

TaeEun KIL

CNN



Index.

01. Background

02. Structure

03. Learning

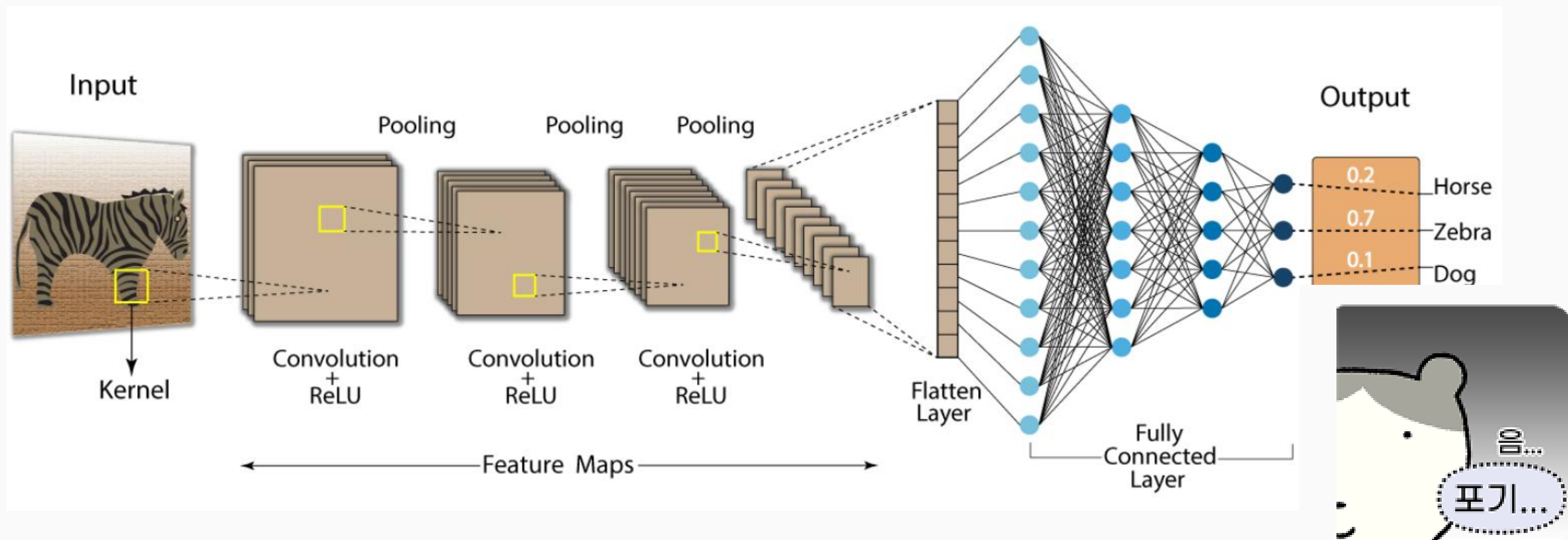
04. Close



