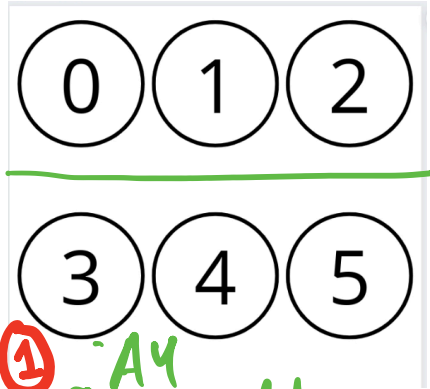
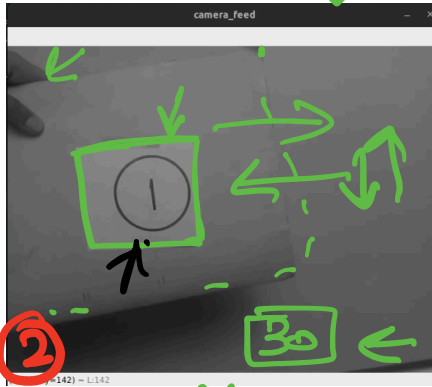


DATA STRATEGY

Canva/Word.



① AY generation.



② recording.



③ Hough trans. extract.

Video

30fps

: [] [] [] [] [] 30 1sec

30 sec.

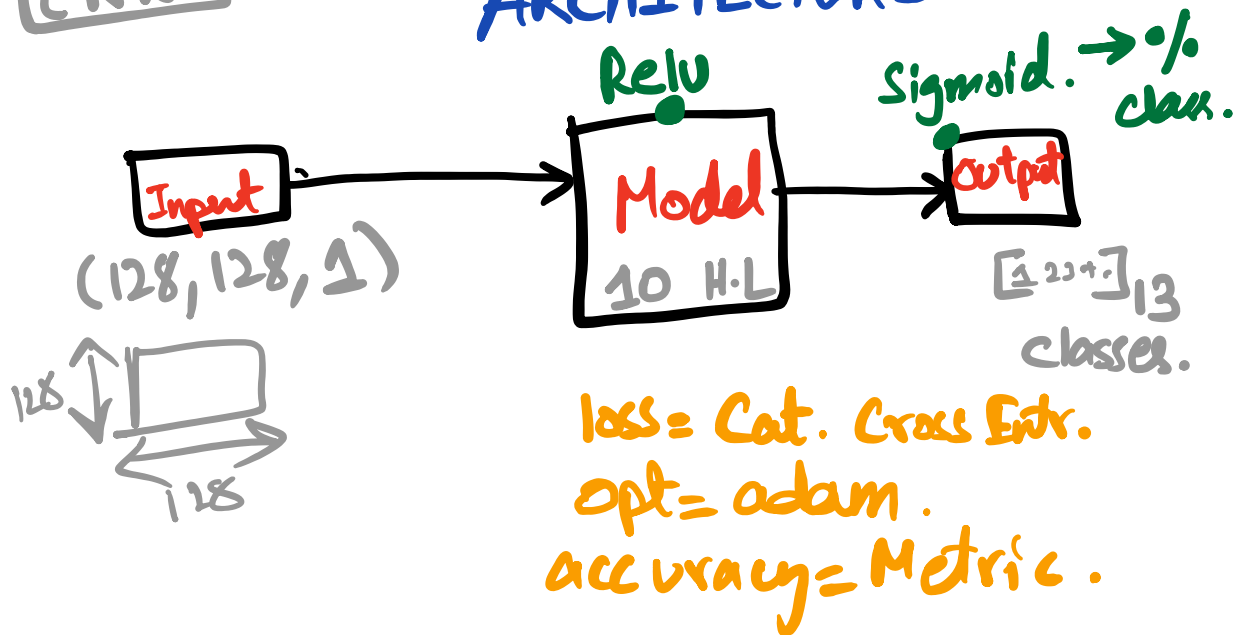
x30

1 sec

900 images.

CNN

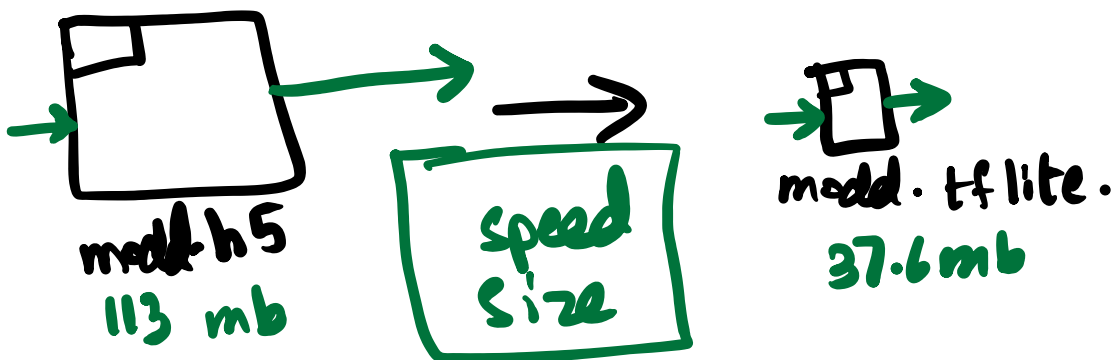
VISUAL CALCULATOR ARCHITECTURE



QUANTIZATION.



