

Some Nice Pictures

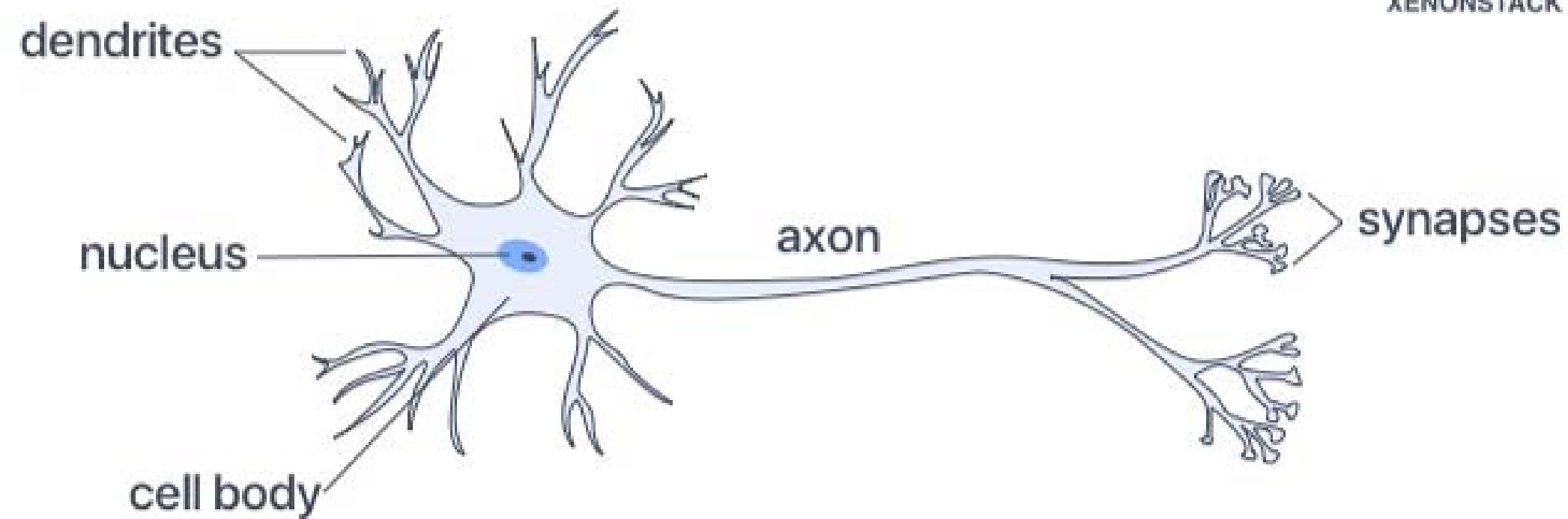
NIRDOSH BHATNAGAR

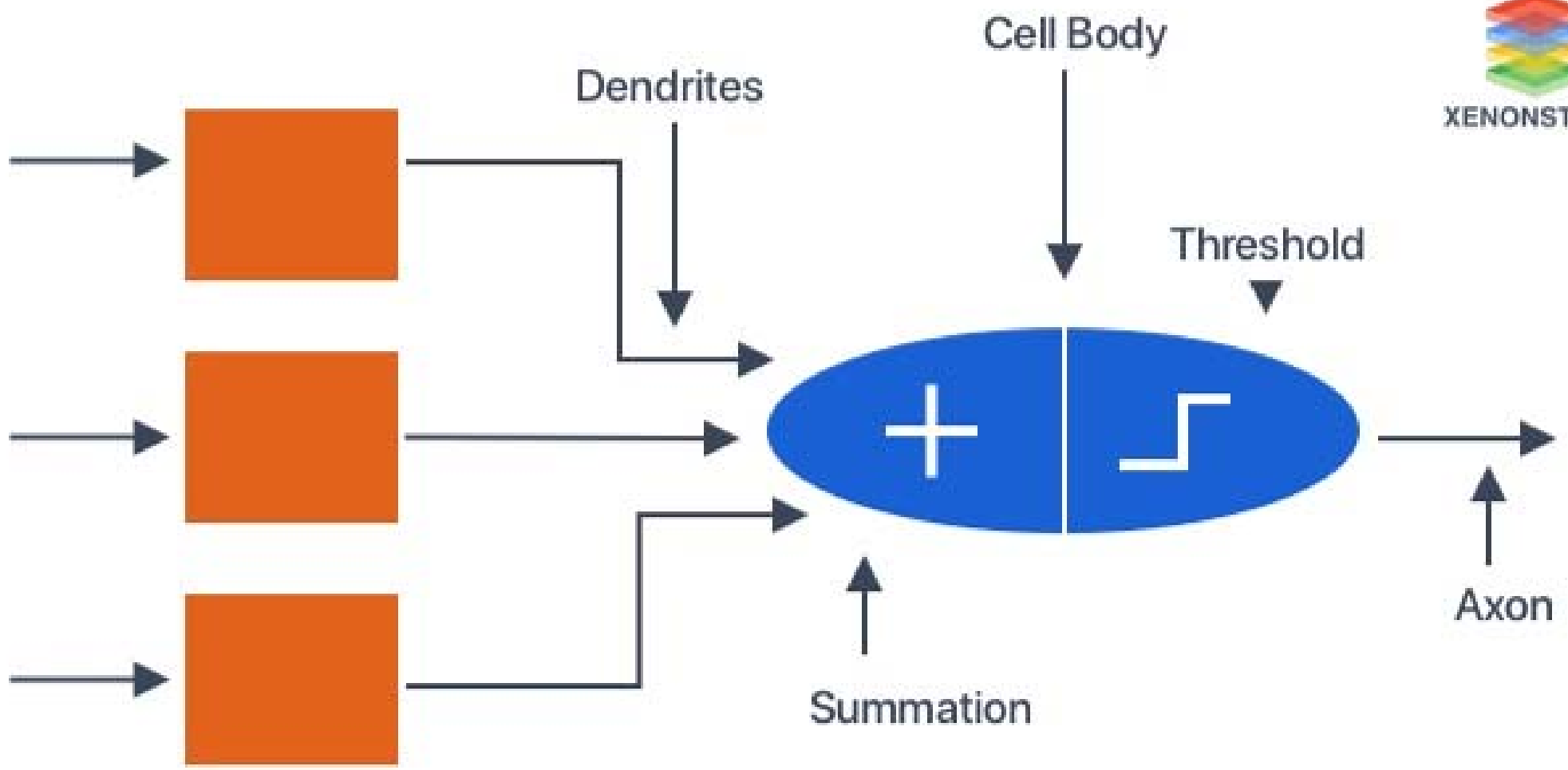
1. Biological Neuron
2. Conceptual Neuron
3. Artificial Neuron - 1
4. Artificial Neuron - 2
5. ANN Terminology
6. Feed Forward NN
7. Types Of Neural Networks
8. DL Uses

