

18-10-2025

* Computer vision \Rightarrow

MNIST

Image Net

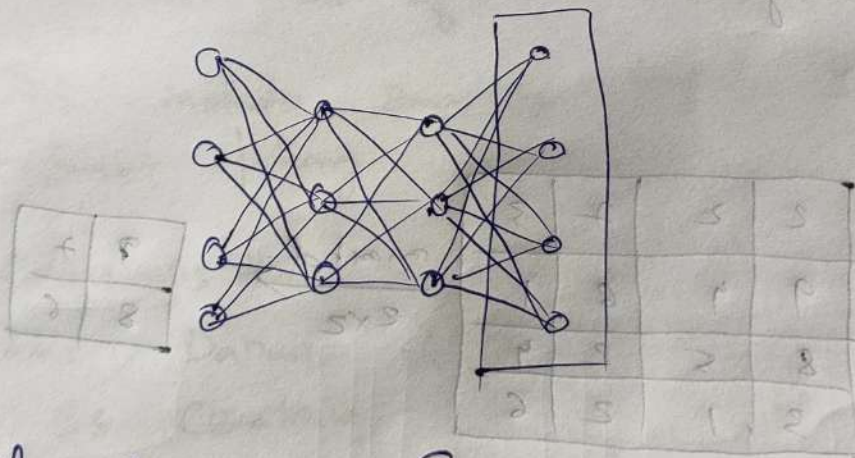
14,197,122 images, 21841 synsets indexed
1000 images to illustrate each synset
Quality controlled and Harman annotated.

Flicker dataset and microsoft coco dataset

Along with image recognition and classification
the text description is also there as option of
image used for MLP.

VQA dataset - Visual Question Answering

* Neural Network \Rightarrow



Fully Connected Layers
Outputs are Signal

Discrete o/p - Software layers in o/p layers.

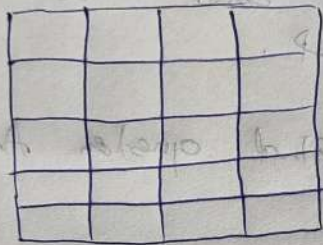
Deep learning \Rightarrow

Input - Conv + ReLU + Pooling \rightarrow Conv + ReLU + Pooling

+ Flatten

Softmax

1 Layer of Conv + ReLU + Pooling is 1 degree of abstraction



Image



filter

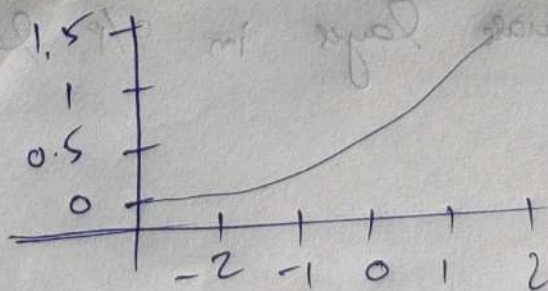
Pooling Layer \Rightarrow

2	2	7	3
9	4	6	1
8	5	2	4
3	1	2	6

max pool
2x2

9	7
8	6

ReLU (Rectified Linear Unit)



Use Cases:

Real time object detection
Image Segmentation.

22-10-25

The global expansion of AI surveillance - is a
white paper.

(white Paper: written by organization for
organization).

AI Surveillance tech.

Tech that uses ML for surveillance

• FRT is L for AI surv. tech

• 3/4th of countries are currently using AI for
surv. as of 2019.

• This includes smartcity, facial recognition systems
Smart policing

- China is the major driver for AI surveillance.
Huawei, Dahua, ZTE - supply AI surv. tech
in 63 countries, 36 of which signed onto
China BRI.

- Next non-chinese supplier of surveillance is
NEC Japan (14 countries).

- Soft Loans to enc. govt to purchase this eq.

- Surveillance tech supplied by US firms is
present in 31 countries ZBN, Paladix, CesCo.