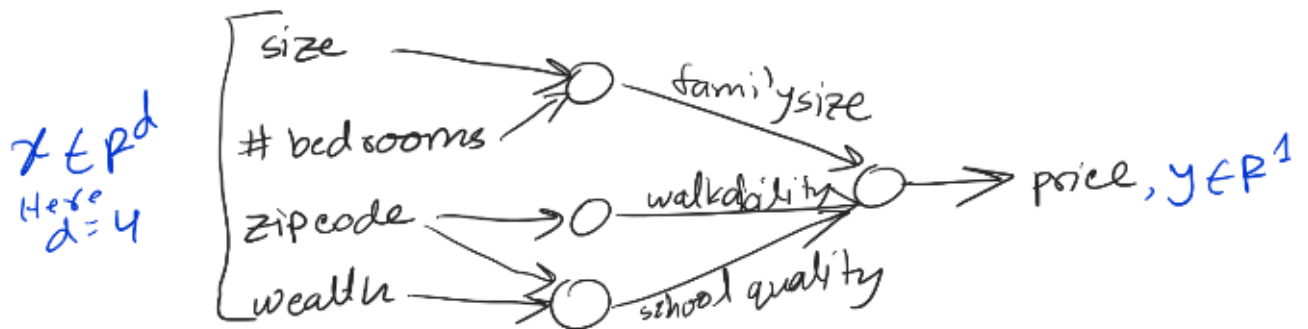
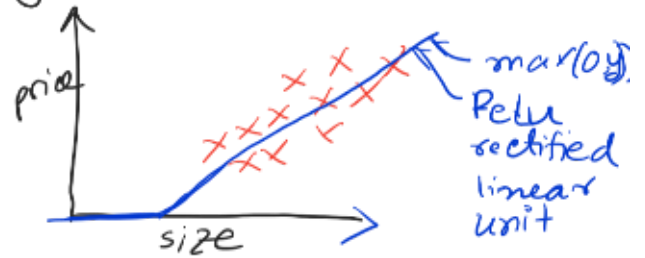
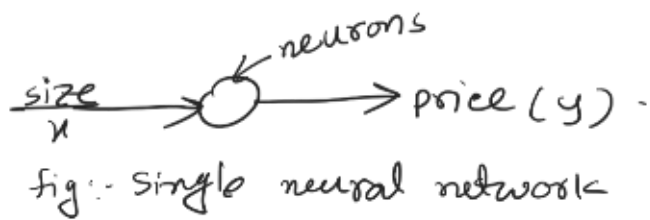


Deep learning

Deep learning refers to train neural networks.

Simplest neural network: Predicting house price based on size using some kind of regression.



in practice individual neurons in a neural network doesn't analyze a predefined feature - each neuron behaves based on train data. And each neuron takes all input.

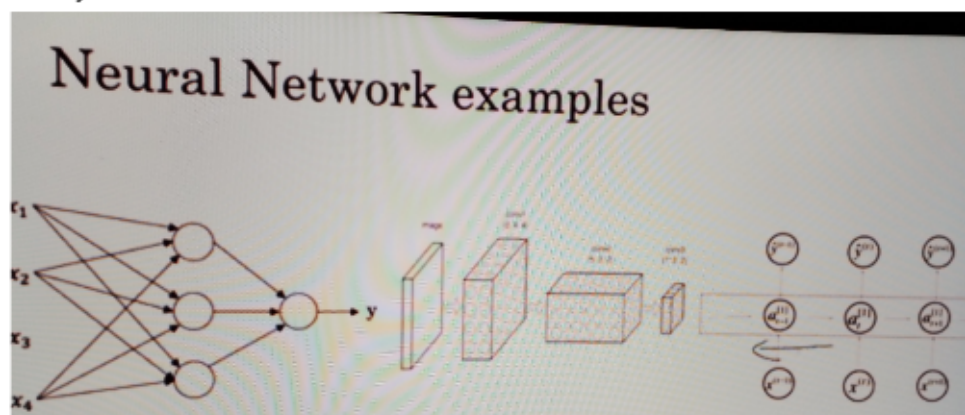
Types of neural network:-

standard neural network (NN) \rightarrow Home feature, Add, user info

convolution neural network (CNN) \rightarrow Photo tagging, speech recognition

Recurrent neural network (RNN) \rightarrow Audio, translation

Clustal hybrid \rightarrow position of car.