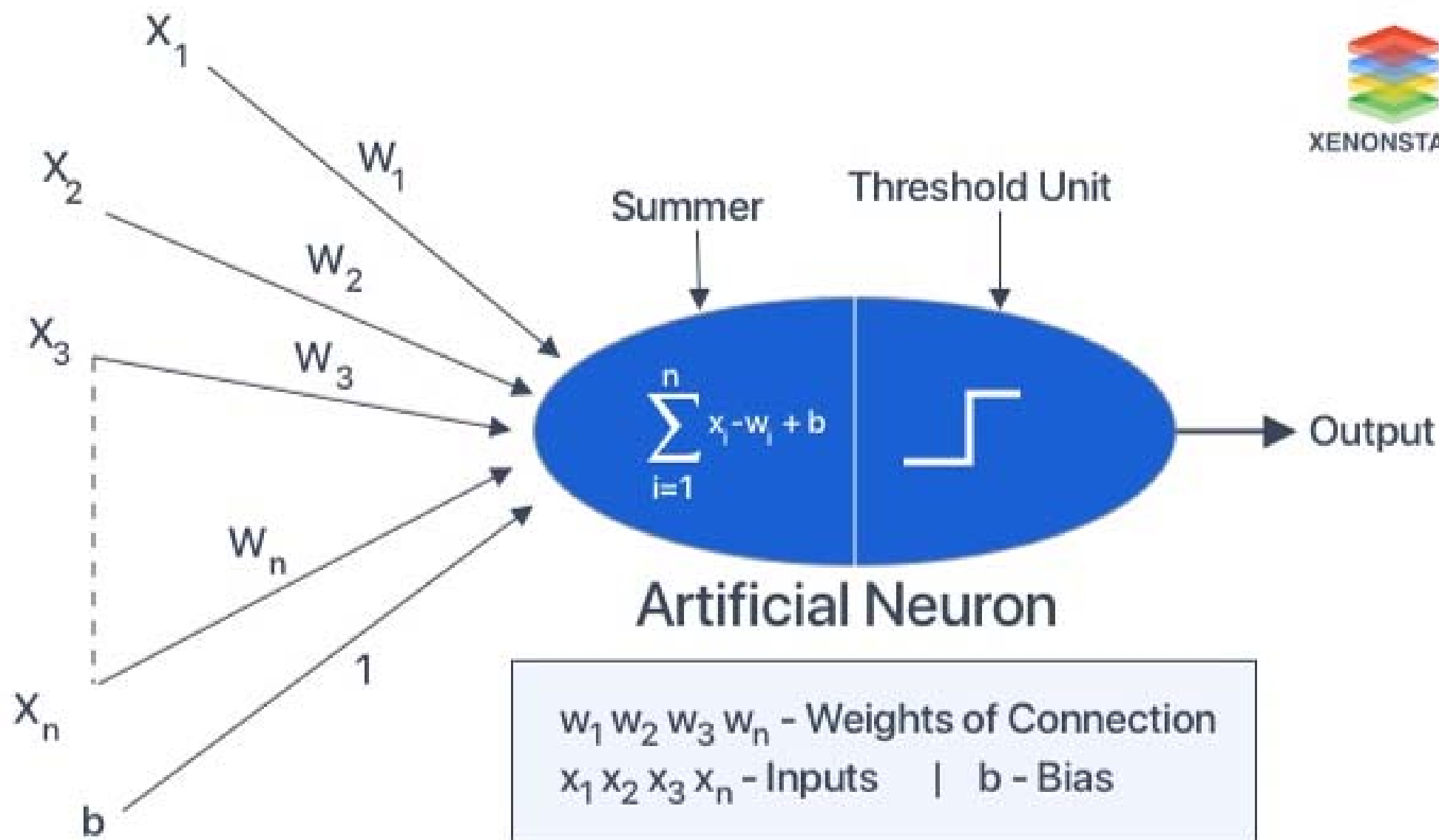
Biological Neuron



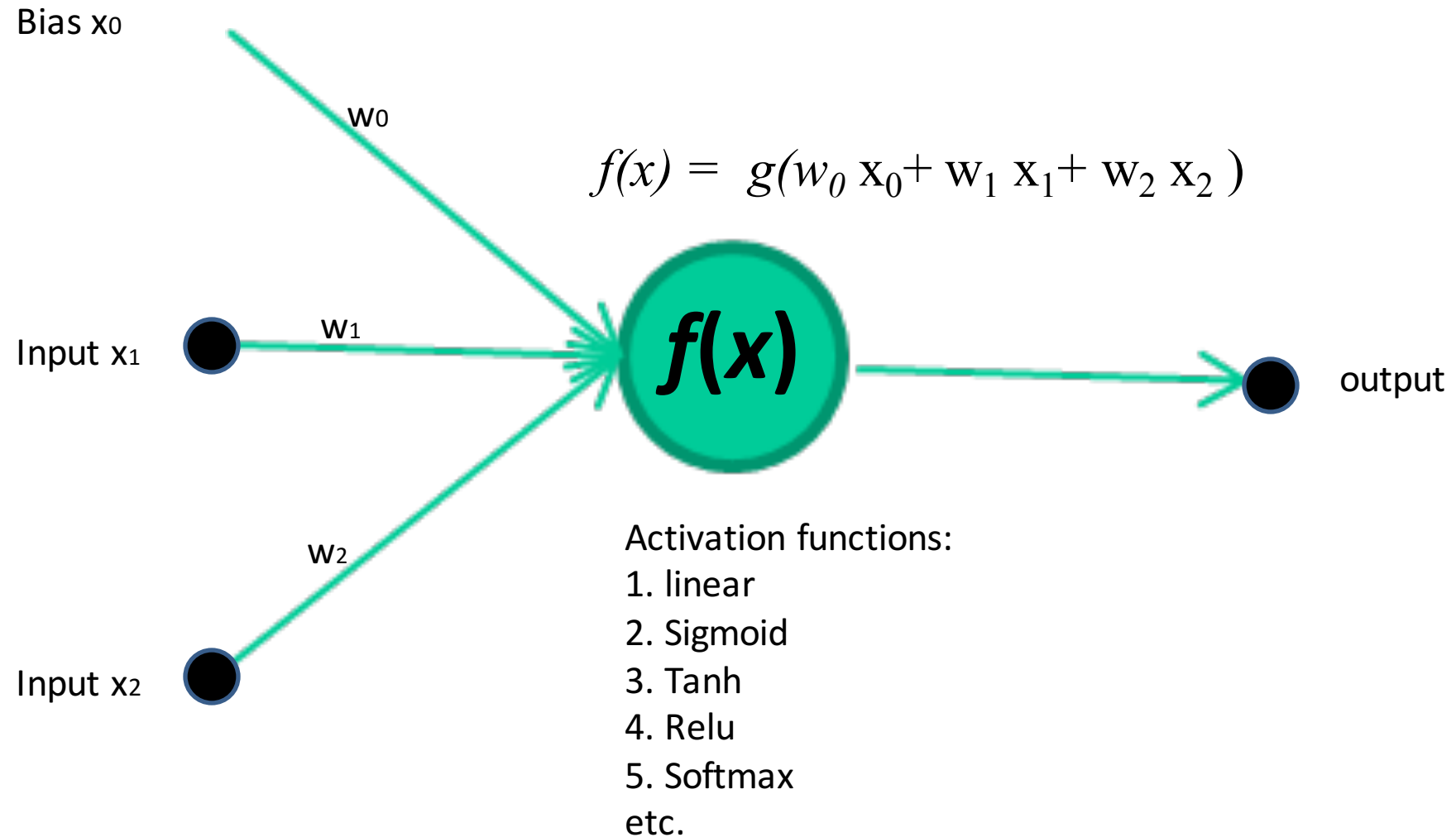
XENONSTACK

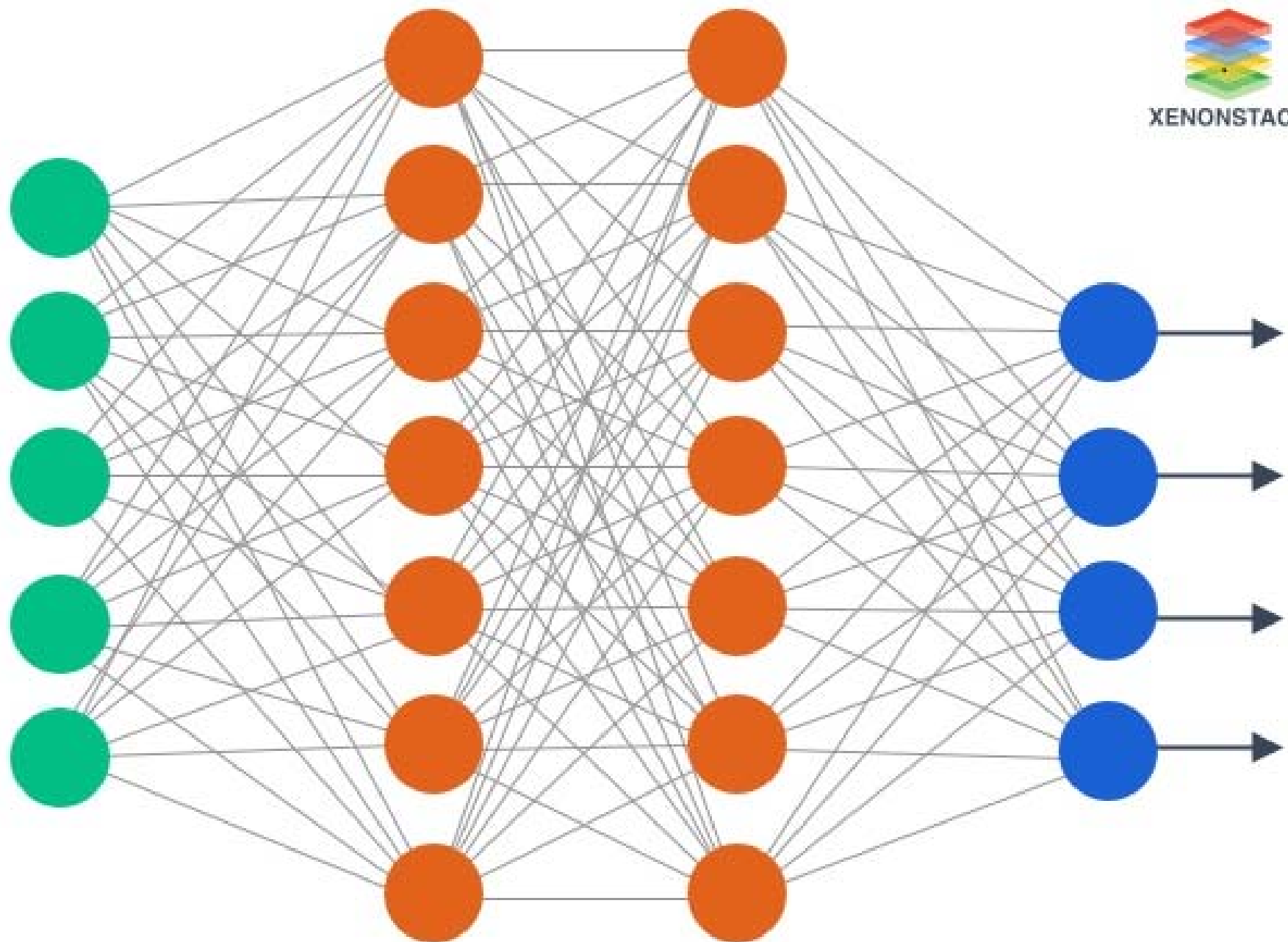






Single Unit, Input, weights, activation function, output





Input Layer

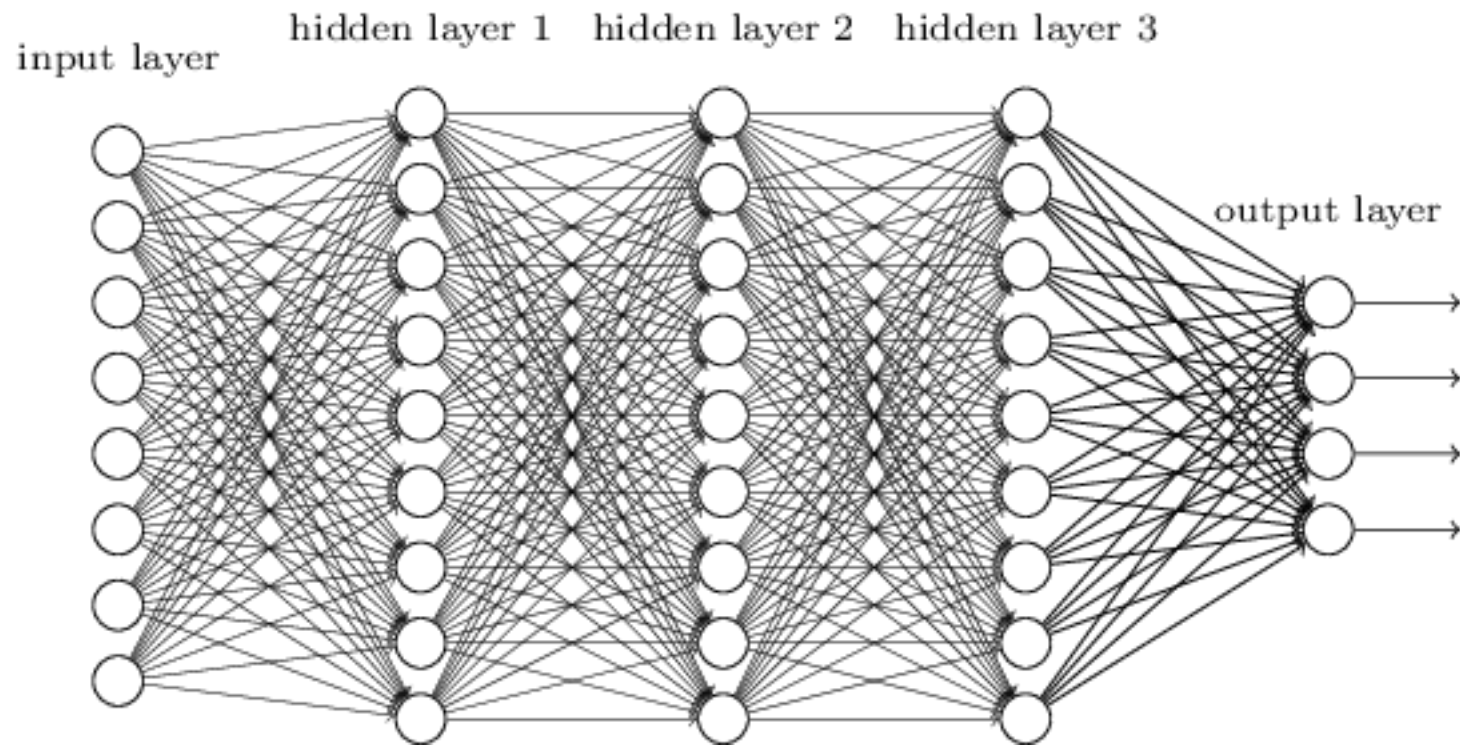


Hidden Layer



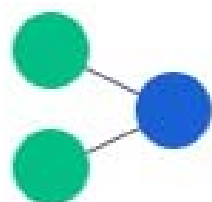
Output Layer

Fully Connected Layers





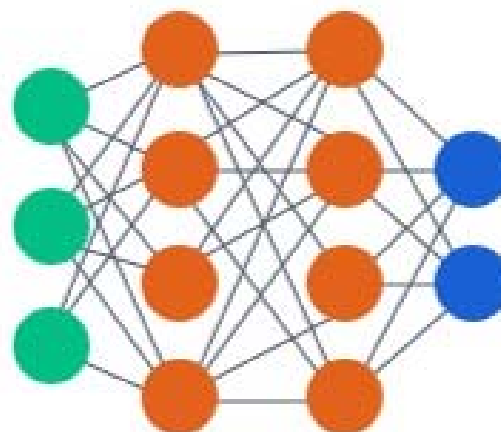
XENONSTACK



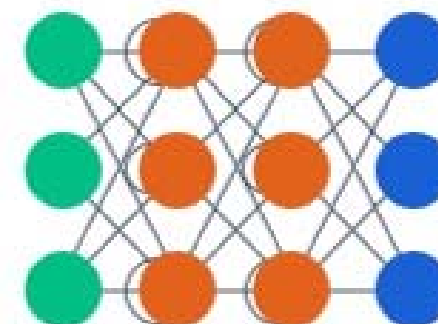
Single Layer Perceptron



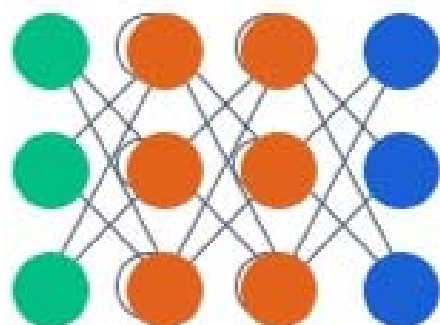