AI



tf → 9 millions.
float 32 (32 bit).

tf lite → 9 millions.
Int (8 bit)

9M x 32 bit

9M x 8 bit

Pros

- Size
- Speed

Cons

- Accuracy
- Error.

⇒ Post Quantization.

Trained



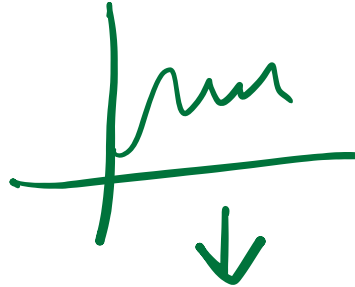
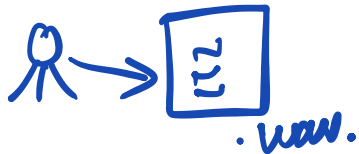
model.h5



tf lite.

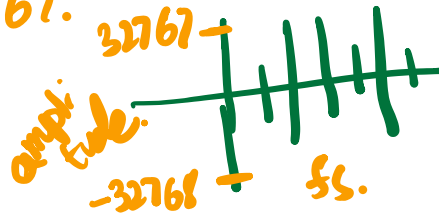
AUDIO DATA.

- wave file

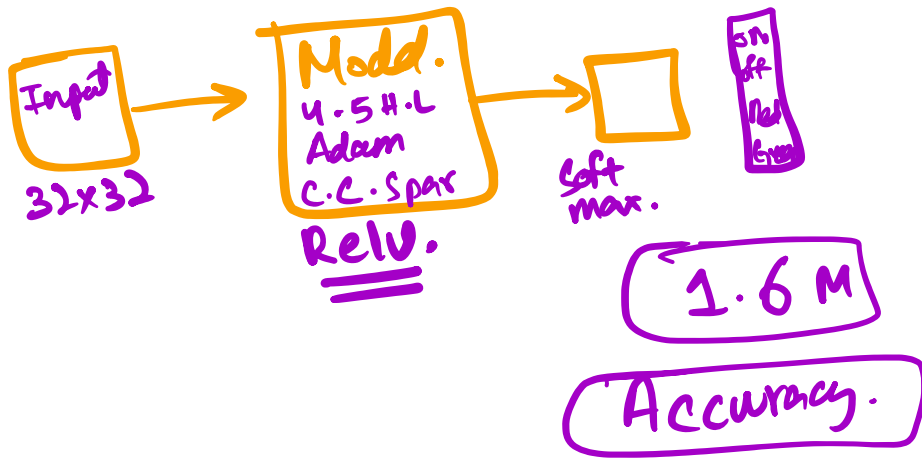


- ① $f_s = 22050$
- ② $A.R = 32768$

→ 32767.

