RAMA UNIVERSITY

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FACULTY OF EGINEERING AND TECHNOLOGY

Soft Computing

LECTURE -02

Umesh Kumar Gera
Assistant Professor
Computer Science & Engineering

OUTLINE

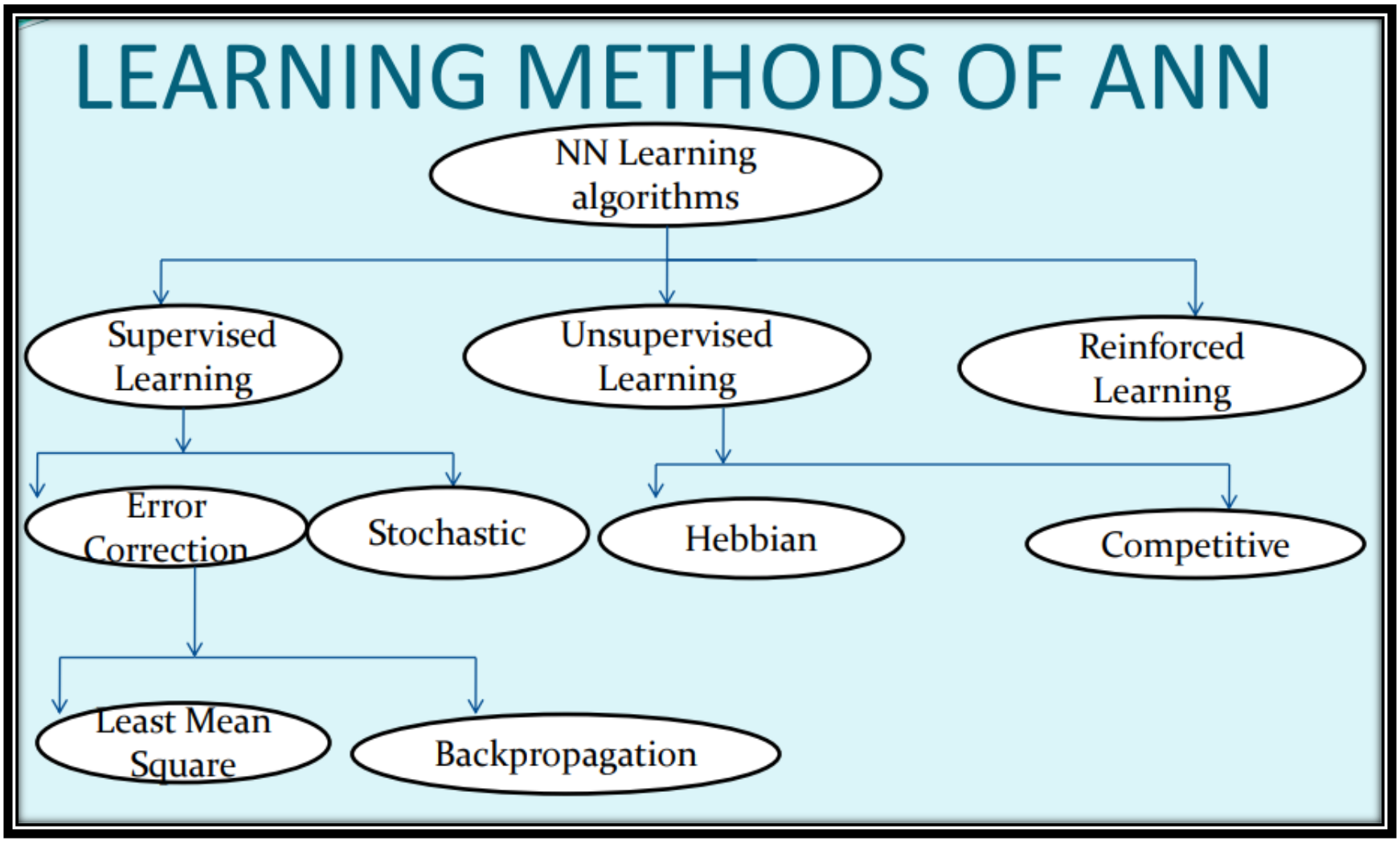
- What is learning?
- Types of learning
- Structure of Supervised learning
- Characteristics of supervised learning

