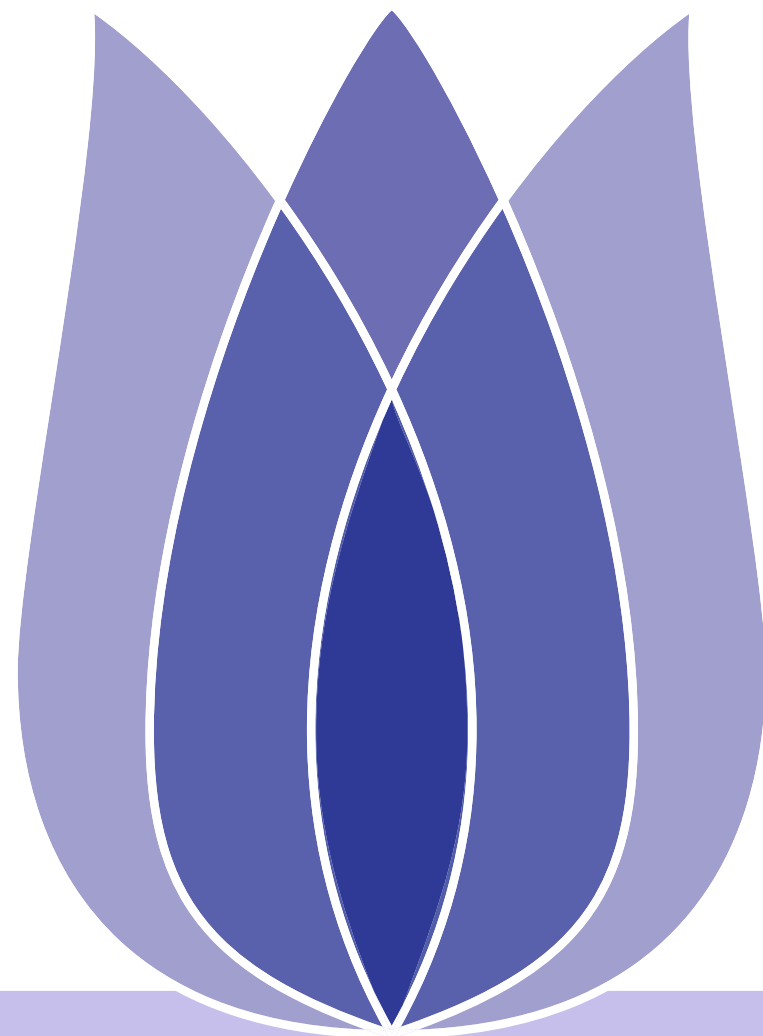


Box Office Forecast

Zhangtao Xue

Xi'an Shiyou University
Chinese Academy of Sciences

October 7, 2020





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Defn

- introduce

With the development of the film industry, a variety of film and television companies need to predict the cost and income of shooting a film and television to reduce the amount of money spent. This software is designed to predict the movie revenue, etc.



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Back propagation network (BP network) is also known as back-propagation neural network. Through the training of sample data, the weights and thresholds of the network are constantly modified, so that the error function decreases along the negative gradient direction and approaches the expected output. It is a widely used neural network model, which is mostly used in function approximation, model recognition and classification, data compression and time series prediction. Click to open the link (example of BP neural network prediction)



