LINEAR AND NON-LINEAR MODELS

Summary

Objective

- To understand the working of various machine learning algorithms.

LINEAR AND NON-LINEAR MODELS

- The Brain and the Neuron
  - Perceptron
  - Multi-Layer Perceptron: Back propagation error
  - Multi-layer perceptron in Practice
  - Examples of using the MLP– Deriving back-propagation;
- Linear separability
  - Simple Linear regression
  - MLR
- Radial Basis Functions
  - Splines: Concepts
  - RBF Network
- Support Vector Machines: Kernels.

Test your understanding

- Assume the 3-input neuron has weights 2, 3 and 4. If the transfer function is linear with input values 4, X and 5 respectively returns the output as 88. Identify X?
- 20
- 12
- 15
- 10

Test your understanding

- Solve: If the slope is 0.425 and the intercept is 0.5, then the predicted y using linear regression equation for x = 5 is ……..
- 2.853
- 4.125
- 3.525
- 2.625

Test your understanding

- Which matrix is used to compute the accuracy of supervised learning algorithm?
- Gram matrix
- Unit matrix
- Confusion matrix
- Kernel matrix

Test your understanding

- Support Vector Machine is less effective when the data samples are …….
- linearly separable
- noisy and contains overlapping point
- clean and ready to use
- without missing values

Test your understanding

- The best fit regression line error value equivalent to the ……..
- sum of the square of residuals is maximum
- sum of the square of residuals is minimum
- sum of residuals is minimum
- sum of residuals is maximum

Test your understanding

- Select the one from the following, where autonomous learning is possible.
- Artificial Neural Network
- Human Brain
- Robot
- Software Agent