LEARNING CONCEPT OF ANN

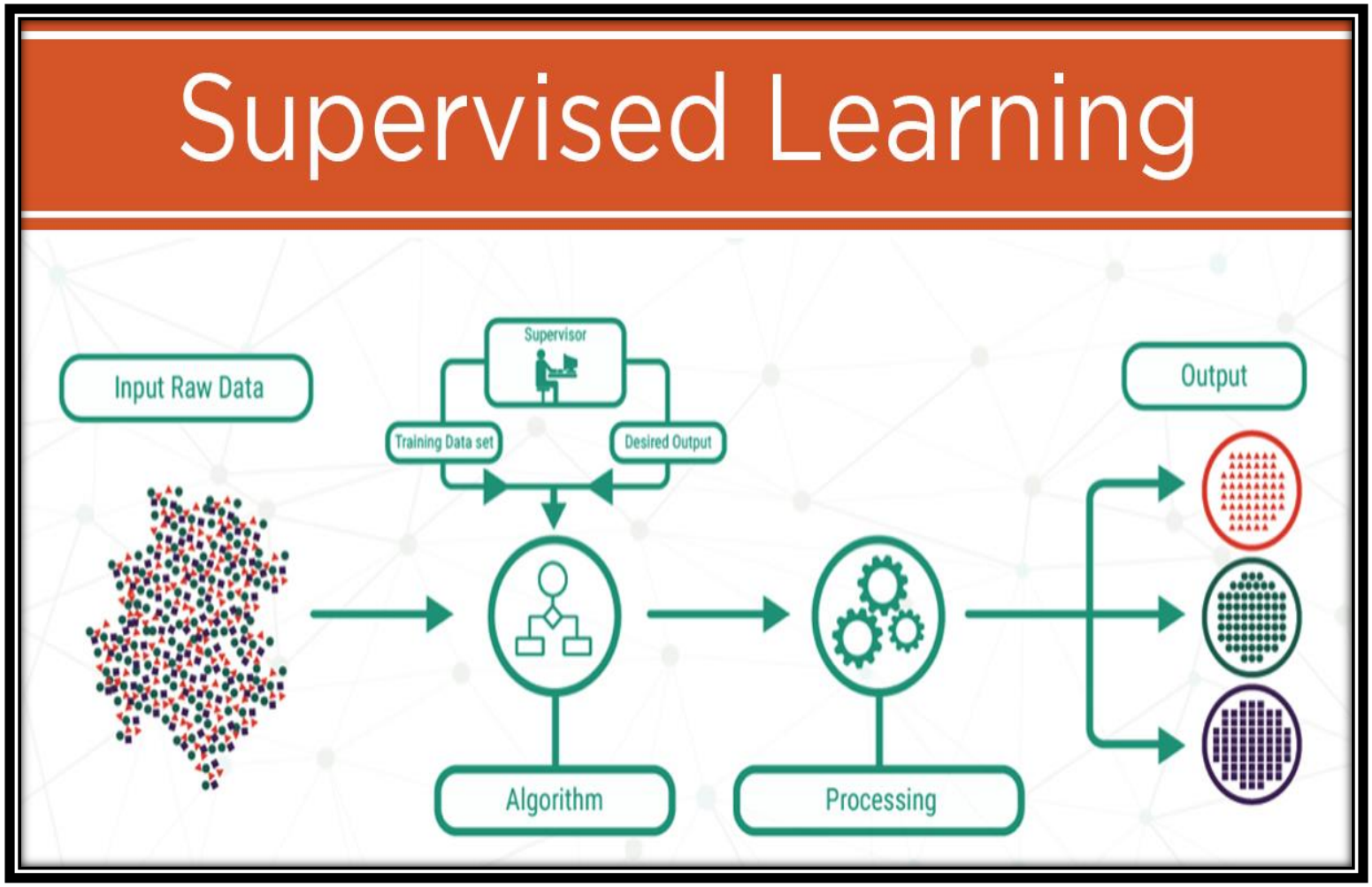
What is learning?

- learning is important feature of human computational availability.
- learning is viewed as change in behaviour after training model with some past records or activities.
- it provide effective coupling of neuron so that modification is done easily.
- it is the process of modifying neural network by updating various types of parameter like weight biases and many more.
- during the learning phase parameter of network are optimized as a result process of curve fitting.
- it is then said the network is passed through the leaning phase.

TYPES OF LEARNING FOR ANN



MODEL OF SUPERVISED LEARNING



FEATURES OF SUPERVISED LEARNING

Characteristics of supervised learning

- In this learning every input pattern which is used to train a network is depend on output pattern means that set of input is associated with set of output pattern
- This mechanism is called training set of data. The training scenario is available in the form of input output relationship.
- For error determination output is compare with target output.
- it is then feedback to the network for updating the same so the result can improved.
- example of supervised learning
- students can learn with teacher so that its learning based on input output relationship.

PRONS AND CONS OF SUPERVISED LEARNING

Advantages of Supervised Learning

- it will help exact idea about the learning process.
- Supervised learning is a simple process for you to understand.
- You can find out exactly how many classes are there before giving the data for training.
- Supervised learning can be very helpful in classification problems.

Disadvantages of Supervised Learning

- Supervised learning is limited in a variety of sense so that it can't handle some of the complex tasks in machine learning.
- Supervised learning cannot give you unknown information from the training data like unsupervised learning do.
- It cannot cluster or classify data by discovering their features by its own, unlike unsupervised learning.

MCQ

6. Which of the following is true for neural networks?

(i) The training time depends on the size of the network.

(ii) Neural networks can be simulated on a conventional computer.

(iii) Artificial neurons are identical in operation to biological ones.

a) All of the mentioned

b) (ii) is true

c) (i) and (ii) are true

d) None of the mentioned

7. What are the advantages of neural networks over conventional computers?

(i) They have the ability to learn by example

(ii) They are more fault tolerant

(iii)They are more suited for real time operation due to their high 'computational' rates

a) (i) and (ii) are true

b) (i) and (iii) are true

c) Only (i)

d) All of the mentioned

8. Which of the following is true?

Single layer associative neural networks do not have the ability to:

(i) perform pattern recognition

(ii) find the parity of a picture

(iii)determine whether two or more shapes in a picture are connected or not

a) (ii) and (iii) are true

b) (ii) is true

c) All of the mentioned

d) None of the mentioned

9. Which is true for neural networks?

a) It has set of nodes and connections

b) Each node computes it's weighted input

c) Node could be in excited state or non-excited state

d) All of the mentioned

10. What is Neuro software?

a) A software used to analyze neurons

b) It is powerful and easy neural network

c) Designed to aid experts in real world

d) It is software used by Neurosurgeon

REFERENCES

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