Introduction

Sidharth Baskaran

July 2021

Neural Network

- A neuron implements an activation function
- ReLU function → rectified linear unit (take max with 0) often used
- Stack neurons together to create network of multiple input features
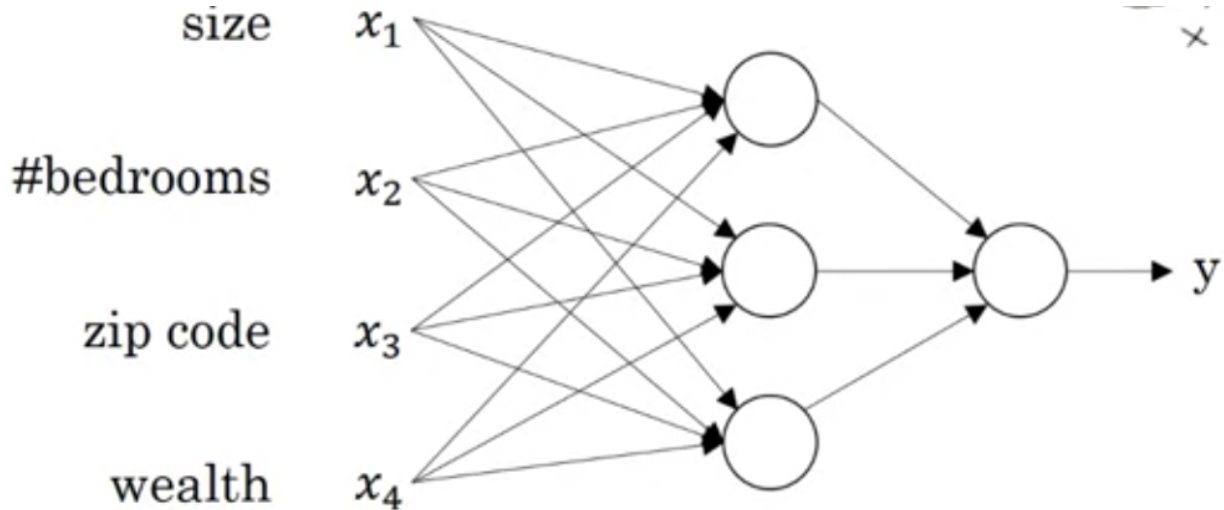- Provide input and output only (supervised learning)

Figure 1: Example NN

- Given enough training data, very accurate in mapping an input to an output

Supervised learning with neural networks

- Structured data → databases of data with organization
- Unstructured data → data is not well-defined (e.g. images, audio, text)

Deep learning progress

- Neural network progress always increases with scale of data whereas traditional algorithms plateau, esp. with **large** NNs
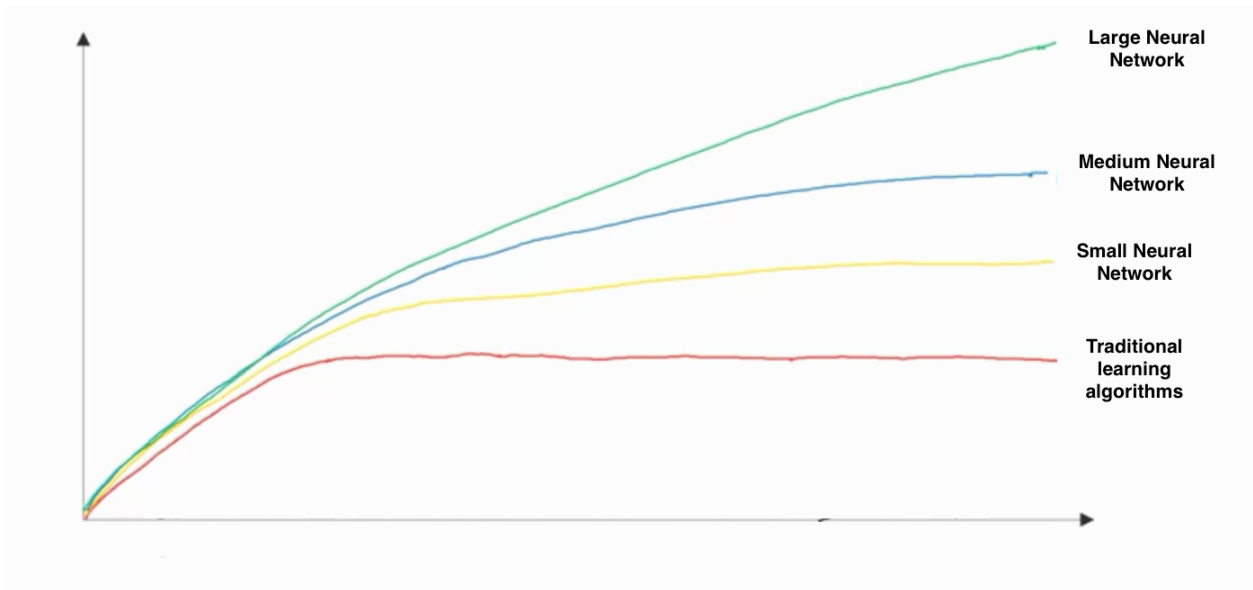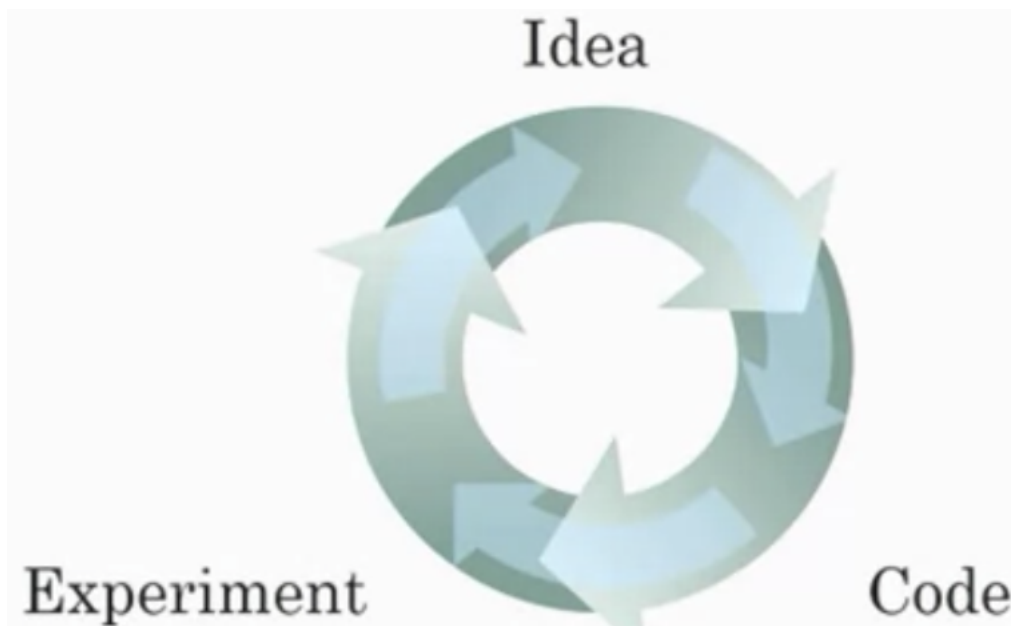- Scale drives deep learning progress
- m denotes training set size

Figure 2: Scale

Figure 3: Deep learning cycle