Weekly Report of Research Work

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1 Work

1. Recoding the Residual Learning network codes for training my data.
2. Screening out the data, making groups and setting labels for these data.
3. Having the first training.

2 Problem

1. The result of the first training for the first 50,000 data is about only 15% accuracy.

3 Recoding the codes

I have successfully build my own neural network for training the data for International Gold Price.

The inputs of the network for each epoch including 20 numbers in the type of float32. I have divided the 20 numbers into 2 lines. The first 10 numbers of the first line are adjacent 10 prices before the specific time. And the second 10 numbers of the second line are adjacent weekly average prices before this week.

The output of the network is only one number ranged from 0 to 9. In order to get the number of each input group, firstly I calculated the Log-Rate(LR) for every data, following the formula:

$$LR = \frac{ln(A)}{ln(B)}$$

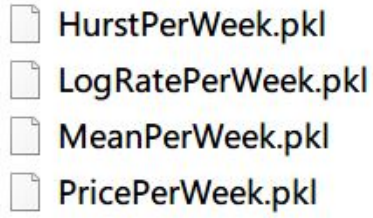
A-The mean value of the next week price

B-The price now

And then I had divided all the values of Log-Rate into tens with the labels (0-9), so I have gotten the output value of each input group.

4 Preparing the data

This week, I began to use a new method of storing the data by using the ’pickle’ model and pack the data into pkl file, which is more convenient!



After all, I have gotten everything ready for training including 3,200,000 data that have the Hurst Value over 0.96.

5 The first training

For the first training, I just used the first 50,000 data and built a Residual Learning Network including 1,100,000 parameters and 40 layers. It took me 3 hours to train 300 epochs, but finally gotten only 15% accuracy. It’s too upset.

The next week, I decide to change the learning rate and weight. If it doesn’t get better, I’ll try to change the structure of the network or the strategy of setting labels.