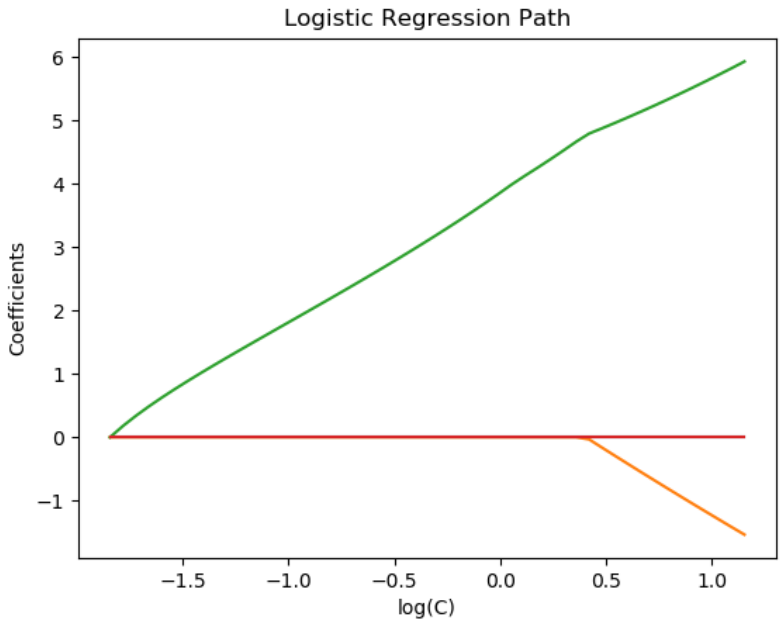
Path with L1- Logistic Regression

Computes path on IRIS dataset.

«



Out:

```
Computing regularization path ...
This took  0:00:00.036724
```

```
print(__doc__)

# Author: Alexandre Gramfort <alexandre.gramfort@inria.fr>
# License: BSD 3 clause

from datetime import datetime
import numpy as np
import matplotlib.pyplot as plt

from sklearn import linear_model
from sklearn import datasets
from sklearn.svm import l1_min_c

iris = datasets.load_iris()
X = iris.data
y = iris.target

X = X[y != 2]
y = y[y != 2]

X -= np.mean(X, 0)

# #############################################################################
# Demo path functions
```

```
cs = l1_min_c(X, y, loss='log') * np.logspace(0, 3)


print("Computing regularization path ...")
start = datetime.now()
clf = linear_model.LogisticRegression(C=1.0, penalty='l1', tol=1e-6)
coefs_ = []
for c in cs:
    clf.set_params(C=c)
    clf.fit(X, y)
    coefs_.append(clf.coef_.ravel().copy())
print("This took ", datetime.now() - start)

coefs_ = np.array(coefs_)
plt.plot(np.log10(cs), coefs_)
ymin, ymax = plt.ylim()
plt.xlabel('log(C)')
plt.ylabel('Coefficients')
plt.title('Logistic Regression Path')
plt.axis('tight')
plt.show()
```

Total running time of the script: (0 minutes 0.079 seconds)

Download Python source code: plot_logistic_path.py

Download Jupyter notebook: plot_logistic_path.ipynb