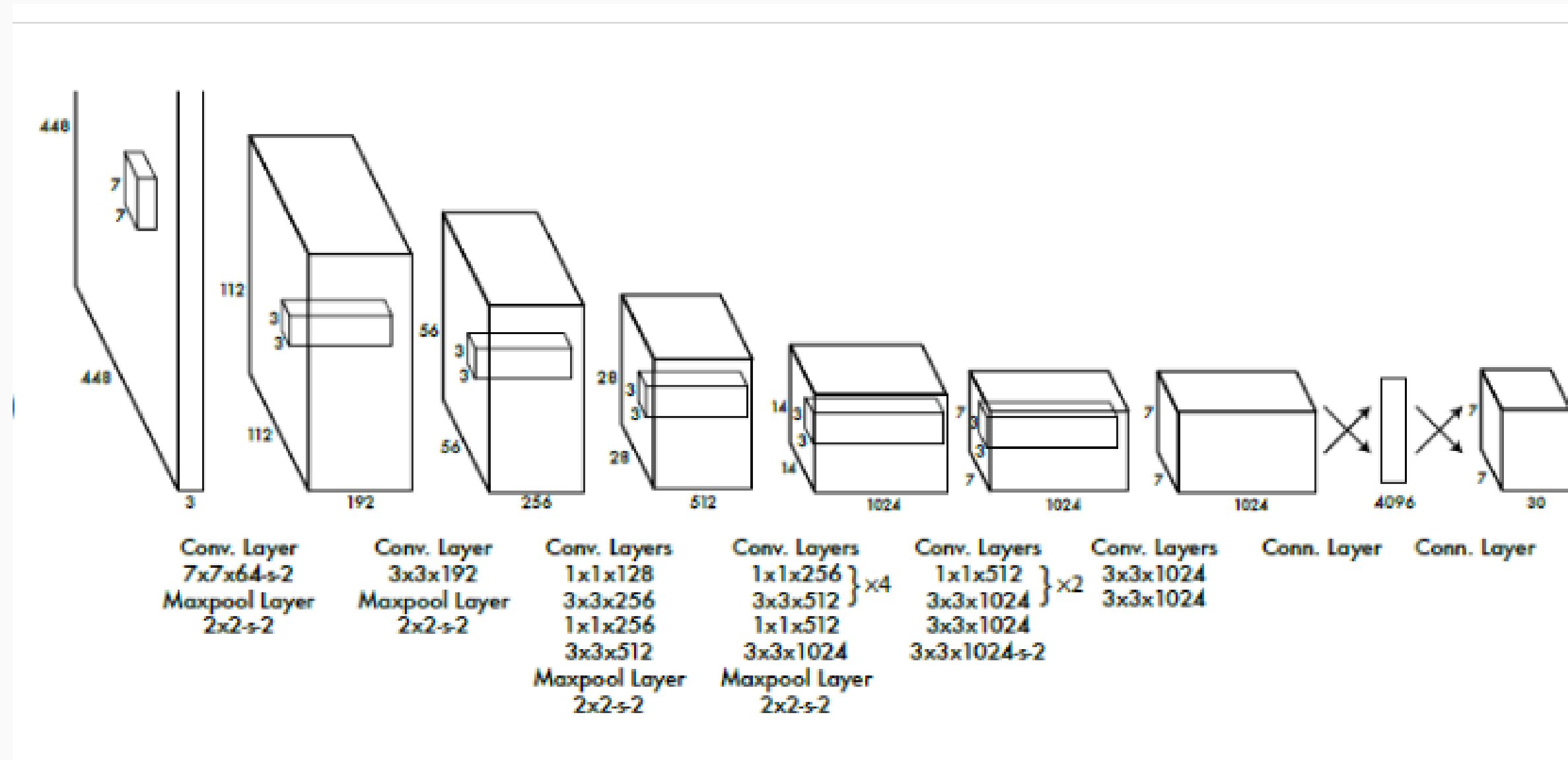
CNN



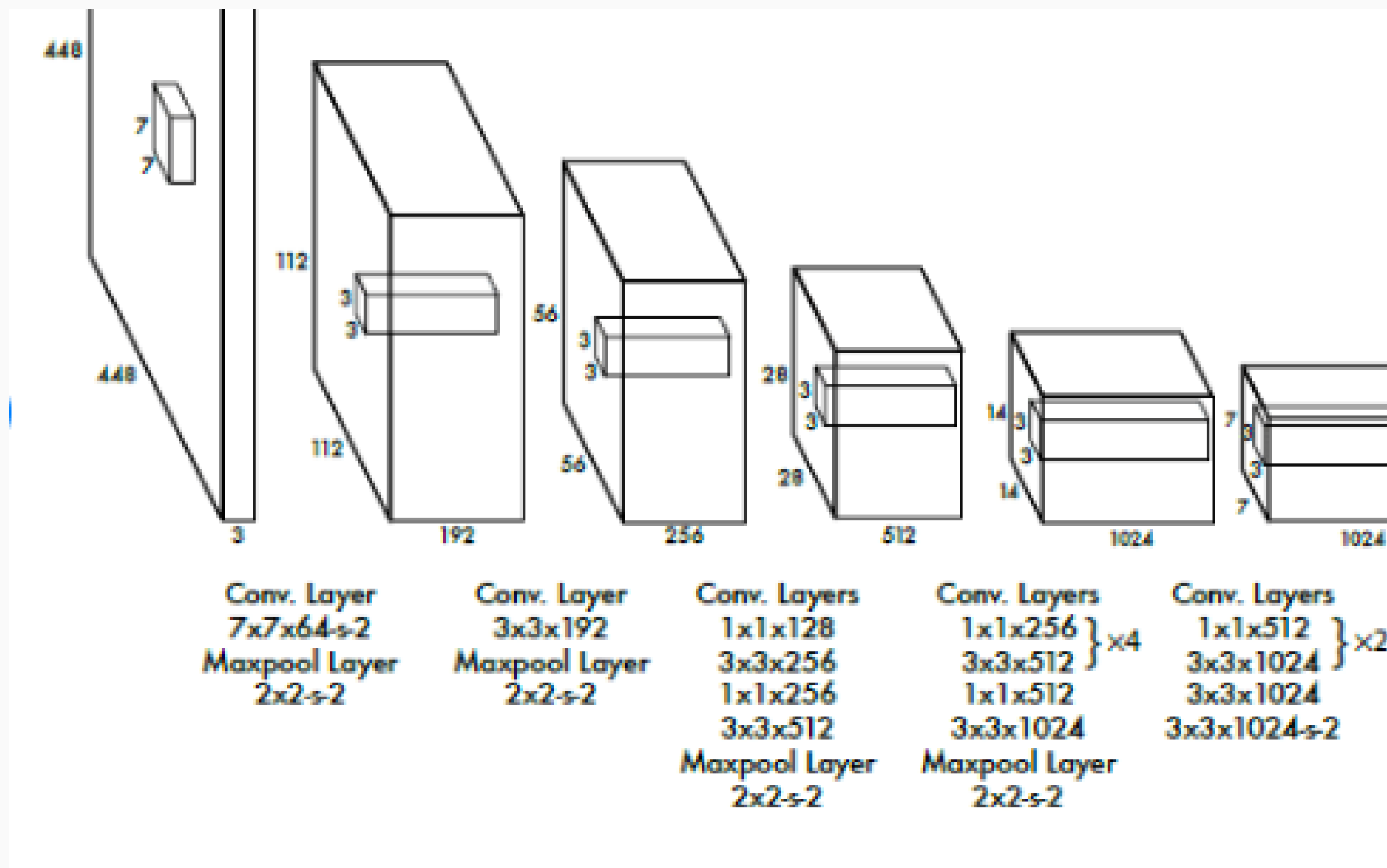
Convolutional Neural Network



