

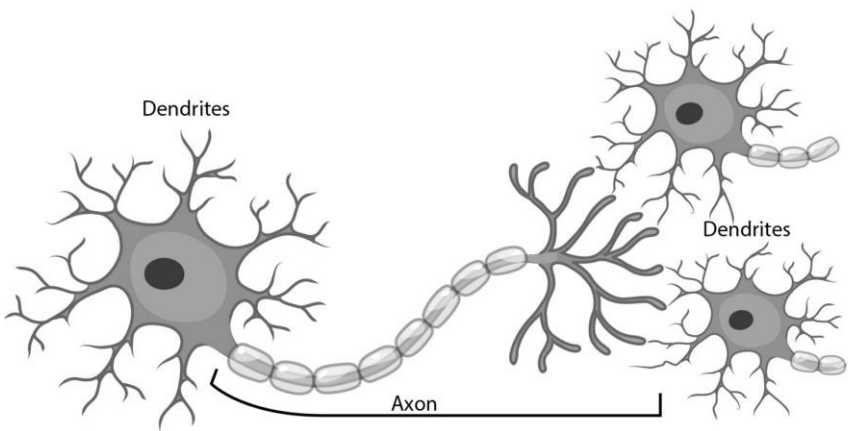
Artificial Neural Networks

Lesson 8 – Section 3

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How an Actual Neuron Passes Information



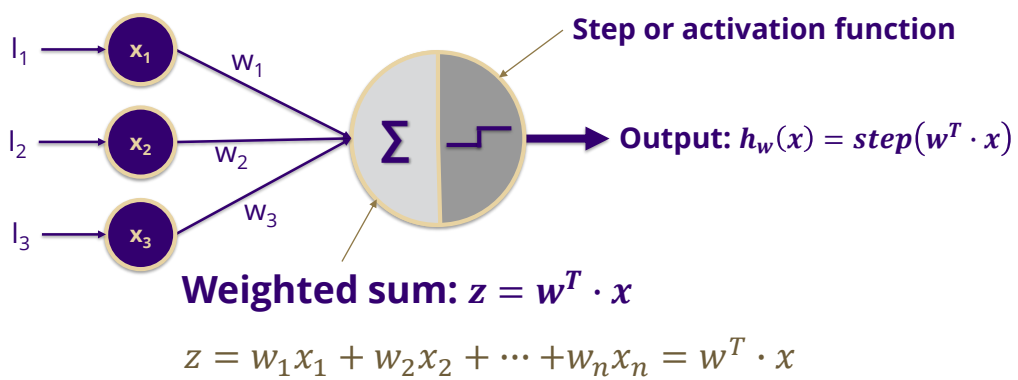
Artificial Neural Networks

- A simplification of a real neural network
- Early success, led to later disillusionment when ANNs had limited use
- Computational capability and access to more data have caused the resurgence in ANN development

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Perceptron

The simplest ANN architecture 2 layers: input and output



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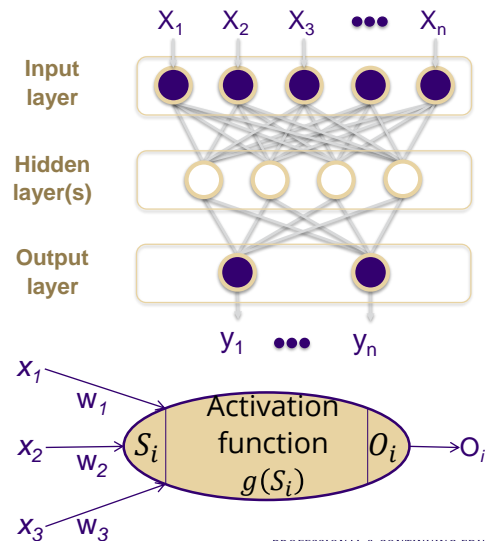
Structure of an Multi-layer ANN

Multilayer ANNs consist of an input, hidden layer(s) and an output layer

They can have multiple outputs

Weights of an upstream layer is an input vector to the next

Support data that is not linearly separable



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ANN Concepts

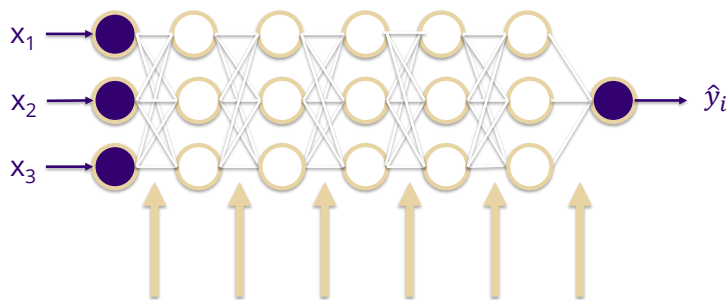
- Depth of Architecture
- Gradient Descent
- Forward-chaining
- Backpropagation
- Activation Functions
- Momentum
- Convergence
- Overfitting

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Depth of Architecture

DoA refers to the number of levels of composition of non-linear operations in the function learned



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