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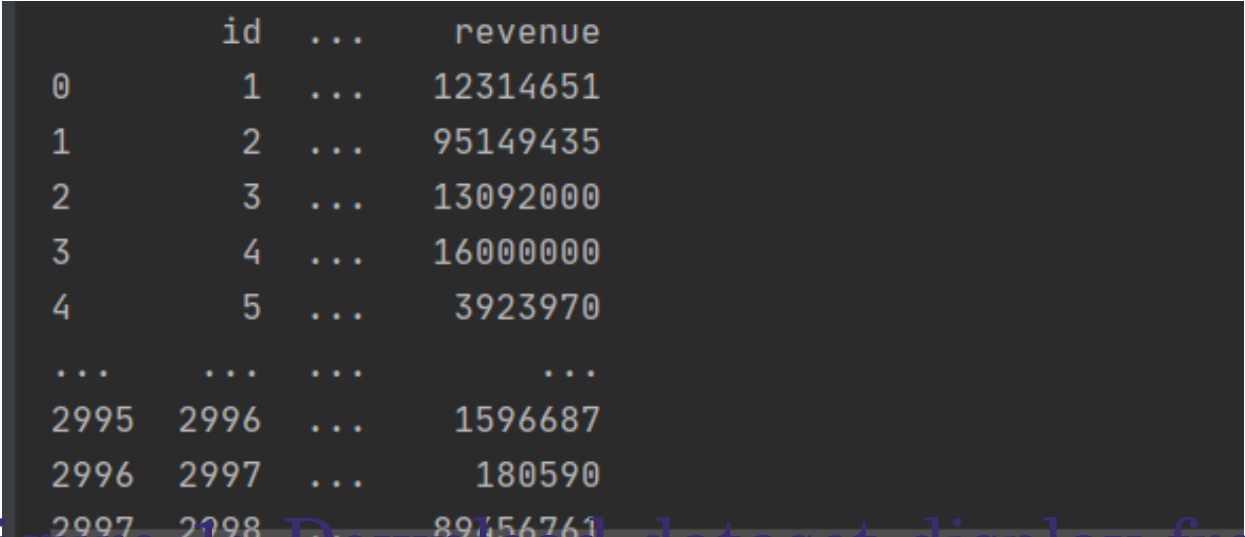
Data



Data Related Operations

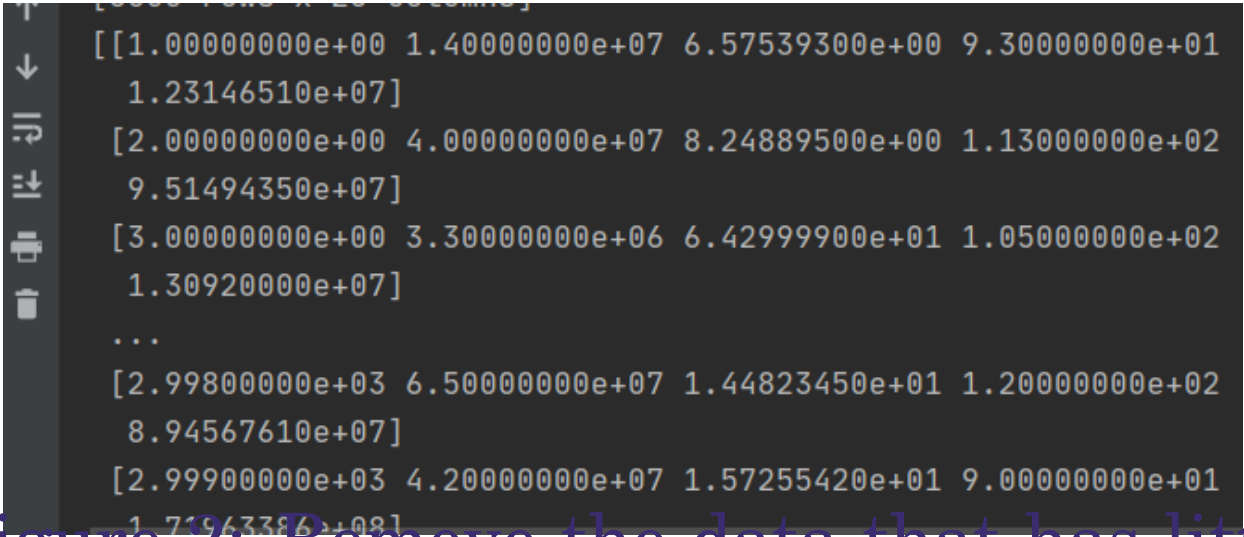
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- Data Collection
The data set directly obtained in kaggle
- Data Processing
The processing of useless data



	id	...	revenue
0	1	...	12314651
1	2	...	95149435
2	3	...	13092000
3	4	...	16000000
4	5	...	3923970
...
2995	2996	...	1596687
2996	2997	...	180590
2997	2998	...	89156761

