Computer vision for Developers

1. Introduction to computer vision
2. Image processing ⟶ OpenCV, Dlib, OD
3. convolution Neural Network and Different CNN Architectures with practical Hands on.
4. Transfer Learning and pretrained SOTA model
5. Object classification
6. Object Detection
7. Image Segmentation
8. Key point Detection / pose Estimation
9. Facial Recognition
10. OCR — Optical character Recognizer
11. Yolo, Detectron, Tensorflow, pytorch so on...
12. Real world cv project
13. Deployment
14. Latest Trends like Vision Transformers, Multimodel and much more - - - -
15. object Tracking
16. GANs
17. Self Driving car

(18) Defusion models.

pre-Requisite:

1. python programming
2. DL — NN

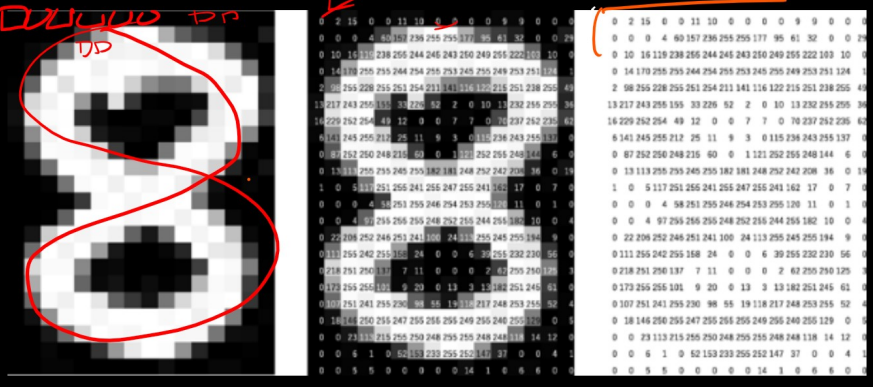
computer vision :- DL

DL → ~~(1)~~ ANN → ANN — foundation — Tabular
- Artificial Neural Network

Image/Video → (2) CNN — Convolution Neural Network

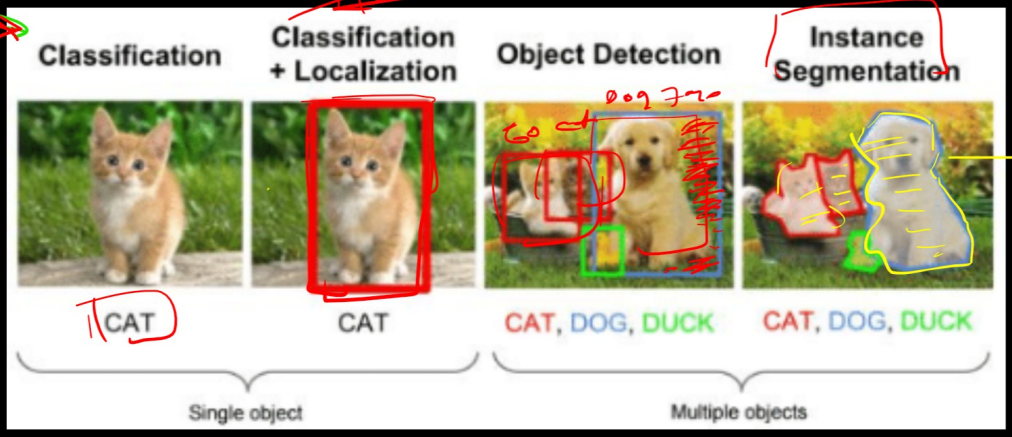
Text Data → (3) RNN → Recurrent Neural Network
NLP