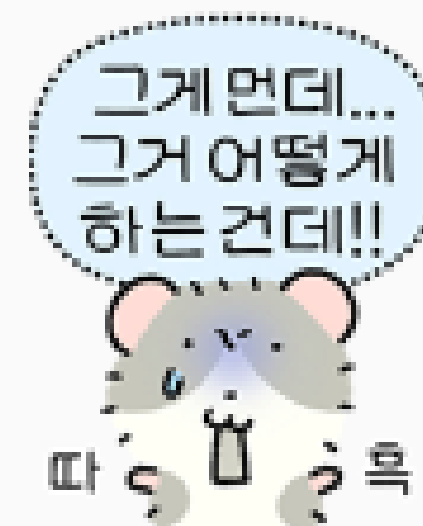
YOLO



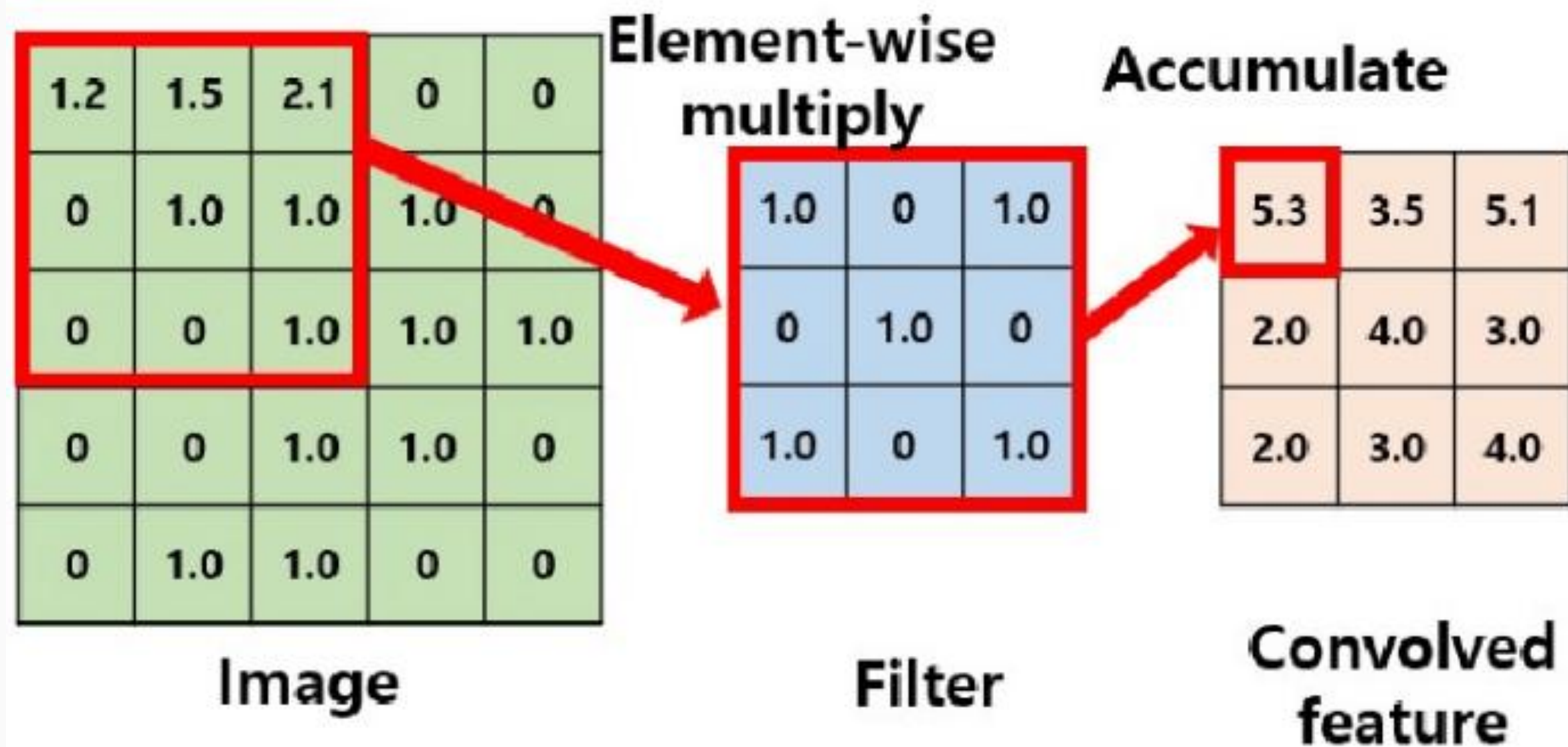
YOLO



Convolution



Convolution



Convolution

1 _{x1}	1 _{x0}	1 _{x1}	0	0
0 _{x0}	1 _{x1}	1 _{x0}	1	0
0 _{x1}	0 _{x0}	1 _{x1}	1	1
0	0	1	1	0
0	1	1	0	0