Figure 1: Download dataset display from kaggle



	id	...	revenue
0	1	...	12314651
1	2	...	95149435
2	3	...	13092000
3	4	...	16000000
4	5	...	3923970
...
2995	2996	...	1596687
2996	2997	...	180590
2997	2998	...	89156761

Figure 2: Remove the data that has little influence on the weight



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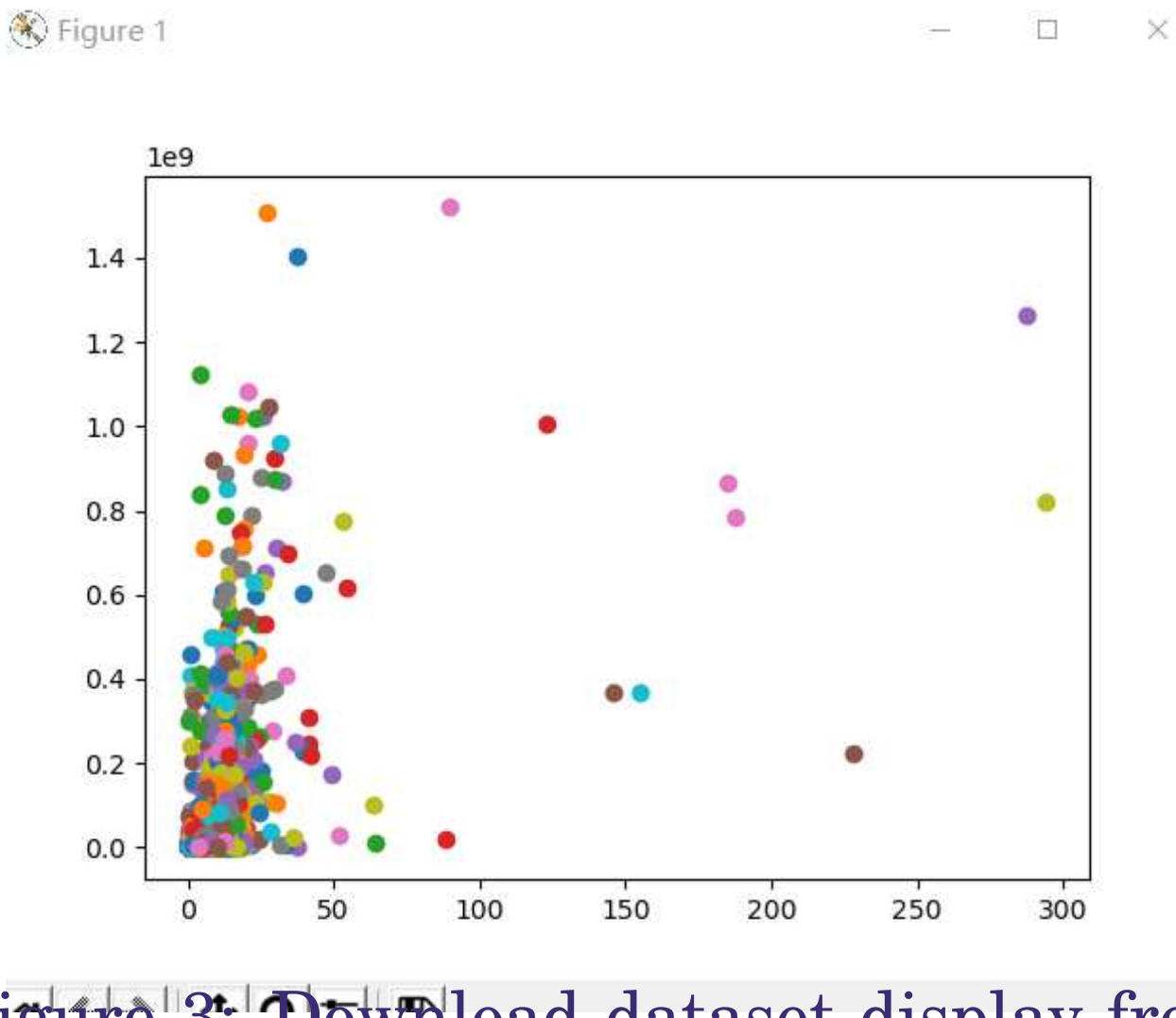


