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import numpy as np

import matplotlib.pyplot as plt

from sklearn.linear_model import LinearRegression

x = np.random.rand(100,1)

y = 2*x + np.random.randn(100,1)

linreg = LinearRegression()

linreg.fit(x,y)

xnew = np.array([[0],[1]])

ypredict = linreg.predict(xnew)

plt.plot(xnew, ypredict, "r-")

plt.plot(x,y, 'ro')

plt.axis([0,1.0,0,5.0])

plt.xlabel(r'$x$')

plt.ylabel(r'$y$')

plt.title(r'Simple Linear Regression')

plt.show()
```