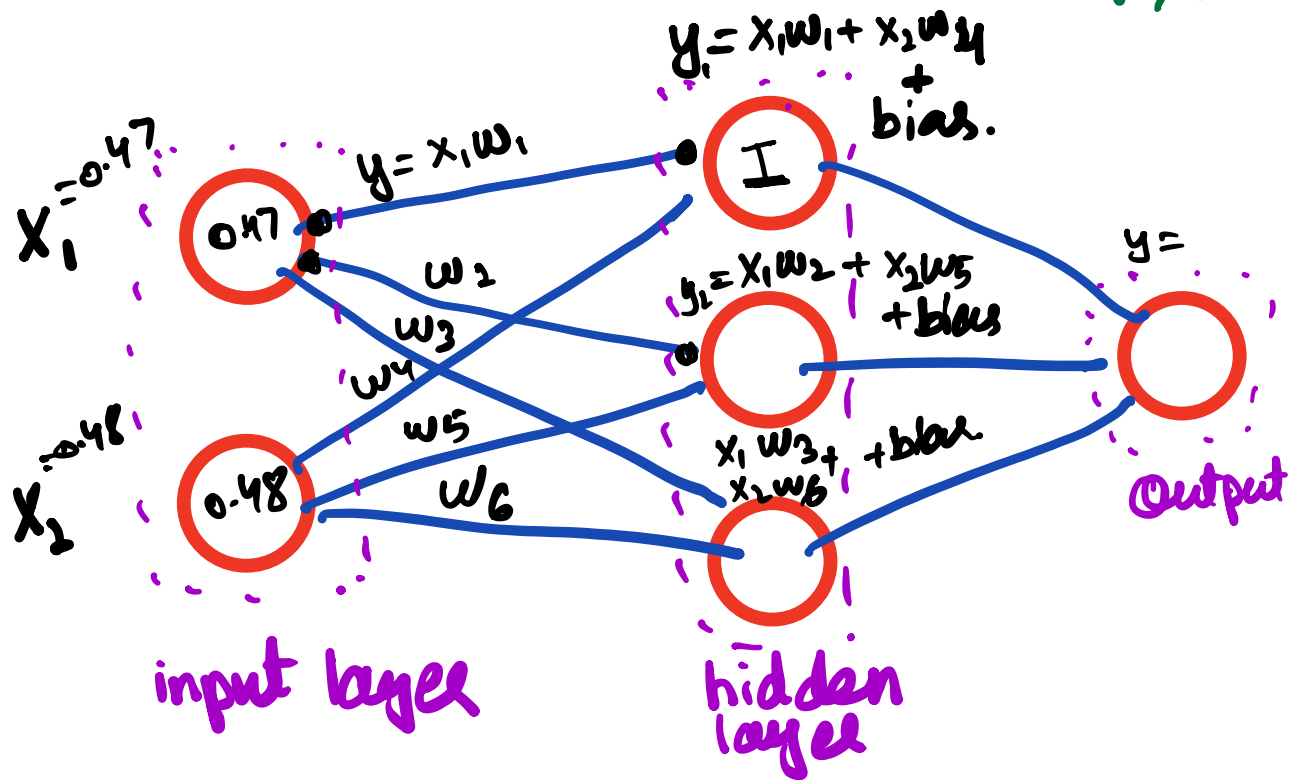


VOICE CONTROLLED LEDS.



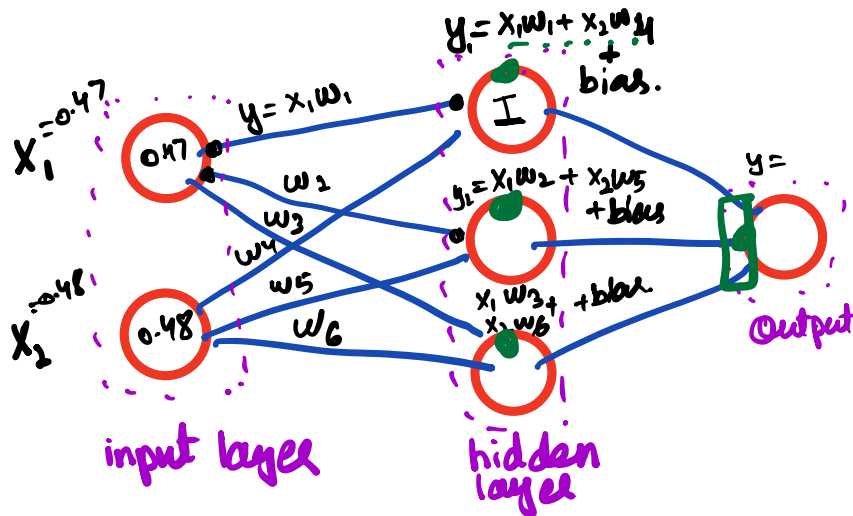
Neural Networks

① Weights ② Bias ③ Activations ④ Propagation F/B.



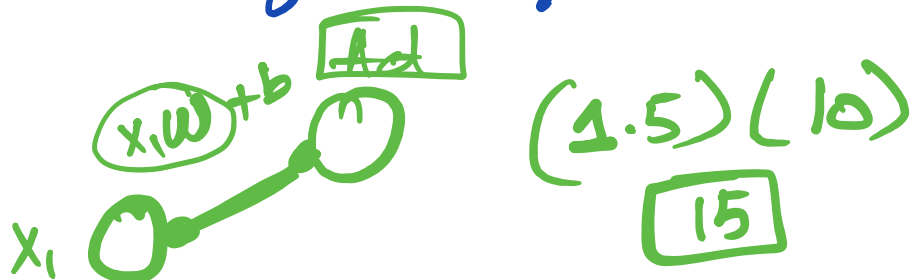
ACTIVATION FUNCTIONS

Linear \rightarrow Non linear.



out.neuron = activation-function(
dot.prod(w, x) +
bias.)

Weights / Bias.



SIGN FUNCTION APPROXIMATION.

