Machine Learning

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What's Machine Learning?

"Machine learning will automate jobs that most people thought could only be done by people." - **Dave Waters**

Examples:

- Amazon recommendations based on their customer's browsing and purchasing behavior.
- Google's search engine, that ranks the websites by relevancy.
- Self-driving cars.
- *Email spam filters.*

Types of Machine Learning

Learning algorithms:

- Supervised learning
- Unsupervised learning
- Reinforcement learning

Desired output:

- Classification (spam, not spam)
- Regression (house prices, stock prices)
- Clustering (customer segmentation)
- Density estimation (test results of a specific number of people)
- Dimensionality reduction (mapping inputs into a lower-dimensional space)

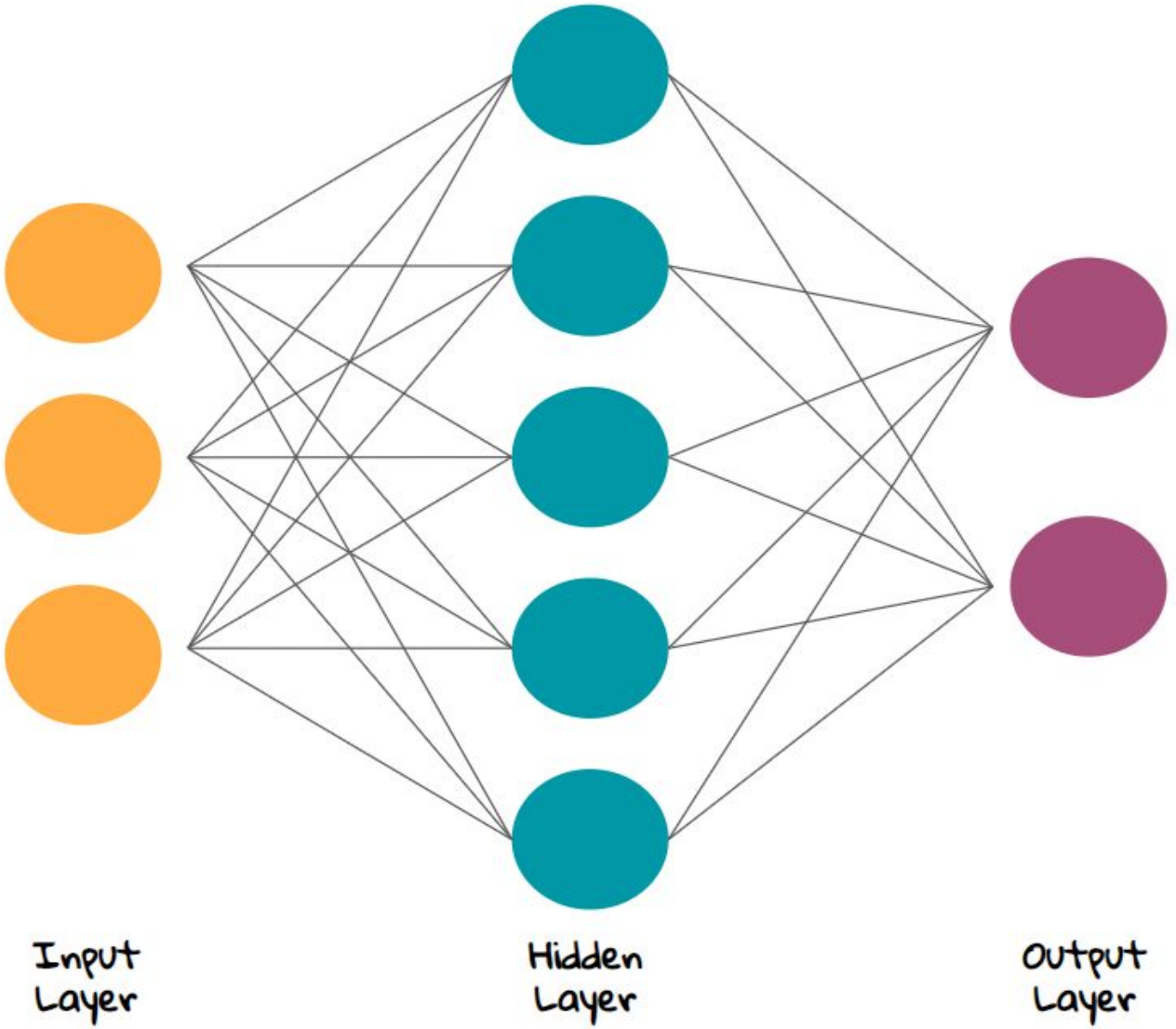
Neural Networks

Main objects of ANN:

