數位語音處理概論 HW1 Report

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Environment:

macOs Mojave 10.14

compiler:

g++

How to execute:

cd to the correct directory make

./train 100 model_init.txt seq_model_01.txt model_01.txt

./train 100 model init.txt seg model 02.txt model 02.txt

./train 100 model_init.txt seq_model_03.txt model_03.txt

./train 100 model_init.txt seq_model_04.txt model_04.txt

./train 100 model init.txt seg model 05.txt model 05.txt

./test modellist.txt testing_data1.txt result1.txt

./test modellist.txt testing_data2.txt result2.txt

Result:

Without training (i.e., just testing with raw data), the the accuracy of testing_data1 is 0.19920.

After training 10 iterations for each model, the accuracy of testing_data1 is 0.54080.

After training 25 iterations for each model, the accuracy of testing_data1 is 0.80280

After training 50 iterations for each model, the accuracy of testing_data1 is 0.82280

After training 100 iterations for each model, the accuracy of testing_data1 is 0.81000.

After training 500 iterations for each model, the accuracy of testing_data1 is 0.85600.

Summary:

We can realize that the accuracy of 100 iterations is lower than the accuracy of 50 iterations, I think it can be interpreted by the question 12 of the homework 1 FAQ.



Just like the picture, the accuracy is not always higher when the iteration number getting more.

Also, the accuracy increases slower when the iteration number is getting higher. Thus, I think the considerably bigger iteration number is not useful. In my opinion, setting iteration number of 100 is very good enough. By the way, the running time will be too long to execute a big iteration number (It takes more than 10 minutes to execute 500 iteration number). By the reason above, I choose the iteration number as 100 in my final report.