BAYESIAN CURVE FITTING

Assignment 3

Weijia Sun

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Summary of performance evaluation

For this assignment, I have 10 sets of data. All of them are collected from real stock market. Thet are : GE1,GE2,EA1,EA2,GM1,GM2,GOOGLE,YAHOO1,YAHOO2,testdata. 9 of them have a data sequence of 30, the rest one (testdata) dataset's size is 60.

Assume the dataset's size is N, for all of the dataset, I choose the data from 1 to N-1 as the training data. After finishing the Bayesian curve fitting, I run my program and obtain the predict stock price at time N, variance absolute mean error and the relative errors. I sum all each time's absolute mean error and the relative errors. After ten times calculation. I got the overall absolute mean error and the overall relative mean error. Here are the results:

for EA1
Actual value is48.34
Estimated Value is: 52.27650498841166
To be more precise, the estimated value is in this range: [51.33519636388532 , 53.217813612937995]
Mean Error is: 3.936504988411656
Relative Error is: 0.08143369856043971

for EA2
Actual value is46.44
Estimated Value is: 45.7886813429459
To be more precise, the estimated value is in this range: [44.847372718419564 , 46.729989967472235]
Mean Error is: 0.6513186570540981
Relative Error is: 0.014024949548968522

for GE
Actual value is24.3
Estimated Value is: 24.376189896362085
To be more precise, the estimated value is in this range: [23.43488127183575 , 25.31749852088842]
Mean Error is: 0.0761898963620844
Relative Error is: 0.0031353866815672592

for GE2
Actual value is25.88
Estimated Value is: 25.28735161239085
To be more precise, the estimated value is in this range: [24.346042987864514 , 26.228660236917186]
Mean Error is: 0.5926483876091488
Relative Error is: 0.022899860417664175

for GM
Actual value is34.15
Estimated Value is: 34.0400152043665
To be more precise, the estimated value is in this range: [33.09870657984016 , 34.98132382889283]
Mean Error is: 0.10998479563350116

Relative Error is: 0.003220638232313358

for GM2
Actual value is33.52
Estimated Value is: 32.203771060747485
To be more precise, the estimated value is in this range: [31.26246243622115 , 33.14507968527382]
Mean Error is: 1.3162289392525182
Relative Error is: 0.039266973128058415

for google
Actual value is521.48
Estimated Value is: 528.79681208588
To be more precise, the estimated value is in this range: [527.8555034613537 , 529.7381207104063]
Mean Error is: 7.316812085879974
Relative Error is: 0.01403085849098714

for testdata
Actual value is538.9
Estimated Value is: 530.5559011125995
To be more precise, the estimated value is in this range: [529.6554656496512 , 531.4563365755478]
Mean Error is: 8.344098887400492
Relative Error is: 0.01548357559361754

for yahoo
Actual value is48.43
Estimated Value is: 46.70541925140552
To be more precise, the estimated value is in this range: [45.76411062687919 , 47.64672787593186]
Mean Error is: 1.7245807485944766
Relative Error is: 0.035609761482438086

for yahoo2
Actual value is50.52
Estimated Value is: 49.90363043659838
To be more precise, the estimated value is in this range: [48.96232181207204 , 50.84493906112471]
Mean Error is: 0.6163695634016264
Relative Error is: 0.012200506005574553

The overall absolute mean error is: 2.468474
The overall average relative error is: 0.024131