Figure 3: Download dataset display from kaggle

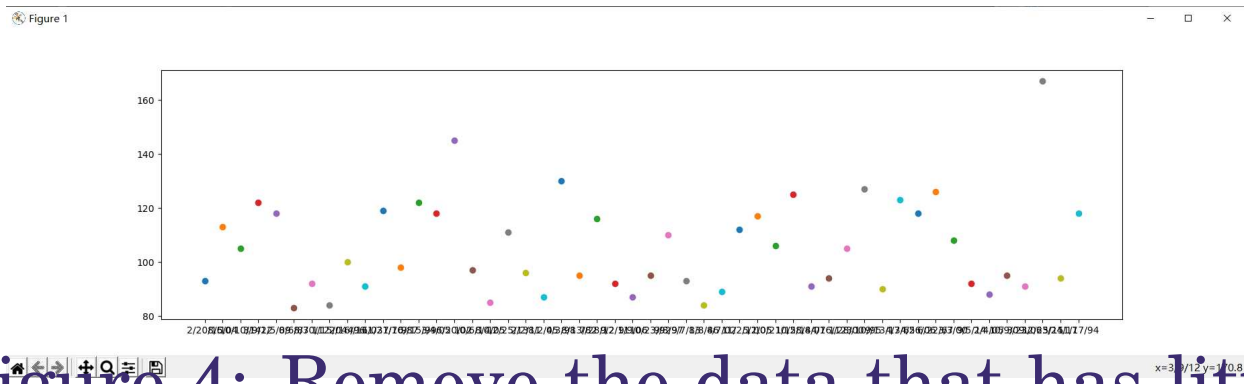


Figure 4: Remove the data that has