Assignment 3 Bayesian curve fitting stock prediction

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Instructions

The stock data is stored at the /Data folder.

Please input the filename of stocks, ".csv" is not needed to input.

And enter the number of data you want to input to test. Remember do not enter a number larger than the data size of the file for the program will break down.

Performance evaluation

Input

I chose the stock data from amazon and google. The data size is 249 and 233. And the input data size should not bigger than 248 and 232.

Chart for input and output

stock name	data size	input size	prediction	actual	Difference	absolute mean error	avg relative error	prediction variation
amazon	249	2	-298233	372.06	-298605	298605.17	802.5726227	2.50E+09
amazon	249	10	227.81	373.23	-145.42	149375.2951	400.8514676	1704.326043
amazon	249	40	368.07	307.89	60.18	99603.59162	283.7224167	1.090487669
amazon	249	60	318.69	312.55	6.14	74704.2294	218.7964807	0.473948295
amazon	249	100	302.73	320.41	-17.68	49806.71592	148.6242648	0.244075403
amazon	249	150	338.02	316.98	21.04	42694.47648	128.3939594	0.175166013
amazon	249	200	267.27	298.88	-31.61	33213.84013	102.1807111	0.148376205
amazon	249	248	386.38	380.16	6.22	6.218909439	0.016358663	0.134738658
google	233	2	-447205	556.97	-447762	223884.2048	477.8082119	2.50E+09
google	233	4	-700290	567	-700857	308796.8305	784.260857	3.06E+09
google	233	16	399.42	528.62	-129.2	247063.3042	587.2420582	41.6003636
google	233	32	568.91	533.09	35.82	205892.0562	468.525698	2.045817373
google	233	64	578.91	577.24	1.67	176479.1441	384.3760917	0.42722777
google	233	128	576.99	576.36	0.63	137303.4949	286.2331441	0.196330448
google	233	192	540.4	530.42	9.98	123574.1434	254.9160898	0.151486714

As you can see, by increasing the input test data size, the difference between prediction and actual value became smaller and smaller. The prediction variation is becoming smaller too which meaning the fluctuation of prediction have shrined and prediction becoming stable. Just over about 50 input test data, the predictions are regarded useful. It would be very useful on every prediction scenario.