:- Deep Learning Specialization :- Coursera

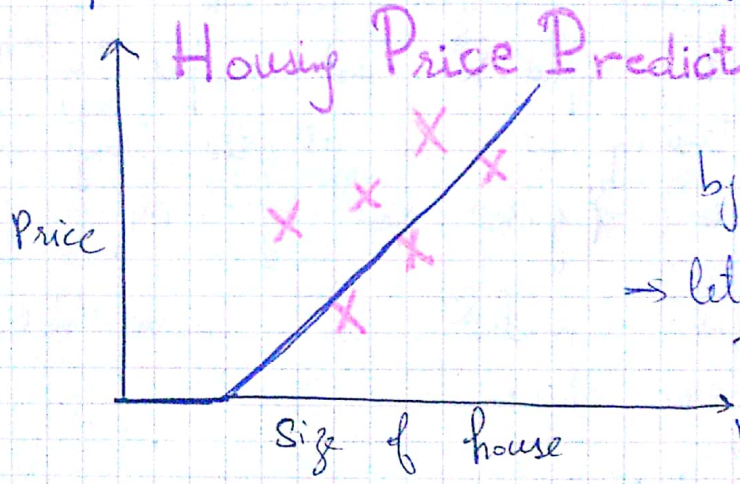
Course #1:- Deep Learning & Neural Networks

Week #1:- What is a Neural Network?

Term Neural Network refers to training a Neural Network Sometimes large networks. So, What exactly is neural network?

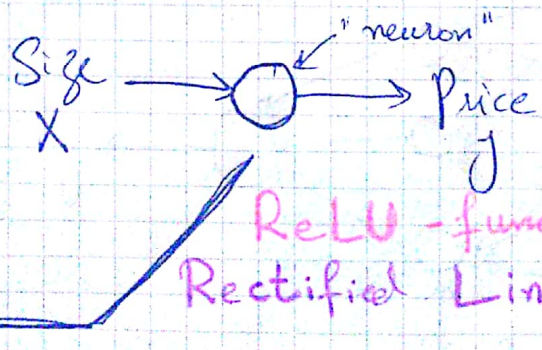
Let's develop some basic intuition, and start with "housing price prediction" example.

→ We have data of six houses and with their sizes and prices and we want to fit a model for that :-



Let's fit a line by linear regression.

→ let's think the function we fit is a simplest possible neural network.



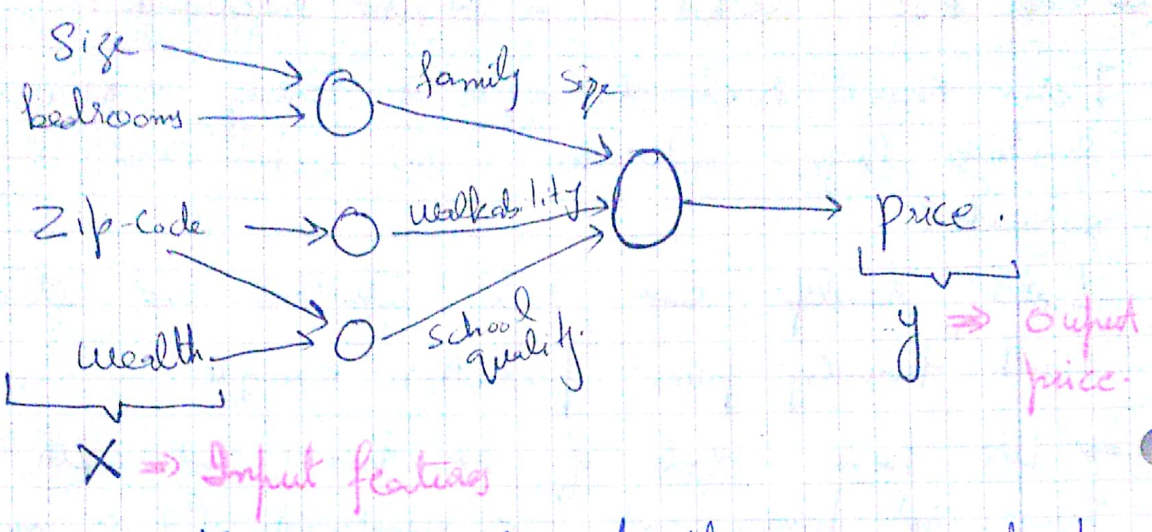
ReLU - function.
Rectified Linear Unit function.

→ Larger neuron are obtained by stacking together these smaller neural networks.

Let's see an example for this.

