

Phase 05: Mixture of Experts Model

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In the command window of Matlab, type “help <file_name.m>” to see the header documentation of my program scripts.

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Note 1:

This folder contains following main script. Go to Matlab Command Window and type the target main script (For example >> main_GA) for execution.

- main_W.m
 - Read the main script header for more details.
 - This program will give you the accuracies for different preassigned values of weights (before applying Genetic Algorithm (GA) or Particle Swarm Optimization (PSO)).
 - It generates a “txt” file named W_output.txt (in the current directory) that contains the output.
 - main_GA.m
 - Read the main script header for more details.
 - This program will search for optimal weight vector using GA Algorithm. It will call GA function for five times (default value of N = 5).
 - It generates a “txt” file named GA_output.txt (in the current directory) that contains the outputs (weight vector and accuracy) for all GA calls. Moreover it also generates generation graphs
<i>_ensemble_GA.bmp (where i = 1,2,3,...,N) for all GA calls.
 - main_PSO.m
 - Read the main script header for more details.
 - This program will search for optimal weight vector using PSO algorithm. It will call PSO function for five times (default value of N = 5).
 - It generates a “txt” file named PSO_output.txt (in the current directory) that contains the outputs (weight vector and accuracy) for all PSO calls. Moreover it also generates iteration graphs
<i>_ensemble_PSO.bmp (where i = 1,2,3,...,N) for all PSO calls.
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Note 2:

This folder contains following function scripts (You don't need to run them separately).

- `my_particle_swarm.m`
 - Read the function header for more details.
 - This function is used inside `main_PSO.m`.
- `combine_fitness.m`
 - Read the function header for more details.
 - This function is the fitness function (consider 2-fold cross validation, as well as both `hx` (half size) and `2x` (double size) resolutions of original CLPs) used inside the `my_particle_swarm.m` and the built-in Matlab GA functions.
- `my_ensemble_fitness.m`
 - Read the function header for more details.
 - This function is used inside `combine_fitness.m`.
- `my_svmclassify.m`
 - Not my major contribution. I slightly modify the built-in matlab function to generate probability instead of '0' or '1' labels.
 - This function is used inside `my_ensemble_fitness.m`.
- `my_svmdecision.m`
 - Not my major contribution. I slightly modify the built-in matlab function to generate probability instead of '0' or '1' labels.
 - This function is used inside `my_svmclassify.m`.

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Note 3:

The folder “Experiment_data” contains some pre-generated graph images and text-files.

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