

CampusX Deep Learning Curriculum

A. Artificial Neural Network and how to improve them

1. Biological Inspiration

- Understanding the neuron structure
- Synapses and signal transmission
- How biological concepts translate to artificial neurons

2. History of Neural Networks

- Early models (Perceptron)
- Backpropagation and MLPs
- The "AI Winter" and resurgence of neural networks
- Emergence of deep learning

3. Perceptron and Multilayer Perceptrons (MLP)

- Single-layer perceptron limitations
- XOR problem and the need for hidden layers
- MLP architecture

4. Layers and Their Functions

- **Input Layer**
 - Accepting input data
- **Hidden Layers**
 - Feature extraction
- **Output Layer**
 - Producing final predictions

5. Activation Functions