

B05902053 資工三 陳奕均 document

Summary:

Environment:

Write program on Windows 10, compile and execute on WSL
(windows subsystem for linux)

Program Usage:

Same as TA's suggestion

```
./[train] [# of iter] [initial_model] [model_data] [output_model]  
./[test] [model_list] [test_data] [output_result]
```

Basic error handling is added.

When the whole argument list is fine, the program will say "init success". When terminating, it will say "terminate".

If you want to see debug message in training program, simply add `-D PRINT_DEBUG` in `FLAG` variable in `Makefile`.

How to compile:

Simply type "make" or "make all" to compile all executables.

What I Learn from This Project:

1. There is a format string "%e" in `printf` / `fprintf` to output scientific notation
2. Through implementing algorithms taught in class, I got a better understanding of them.

Findings:

1. Highest accuracy was obtained when I set #iteration to a large number (1000). The models submitted were generated from this number.(Initial model is unchanged.)
2. The accuracy is
0.766000 when iteration=1,
0.648400 when iteration=5,

0.540800 when iteration=10;

The accuracy goes down as #iteration increases when #iteration is small and has a minimum when iteration = 9, but it goes up and converges to 0.869600 when #iteration is large enough (> 100).

3. I modify the initial model and re-run the program with the same #iteration(1000), and the result was different (accuracy: 0.870800). So different initial state can generate different model.