little influence on the weight



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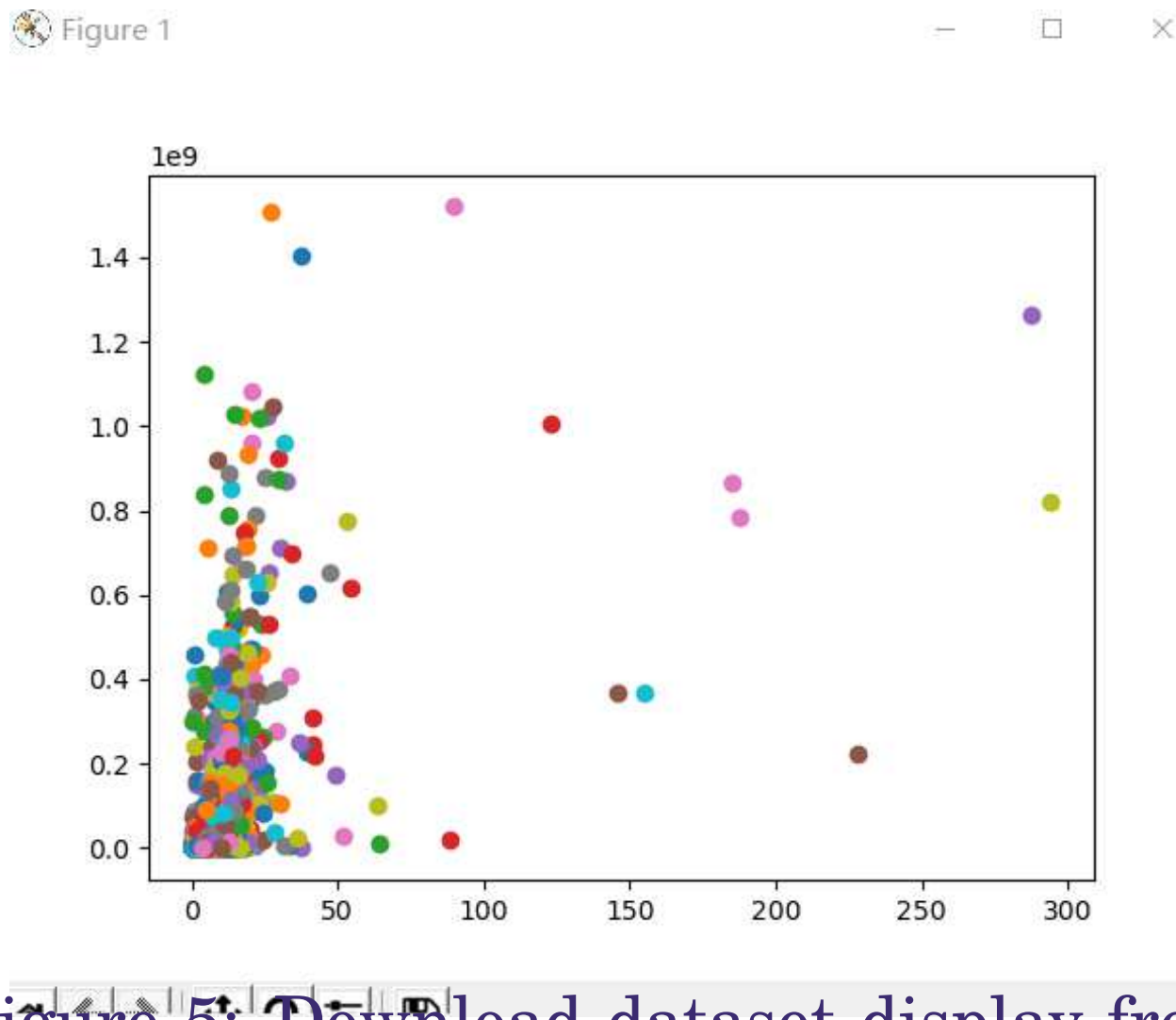


