# Neural Network Theory and Applications
# Homework Assignment 4

April 22, 2015
Due at April 30, 2015

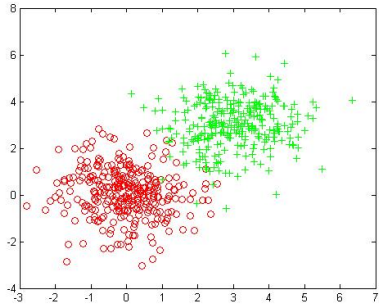
This homework requires you to implement the self-organizing map (SOM) algorithm.

## Requirement

1. Implement the Self-Organizing Map algorithm.
2. Apply SOM to the given data.
3. Use $5 \times 5$ neurons.
4. Try different Gaussian neighborhood function $\sigma$ and learning rate $\eta(n)$.

## Dataset

The dataset (hw4-data.txt) contains 600 2-dimensional points from two gauss distribution, N(0,1), N(3,1), respectively.




The data file format:

| dim1 value | dim2 value |
|---|---|
| $-4.7292864e-001$ | $3.4139773e-001$ |