

# Smoothing splines: spline regression in python

## a basic example

Entrée [1]:

```
import numpy as np
import matplotlib.pyplot as plt
from scipy.interpolate import UnivariateSpline

# Create artificial data
np.random.seed(42)
x = np.linspace(0, 10, num=100)
y = np.sin(x) + np.random.normal(scale=0.1, size=100)

# Fit the spline regression model
spl = UnivariateSpline(x, y, s=1)

# Plot the data and the spline regression line
plt.scatter(x, y, color='blue', alpha=0.5, label='data')
plt.plot(x, spl(x), color='red', label='spline regression')
plt.legend(loc='best')
plt.show()
```