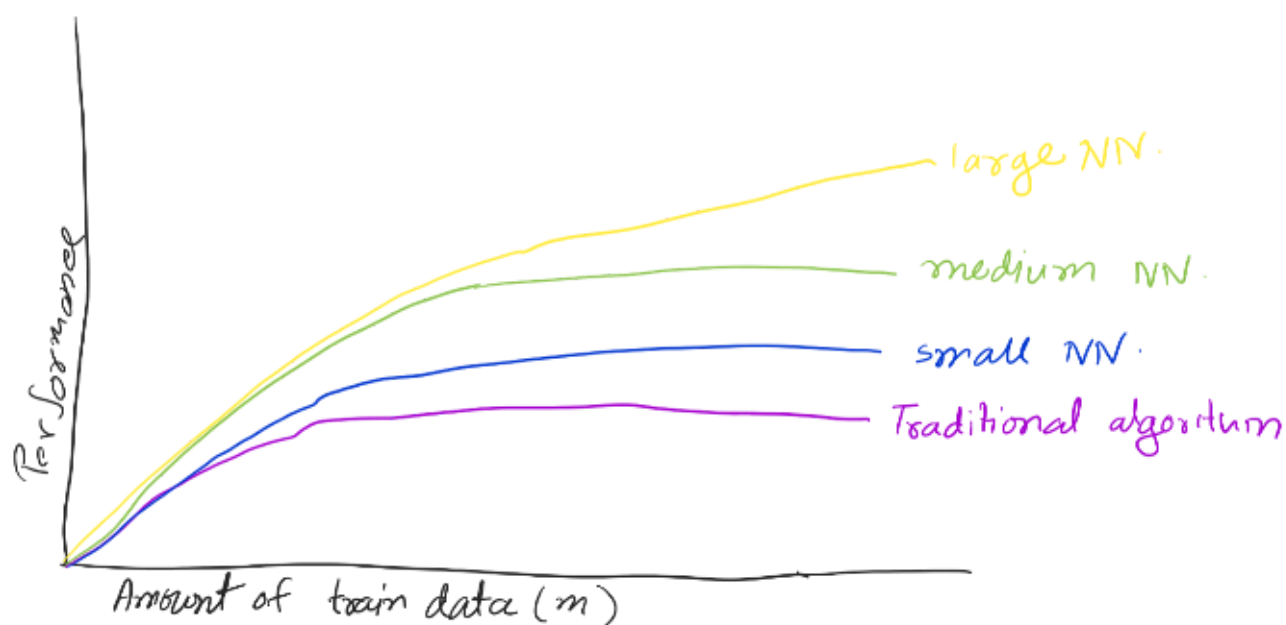


Standard NN

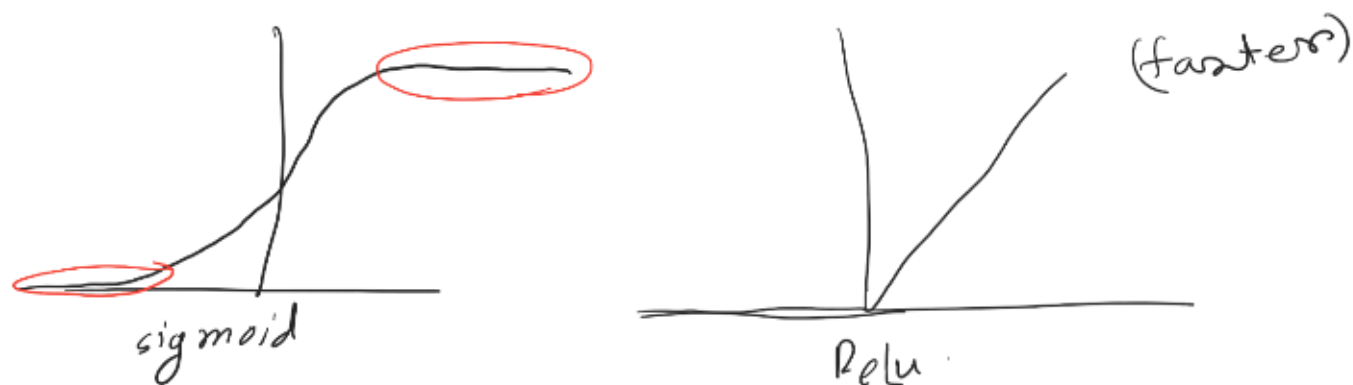
Convolutional NN

Recurrent NN

why neural networks .



Activation function of NN:-



the problem of sigmoid is the gradient descent at the red section is nearly zero so the learning in that region becomes really slow. Because if we use gradient descent & gradient change slowly then learning is also slow.

In ReLU the gradient is one for all positive value

so the gradient is much less likely to shrink to zero