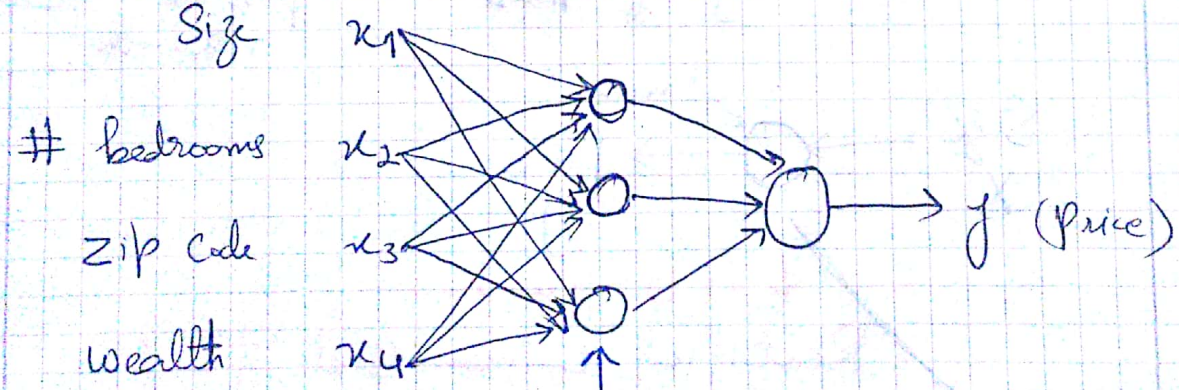
→ Let's say that, instead of predicting the price of a house just from the size, we have other features

e.g. # bedrooms



→ When you implement neural network, you need to give it just the input $\vec{X}$ and output y for number of examples in training set. and all the things in the middle will be figured out by itself.

⇒ For the above model the neural network is gonna be like this :-



* So rather than saying 1st node only represents family size and it depends on size and # of bedrooms we say that, all features are given to that and it decides whatever it want to be.

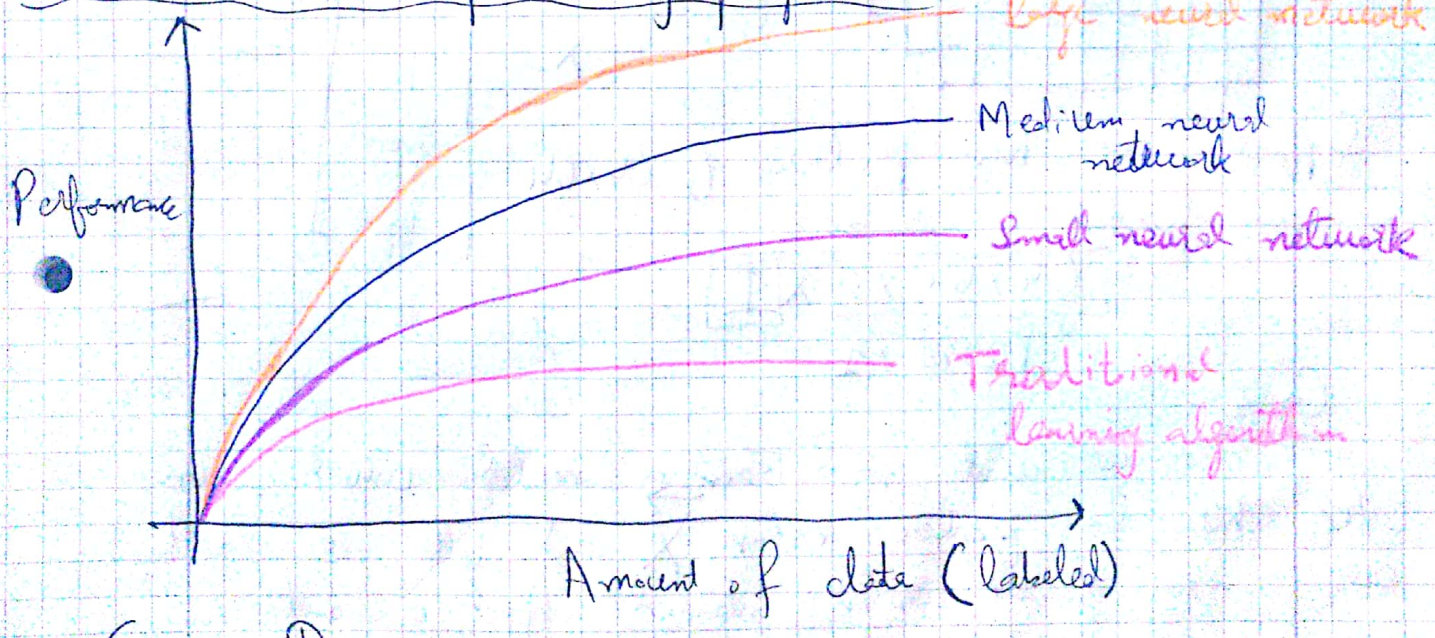
Supervised Learning with Neural Networks:-

- In supervised learning, you have some input (X) and you want to learn some function mapping to some output.

Structured Data:- It is a type of data where you deal with proper databases like database containing information about the houses and prices against them OR data base containing information about the users and the fact whether he/she clicks on some add or not.

Unstructured Data:- It is a data, where you have audio data, Image data, Text data e.t.c.

Scale drives deep learning progress



Course Resources:-