1. Merge three utils files into one.

2. Add a bash script that with one click it can run all analysis.

3. Add a file that can be used to generate the python environment.

4. all replication default should be 10.

5. change all “use\_kappa” or similar to “use\_reg”

Second round:

0. Add author name in the files.

1. Merge:

python memorize\_correlated\_concepts\_one\_layer\_parallel.py

And python memorize\_correlated\_concepts\_one\_layer\_plot\_from\_data.py

**(Done)**

2. Merge: numerical\_random\_network\_parallel.py

And numerical\_random\_network\_commitee\_machine\_parallel.py **(Done)**

2.1. merge the plot script and the simulation script **(Done)**

3. ~~Merge: two\_layer\_finite\_size\_analysis.py~~

~~And~~

~~two\_layer\_finite\_size\_plot.py~~

Merge the numerical\_two\_layer\_network\_parallel and its plot script. **(Done)**

3.1 make the finite size analysis and two\_layer\_network\_capacity use the same functions. (DRY) **(Done)**

4. Merge: python robustness\_analysis\_V2\_parallel.py and

python robustness\_analysis\_plot.py

4.5. Make theoretical\_two\_layer\_network.py into a few functions (can be called by other scripts) **(Done)**

5. index score scripts: integrate the heatmap index plot with robustness plot.

6. remove: lr\_SGD, gamma\_SGD, and lr\_adam from all scripts **(Done)**

7. unify the use of W\_notsymmetric **(Done)**

7.1 unify use\_reg and use\_kappa **(Done)**

8. Check: dt\_train and network\_type (Maybe useful maybe not) **(Done)**

Solved a strange error: I previously used python 3.7 with scipy 1.7.3, and the theoretical solution give correct result with initial guess [1,1],

However, with scipy 1.13, the theoretical solution gave another solution…

But if I change the initial guess to [1,0] it is solved…

(I need to stick with scipy 1.7.3)