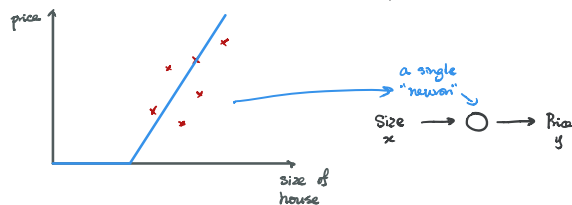


What is a neural network?

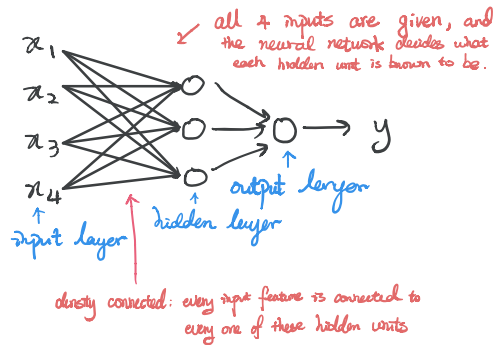
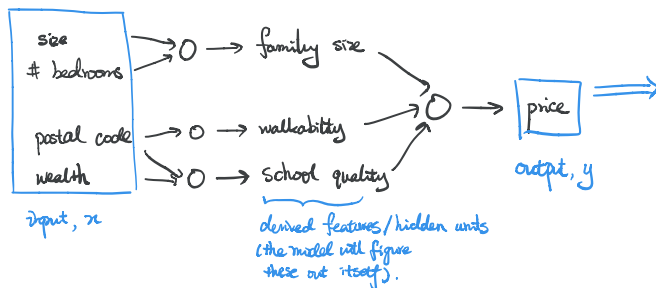
A single "neuron": a ReLU function of input.



* each neuron is an implementation of the function on the left graph (i.e. max of zero and the linear function), which is also call ReLU function.

ReLU: Rectified Linear Unit:

A neural network: a stack of neurons.

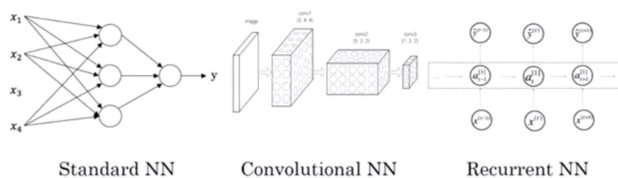


Supervised learning with neural network.

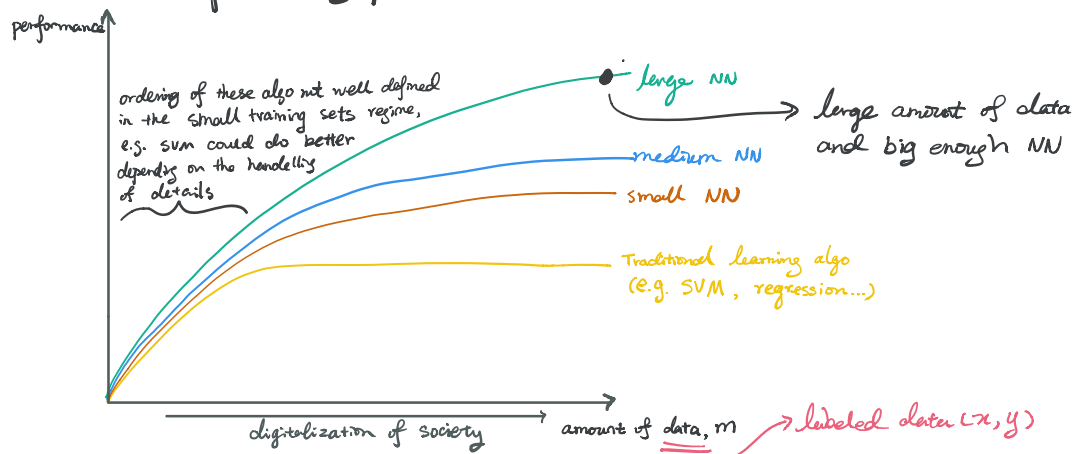
Supervised Learning

Input(x)	Output(y)	Application
Home features	Price	Real Estate
Ad, user info	Click on ad? (0/1)	Online Advertising
Image	Object (1, ..., 1000)	Photo tagging
Audio	Text transcript	Speech recognition
English	Chinese	Machine translation
Imag Radar info	Position other cars	Autonomous driving

Neural Network examples



Scale drives deep learning process



* The development of algorithm also help NN to work much faster, e.g. changing activation function from sigmoid to help gradient descent to work much faster

