

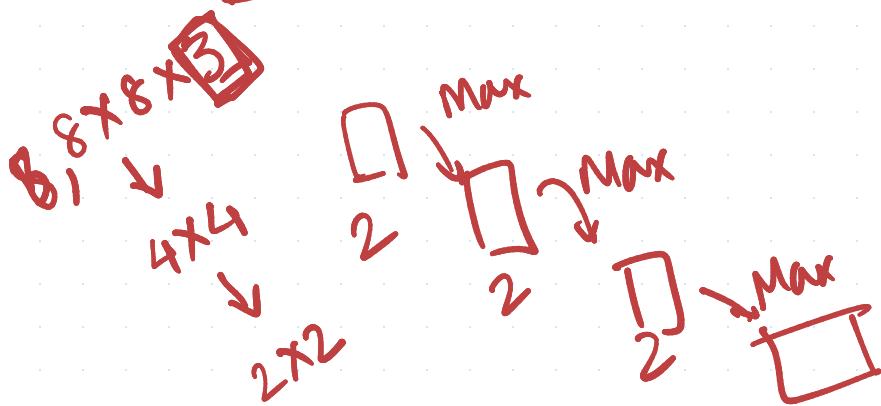
$$v = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix} \quad v^T.$$

$$v^T v = (1 \ 2 \ 3) \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$$

$$= 1 + 4 + 9 = 14$$

~~3×3~~ $\Rightarrow 3 \times 3$

Input = $(B, \frac{H}{\text{maxpool}}, \frac{W}{\text{maxpool}}, C)$.



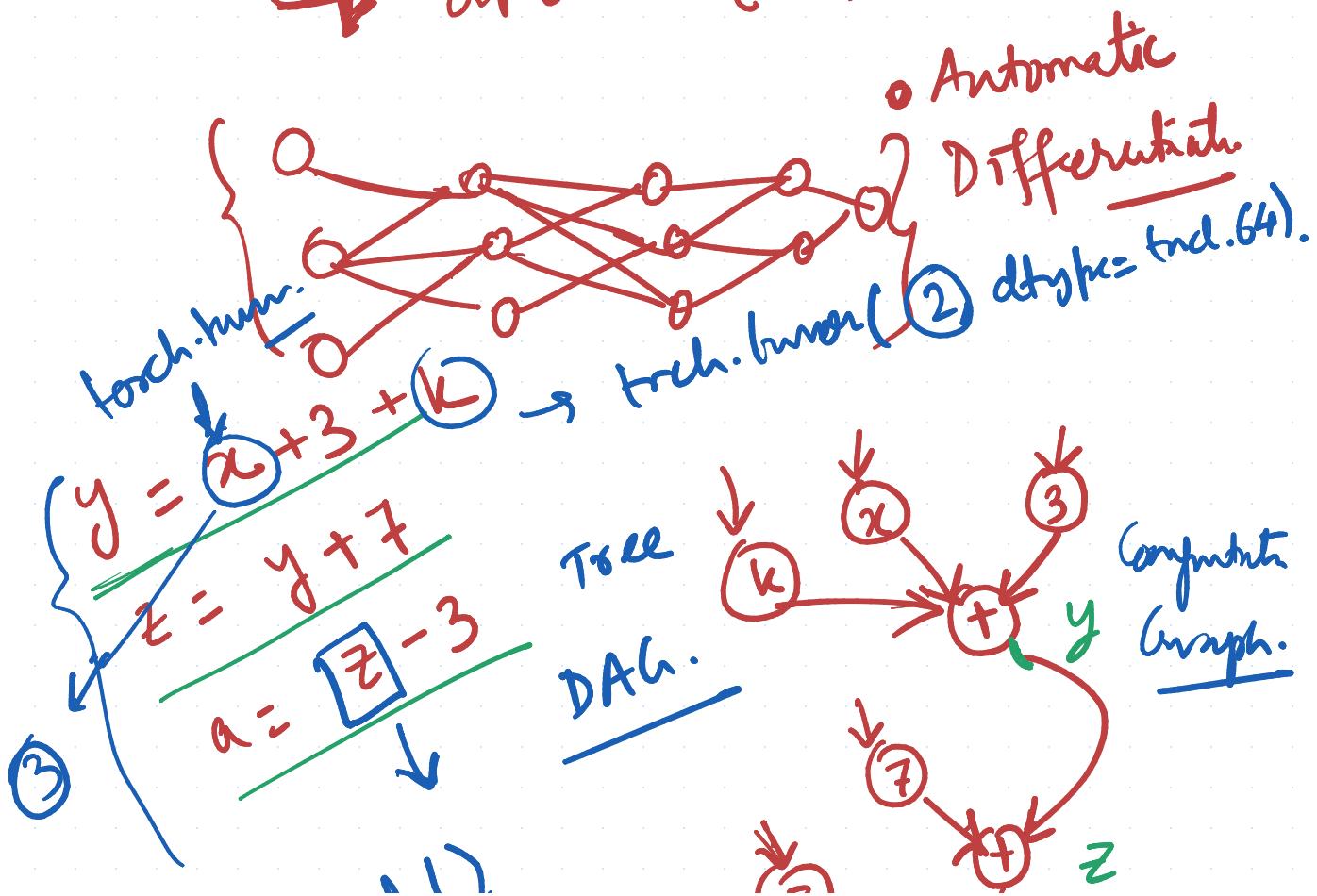
$\rightarrow 0 - 255$
 $\rightarrow \text{ayscale}$
 $\Delta [\dots ; \dots ; \dots]$

