

# Bayesian Curve Fitting

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I add a data\_set.csv file to test my program. The data set is a set of the close price of Google's stock.

First, the program loads all the data from this file. Then the program chooses  $n$  sub-set from it. For each sub-set, it contains  $n$  elements, in other words,  $n$ -days close prices. Then the program predicted the  $(n+1)$ th day's close price by Bayesian curve fitting, and compare it with the expected price.

For each time you run the program, it will predict  $n$  value of  $n$  different data set. In the output, there are the predicted value, the expected value, the absolute mean error and average relative error.

Here is an example of the output. The highest order of the polynomial is 5. The size of each sub-set is 10.

```
/System/Library/Frameworks/Python.framework/Versions/2.6
predicted value    expected value    AME    ARE
127.94            128.72           0.647   0.5 %
134.47            112.98           0.793   0.7 %
102.77            113.91           0.728   0.7 %
117.06            115.93           0.461   0.4 %
112.08            109.01           0.28    0.2 %
98.95             97.54            0.281   0.3 %
108.88            101.06           0.611   0.6 %
97.27             102.13           0.672   0.7 %
95.62             95.59            0.204   0.2 %
92.48             95.04            0.372   0.4 %
```

```
Process finished with exit code 0
```