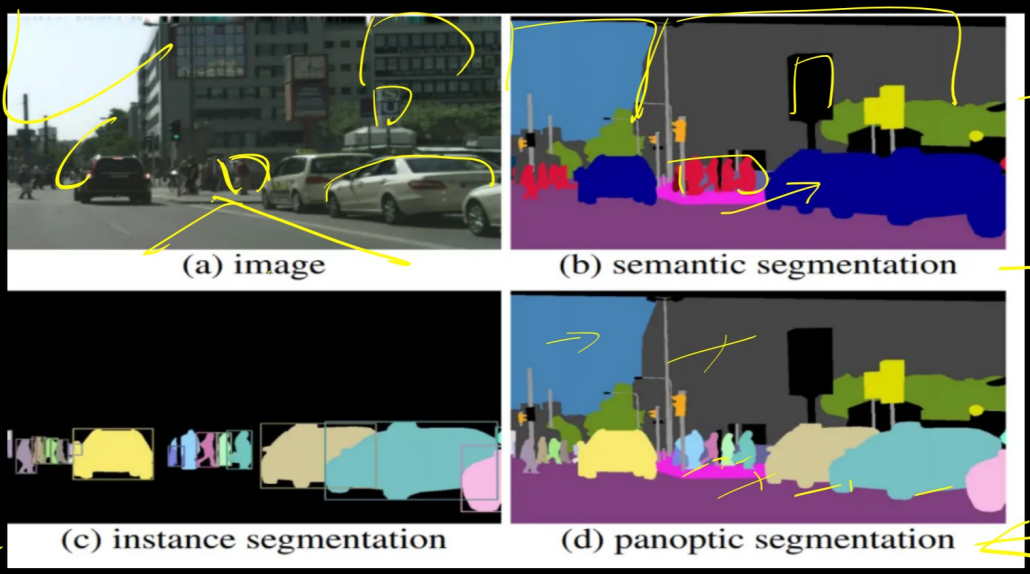
0-255



1 — 1

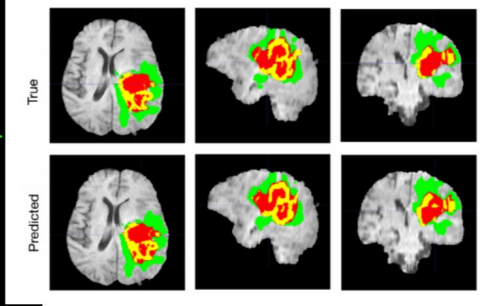
0 - 255





CV Apps

1. Self driving car
2. Facial Recognition
3. Detection System
4. AR



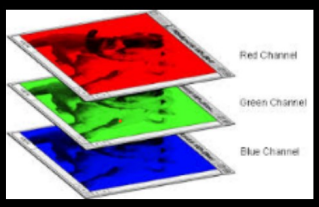
Challenges:

1. Data Acquisition / Quality Data
2. Hardware ⟶ A100 GPU, V100 GPU
3. proper knowledge of the domain

Image Types:

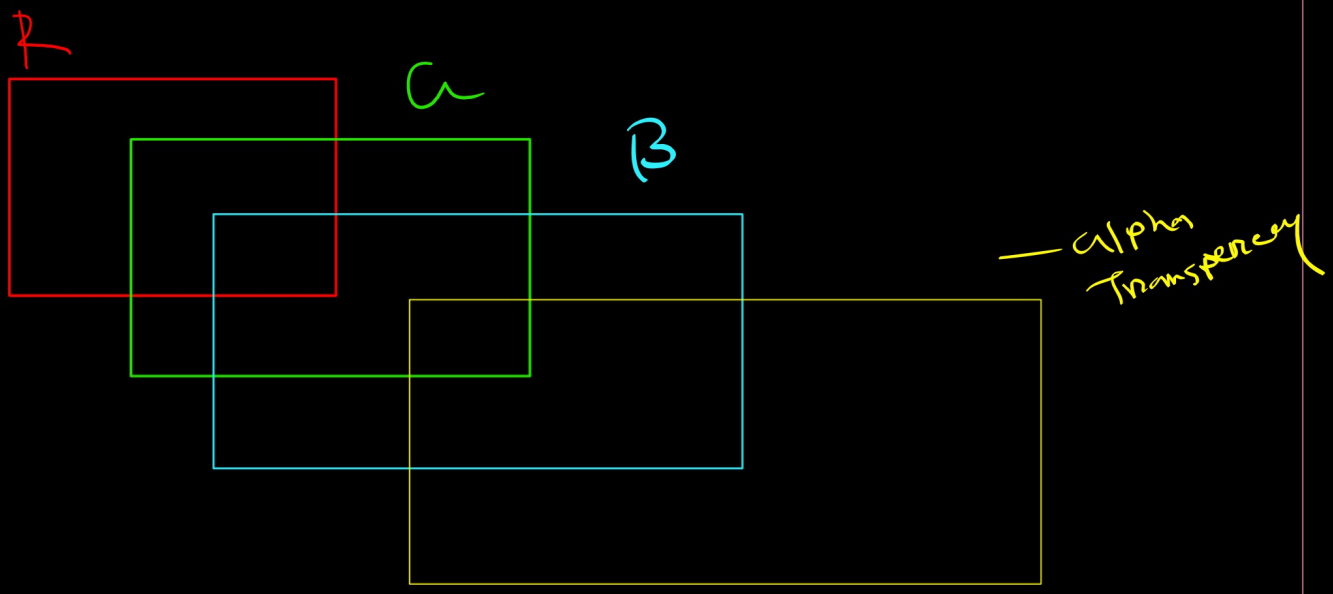
1. Black-white — Gray Scale Image

2. color image- 3 channel — RGB



3. png → 4 channel

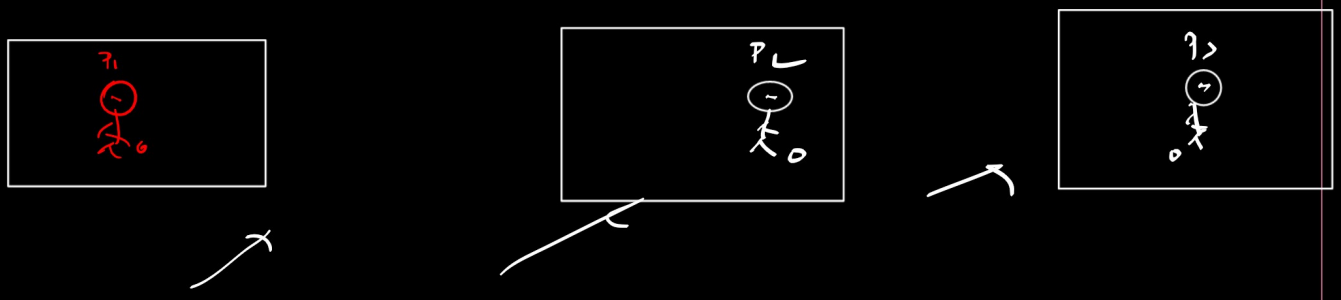
RGB alpha



Video Data:

Image Frame

30fps



Video → Image frame

30fps ∈

60fps ∈