**Project 4: Doing data Modeling using Binary particle Swarm Optimization (BPSO) with:**

**MLR: Multiple Linear Regression**

**SVM: Support Vector Machin**

**ANN: Artificial neural network**

You are required to expand project 1 and enhance it with Binary particle Swarm Optimization (BPSO) Algorithm technique. You should view and listen to the provided video and see how it is supposed to be done.

Run the work with three machine learning model (MLR, SVM and ANN). The results should go into three output files:

* MLR\_Output.csv
* SVM\_Output.csv
* ANN\_Output.csv
* Look at each output file and based on the values of fitness (The closer to zero, the better it is. Negative number is no good at all) , R2 of training and R2 of validation and R2 of testing (All should be close to each other with around 0.1 different and should be > 0.5 and <1) and number of dimensions and RMSE fitness (The closer to zero, the better it is. Negative number is no good at all), decide which result is the best one that you would choose. Sort the results based on what you think is the best result.
* **Place MLR\_Output.csv, SVM\_Output.csv, and ANN\_Output.csv in one folder, call it based on your name and your partner’s name (ex:Jack-and-Nancy-Project-4)**
* **Zip the folder and only one person in the team is required to submit the work.**

**If you provide the wrong naming convention in your projects or labs you will lose 50% of the grade immediately.**