Radial Basis Network (RBN)



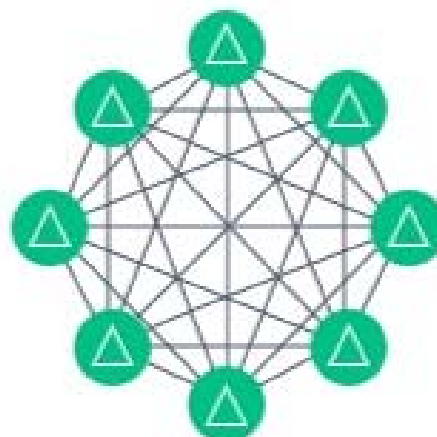
Multi Layer Perceptron



Recurrent Neural Network



LSTM Recurrent Neural Network



Hopfield Network



Boltzmann Machine

● Input Unit

● Hidden Unit

△ Backfed Input Unit

● Output Unit

△ Feedback with Memory Unit

△ Probabilistic Hidden Unit



Where can deep learning be used?

Anywhere you want to classify data ...

Industrial Factory & Automation



- Improving pick and place
- Predictive maintenance/failure

Agriculture



Optimize crop watering
and harvesting

Retail



- Improve automated checkout
- Track shoppers and provide incentives

Deep learning: A few example uses

Industrial

- Object detection and localization
- Sorting
- Robotics
- Quality control and inspection
- AR (camera pose and location)
- Packaging

Retail

- Analytics
- Warehouse management
- Theft prevention
- Intelligent bar code scanners
- Monitoring and distribution control (shelf replenishment, etc.)

Entertainment/Gaming

- Gesture recognition
- User identification
- Emotional feedback
- Experience monitoring
- Advanced analytics

Smart Homes

- Vacuum cleaners
- Automatic lawn mowers
- Intrusion and Hazard detection
- Smart lights, ovens, refrigerators, etc.

Drones

- Obstacle avoidance
- Path planning
- Flight control with radar and camera sensors

Agriculture

- Autonomous tractors and combines
- Fruit harvesting
- Weed control

Smart Cities & Infrastructure

- Parking
- Traffic monitoring
- Security monitoring
- Road inspection

Food Industry

- Sorting
- Quality control

Mission Critical

- Perimeter surveillance
- Target acquisition
- Fire-and-forget guidance
- Autonomous vehicles