

# Assignment-3

## Advanced Machine Learning (CS566)

Date: 09-April-2021

Deadline: April 24, 2021

The assignment targets to implement data clustering using Particle Swarm Optimization (PSO).

**Datasets:** Iris plants database, Wine, and Breast cancer. You can download these datasets from UCI machine learning repository.

### What you have to do:

1. Clusters the data vectors of three datasets using the standard *gbest* PSO. The steps are explained in paper “**Data clustering using particle swarm optimization**” (section 4.1; attached with email).
2. Keep the values of parameters same as mentioned in the paper.
3. Report the results in a table which contains the quantization error (defined in paper eq.8), the intra-cluster distances, and the inter-cluster distances for all three datasets.

### Instructions:

1. The assignments should be completed and uploaded before the deadline.
2. Markings will be based on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism.
3. Proper indentation and appropriate comments are mandatory.
4. Submission Details:
  - a. You should zip all the files and name the zip file as, e.g. 1921cs28\_1921cs29\_1921cs30.zip.
  - b. Submit your code along with images/answers to questions for proper evaluation.
  - c. Submission link: <https://www.dropbox.com/request/skh0lGsSyMbwlKU0Jynd>
5. Make necessary assumptions if required. For further clarification, you can contact the TA (Kanchan Jha).