Open \rightarrow BGR.
 Matplotlib \rightarrow RGB.

<u>Regression</u>	<u>Houses</u>	<u>$y_1 (\\$)$</u>	<u>$y_2 (\text{Million})$</u>
x_1	x_2	$y_1 (\$)$	
# bedrooms	# bath	50,000	1)
(2)	(1)	80,000	1)
(3)	2	(90,000)	1)
4	1	(30,000)	0)
1	0		

tensor → gradient computation

↳ GPU → (=) ↓



2.grad

$\frac{\partial a}{\partial z}$, early

$a \Rightarrow \underline{\text{loss.}}$
 $\downarrow \text{value.}$

(single val tensor)

$y = x + 3 + k$
 $z = y + 7$
 $a = z - 3.$

$\frac{\partial a}{\partial k} = \frac{\partial a}{\partial z} \cdot \frac{\partial z}{\partial y} \cdot \frac{\partial y}{\partial k}$

$1 \cdot 1 \cdot 1$

①

$k = \underline{\text{torch. tensor}}(3.)$

$k = \text{torch. tensor}([1^2, 3])$

$\frac{\partial a}{\partial k} = \frac{\partial a}{\partial z_i} \frac{\partial z_i}{\partial y_j} \frac{\partial y_j}{\partial k_i} \quad i=0,1,2.$

0 1 3.

Conferences :- (Venues)

Ivy → league
~~(2-3) Mast's level.
(MIT. → PhD)~~

A* → Top level.

- NeurIPS. → Neural N/w with theory
(IIT-B→4) (Hard core) IF=23
- ICLR → 48-87 (Hard core).
Intro. Conf. Learning Rep.

• (CVPR) → 63 → Impact factor.

• ICML → 20.27. → IF.

• ECCV → 33 \rightarrow^{8-} IF (unoff.).

• ICCV → 8.34 → IF

• JMLR → 5.17 → Journal of MLR.

• WACV → 9

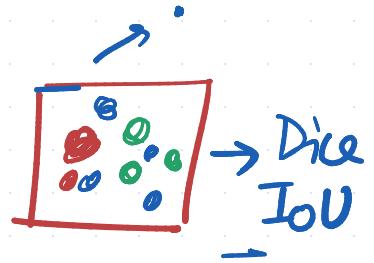
Research Sci → Handbook.

IIT →

- Vin. B. TITH
- C.V. Jawahar

A

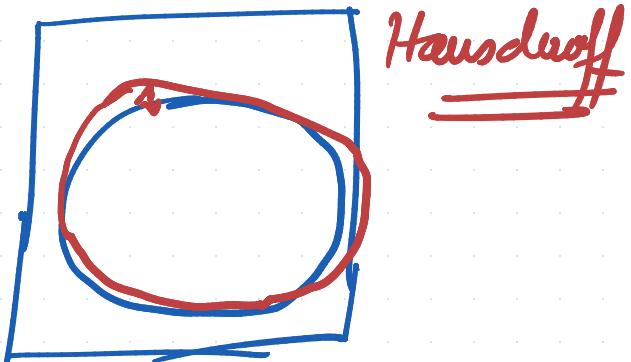
MICCAI → (Medical)



•

B

ICIP →
ISBI →

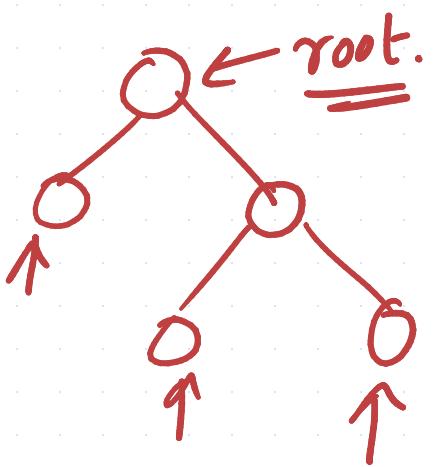


ICASP

$$y = 3x^2 + 15.$$

$$\frac{\partial y}{\partial x} = 6x.$$

$$\frac{\partial y}{\partial x} \Big|_{x=3} = 6x \\ = 6 \times 3 \\ = 18$$



Binary tree. } Algorithms =