- Neurons (Nodes)
- Layers
- Learning
- Connections

The goal is to mimic the way the human brain organizes and make right predictions

Neural Networks



Training

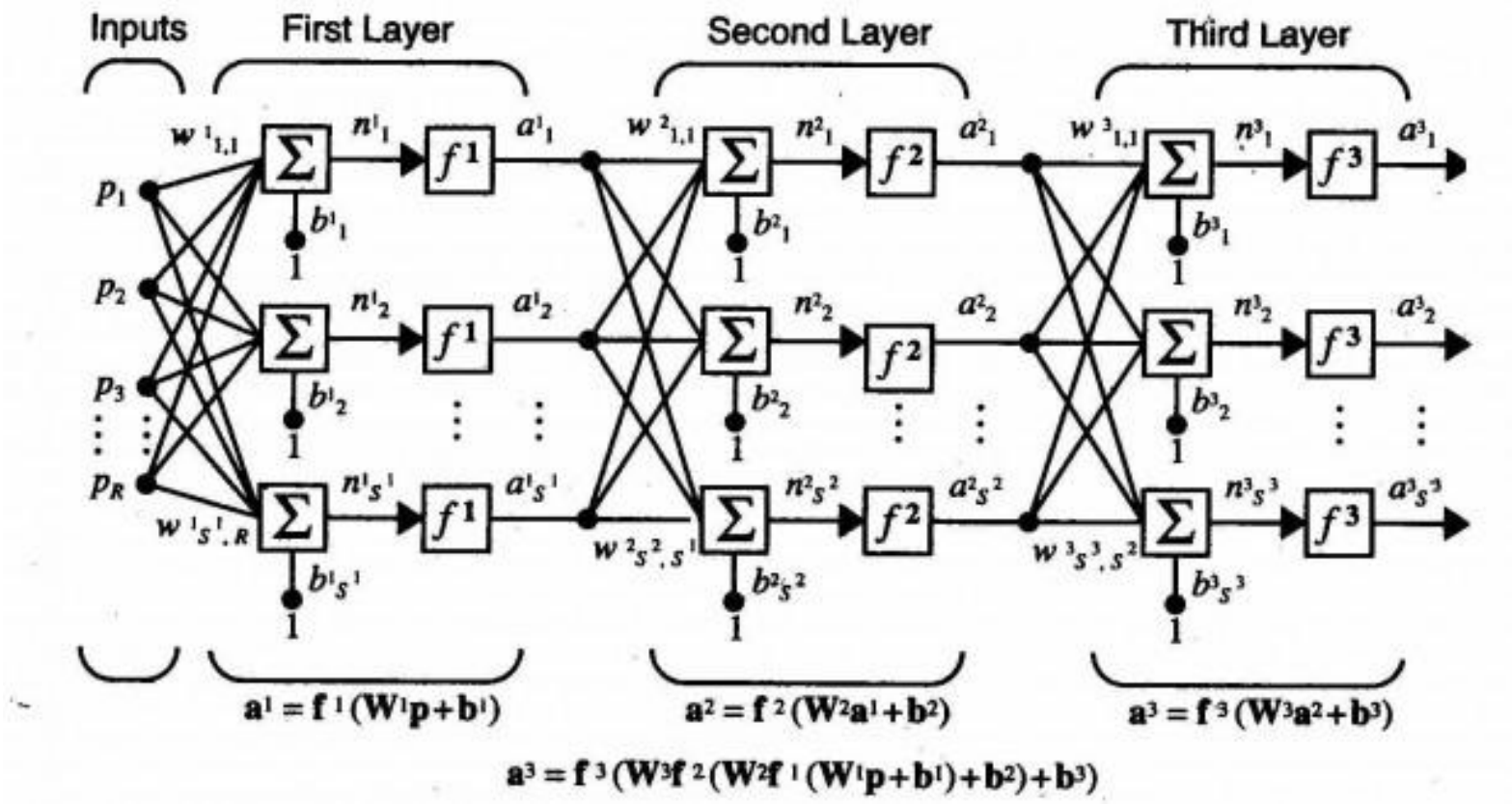
Back propagation:

1. Random weight
2. Take the inputs from the training set and pass them
3. Calculate error
4. Adjust the weights
5. Repeat this 10K times.

Training

Output = w1*in1 + w2*in2

Adustment = 0.01*err*input



People who know about AI nothing and says I'll destroy humanity soon

My ANN