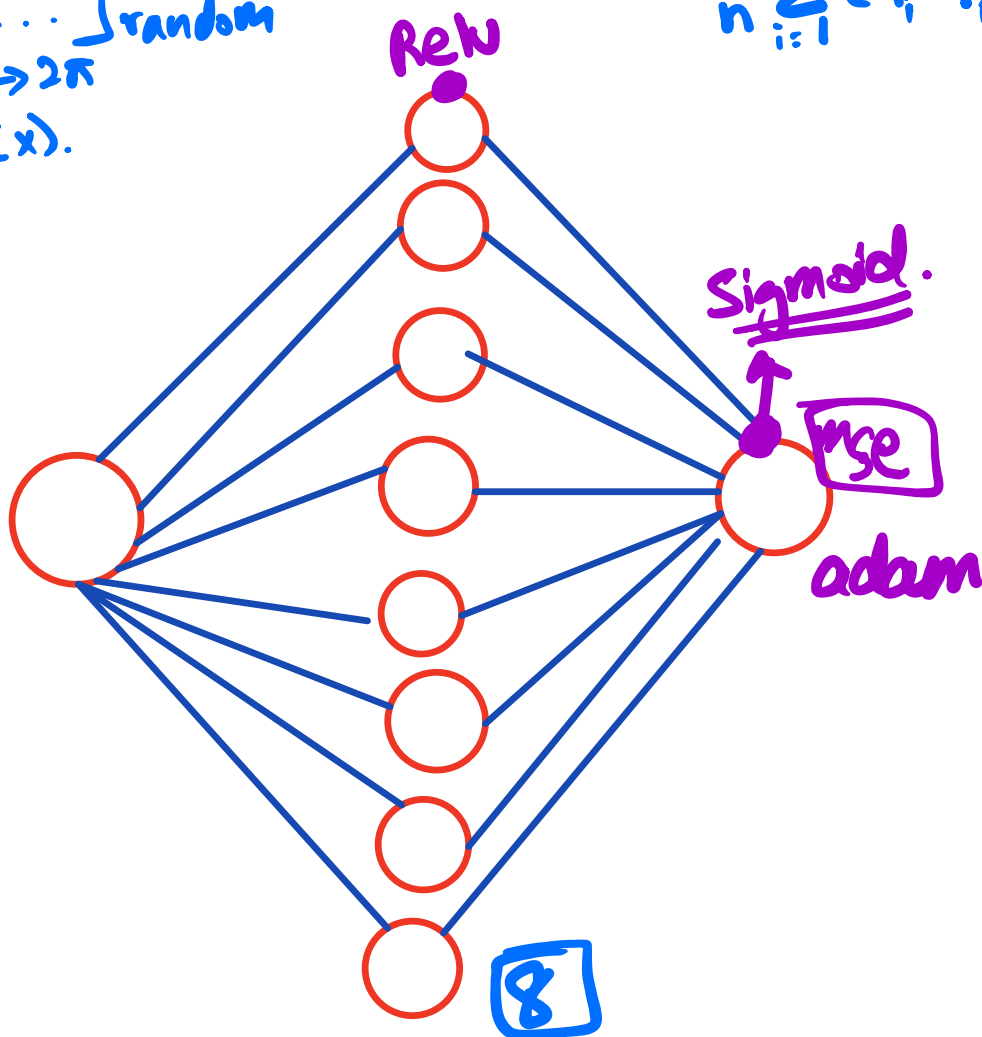
① Dataset ② Architecture ③ Loss/adam.

$X = [\dots]_{\text{random}}$

$0 \rightarrow 2\pi$

$y = \sin(x).$

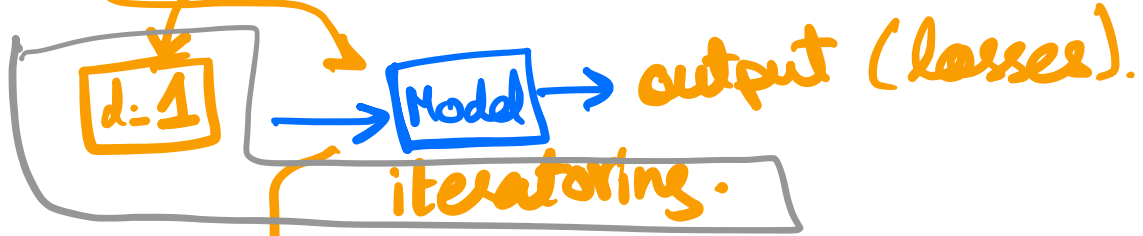
$$\frac{1}{n} \sum_{i=1}^n (Y_i - \hat{Y}_i)^2$$



TRAINING JARGONS

- Epochs - iterations - Batch size - losses.

data = [□ □ □ □ □]



[d=5] Epoch

data = 50 image.

batch = 10 image.

$x_{b_1} [□ □ □ □ \dots]_{10}$ $x_{b_2} \dots x_{b_5}$

