MLE_empirico

August 5, 2018

1 MLE Empirico

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In [15]: import numpy as np
         import matplotlib.pyplot as plt
         from scipy import signal

In [16]: mu=3
         sigma=0.1

In [17]: x0= np.random.normal(mu, sigma,1000)

In [19]: def gaussian(x, mu, sig):
             return np.exp(-np.power(x - mu, 2.) / (2 * np.power(sig, 2.)))

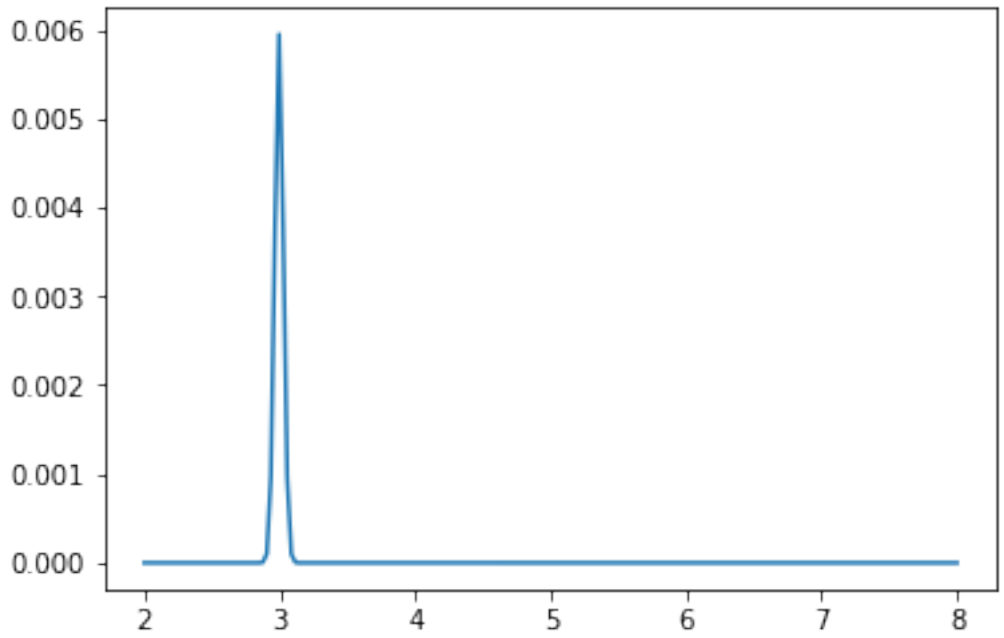
In [21]: def gaussian_log(x, mu, sig):
             return -np.power(x - mu, 2.) / (2 * np.power(sig, 2.))

In [22]: x = np.linspace(2, 8, 200)
         likelihood = []
         log_likelihood = []
         for A in x:
             likelihood.append(gaussian(x0, A, 1).prod())
             log_likelihood.append(gaussian_log(x0, A, 1).sum())
         print ("Max likelihood is at %.2f" % (x[np.argmax(log_likelihood)]))

Max likelihood is at 2.99


In [25]: plt.plot(x,likelihood)

Out[25]: [<matplotlib.lines.Line2D at 0x1b0ae82250>]
```



In [26]: plt.plot(x,log_likelihood)

Out[26]: [<matplotlib.lines.Line2D at 0x1c0b143210>]