**CS 557 STATISTICAL PATTERN RECOGNITION AND LEARNING**

**FALL 2014**

**ASSIGNMENT 6**

**DUE: Monday November 24, 2014.**

**PROBLEM**

1. Read the dataset in the file ‘images.txt’ and the corresponding labels in ‘imageLabels.txt’. This is a subset of the dataset taken from: <http://wang.ist.psu.edu/docs/related/>. There are 3 labels, namely buses (1), dinosaurs (2) and elephants (3).

2. Ignore the labels and apply SOM on this dataset. After running the algorithm, plot the map produced by SOM, a different symbol for each of the 3 labels. What are your observations?

3. Apply k-nearest neighbor to the mapped data and report the accuracy of your results.

4. Repeat SOM with different combinations of the following parameters:

grid size: 10x10, 20x20, 30x30

decay rate: 2 different values. You can use the same value for λ and β

radius σ2 for neighborhood function: 2 different values

**TO SUBMIT**

1. Make a folder with your roll number as folder name. Put Matlab’s/Python’s source code in it and place it in the ‘submit assign6’ folder on xeon. PLEASE DO NOT EMAIL
2. **Hard** **copy** of a report which is **not more than two pages** long that describes all the results of your experiments AND YOUR CONCLUSION and COMMENTS ON THE RESULTS.