Figure 5: Download dataset display from kaggle

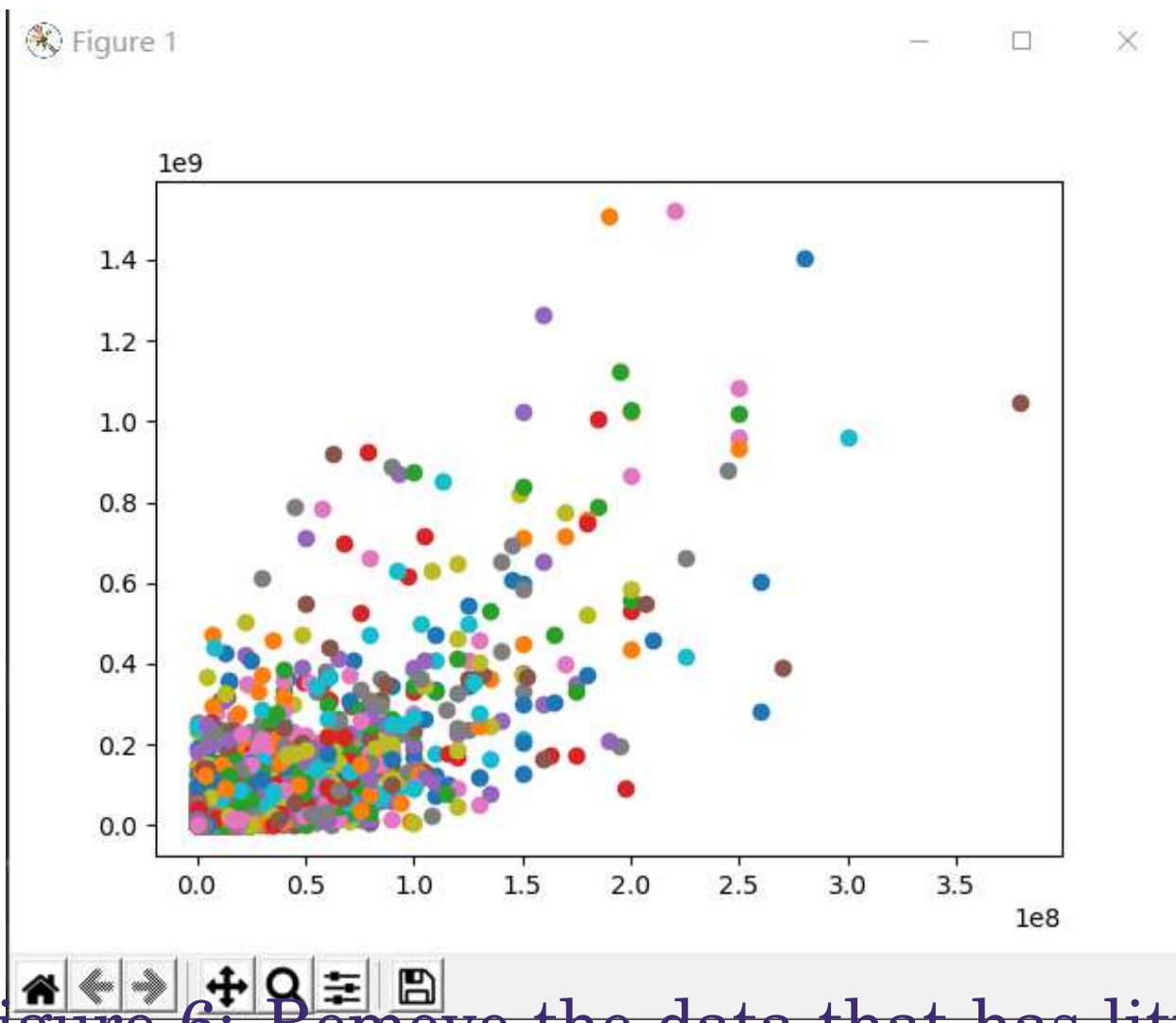


Figure 6: Remove the data that has little influence on the weight



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- Cost function selection and neural network structure selection
- Display of test data

