

PS43

+ We have talked about how CV.

Came to history.

→ People are working in CV from 1950s

→ ImageNet is largest dataset.

→ ImageNet has existed as a project for almost a decade.

There are more than 40 million

images on ImageNet.

→ Flickr has lots of images as well. You can upload your images on flickr.

→ ImageNet has more than 21K labels of 3 images

What is deep learning? 2) how a basic NN work?

You have a bunch of i/p nodes, hidden nodes & some o/p nodes. All these nodes are connected by edges. Each edge has weight.

Error is diff b/w the gen o/p & the o/p should come is defined by some formula. It works as loss and we update the weights based on loss.

It keeps going till the loss doesn't decrease any more. This is how a NN works.

You can't have a NN without 1 hidden layer if you want to do some non linear operation. All layers are fully connected. It is called fully connected layer.

→ When you have lots of NN and are not fully connected, it is deep NN.

In the earlier time when we do image processing what we do is extract the ~~features~~ features from the image.

→ Soft max layer converts the o/p into a fully connected layer.

→ All these layers are the feature learning layer.

③ What does convolution, ReLU & pooling layer does?

Convolution do work same asanny edge detection. (with only minor diff)

A layer has a window and it does work on data & do convolution.

ReLU layer is a very simple layer.

It is a floor type of func.

$$\text{ReLU}(x) = \begin{cases} x, & x \geq 0 \\ 0, & x < 0 \end{cases}$$

• Pooling layer: Pooling layer is a zoom in of max (Max pool is). In a feature set it takes the max value & discard others.

1) In 2016 the idea of automated cars was very popular. If you are working in CV, in the next 3 years you can make money. No ML can predict future. Even if you have 99.9999%, are you interested with that.

1) Automated car is not a real thing. but cool.

→ Policy: Why do you want automated car? Real reason. you don't want to drive.

→ Most of the people in the world don't have money to afford a car.

→ From a ~~public~~ public policy point of view there should not be any car in the world. Only train or buses should exist.

→ People buy cars due to ego.

→ There are cities in Europe where the cities are banned completely.

→ If you don't want accident then don't buy cars.

→ Cars are dangerous that known plastic many ways.