Phase 03: Feature Selection using Genetic Algorithm (GA)

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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 >> `selection_GA`) for execution.

- `selection_GA.m`
  - Read the main script header for more details.
  - This program will apply binary chromosome based Genetic Algorithm (GA) for selecting features of each classifier.
  - It generates a "txt" file named `Output.txt` (in the current directory) that contains the information about the best individual for each classifier. It also generates following four "bmp" files containing generation graphs.
    - `disa_GA.bmp`
    - `knn_GA.bmp`
    - `tree_GA.bmp`
    - `svm_GA.bmp`
  - Moreover, the four chromosomes of the fittest individuals (from four classifiers) are saved in the `chromosome.mat` file.

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Note 2:
This folder contains following function scripts (You don't need to run them separately).

- `tree_fitness.m`
  - Read the function header for more details. Its a fitness function for GA.
  - This function is used inside `selection_GA.m`.
- `disa_fitness.m`
  - Read the function header for more details. Its a fitness function for GA.
  - This function is used inside `selection_GA.m`.
- `knn_fitness.m`
  - Read the function header for more details. Its a fitness function for GA.
  - This function is used inside `selection_GA.m`.

- `svm_fitness.m`
  - Read the function header for more details. Its a fitness function for GA.
  - This function is used inside `selection_GA.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 `svm_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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