"