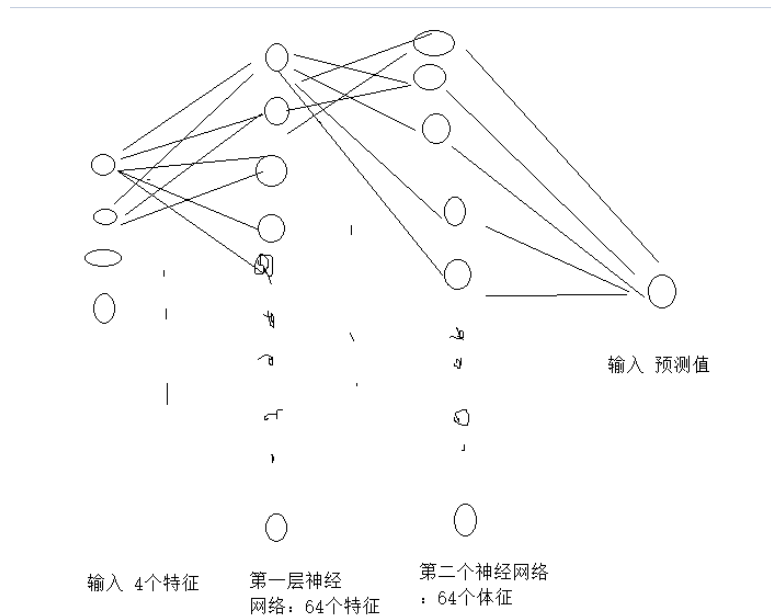


Figure 7: precdntion

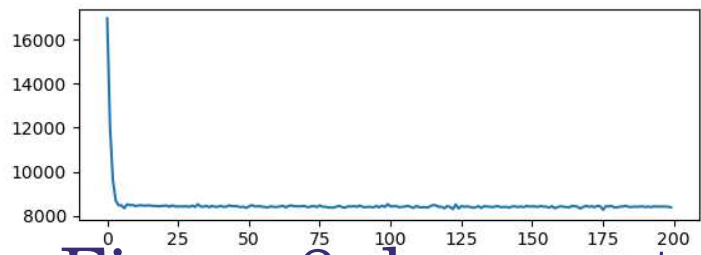


Figure 8: loss upate

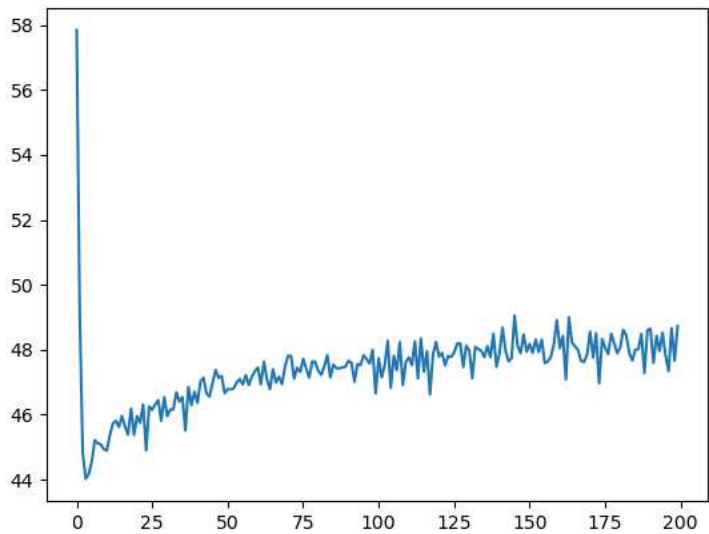


Figure 9: mean_absolute_error

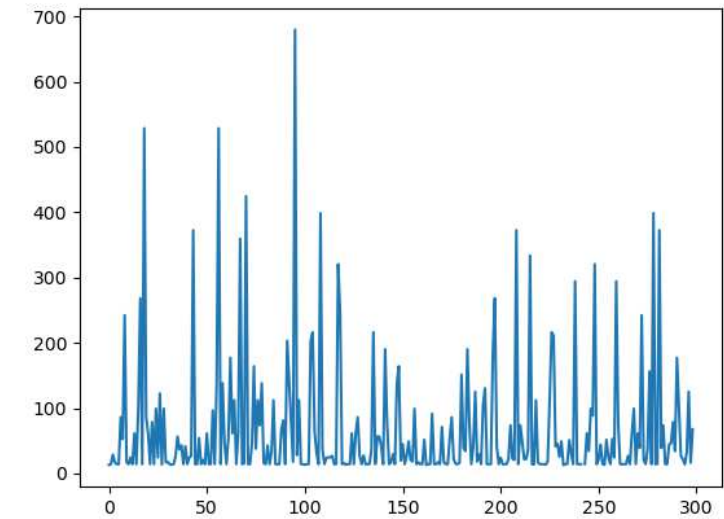


Figure 10: precdntion



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Summary: problem: in the actual test process: in the process of numerical calculation, the large value results in the program running error. // Harvest: a deeper understanding of logical regression