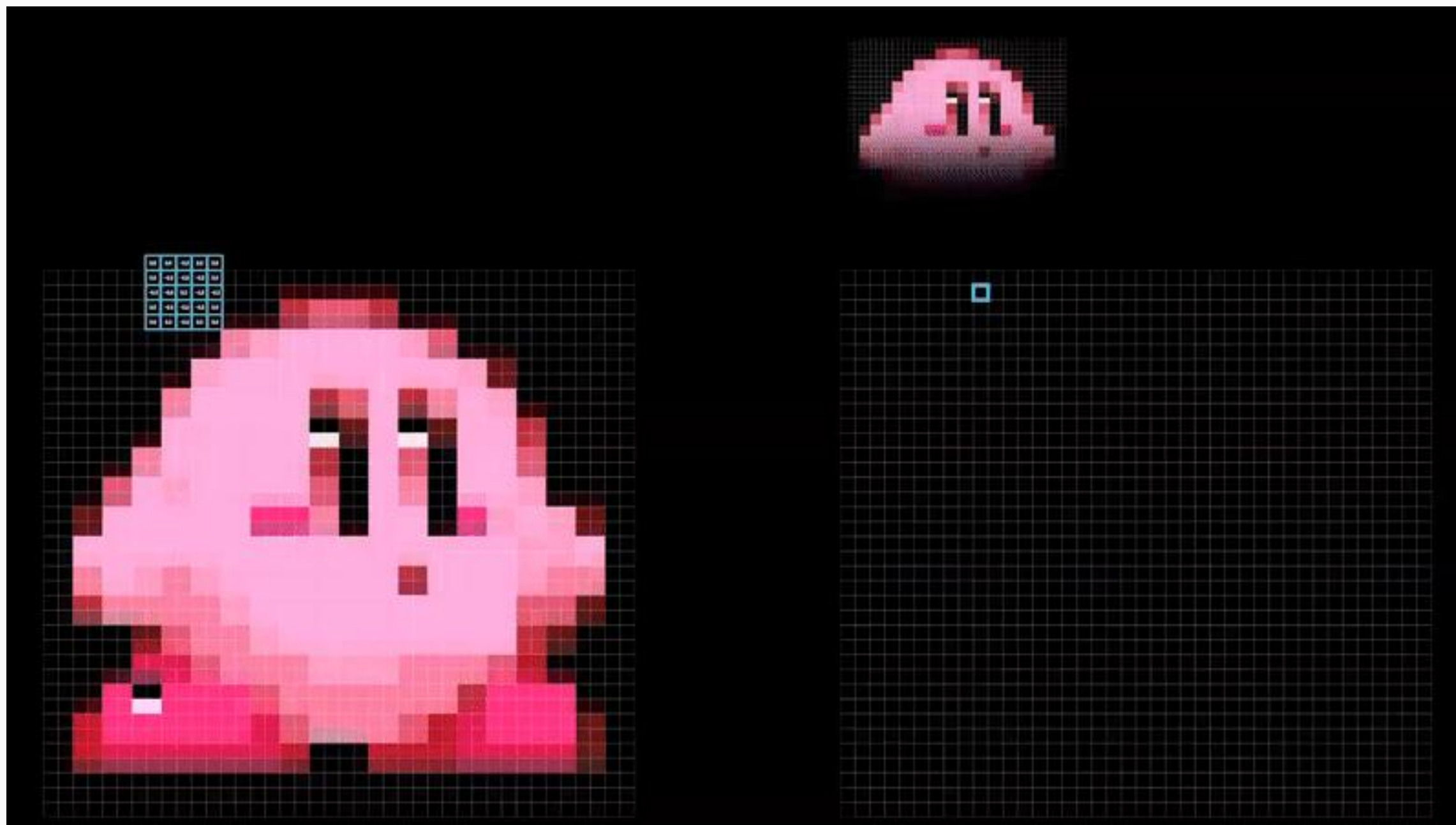
Image

4		

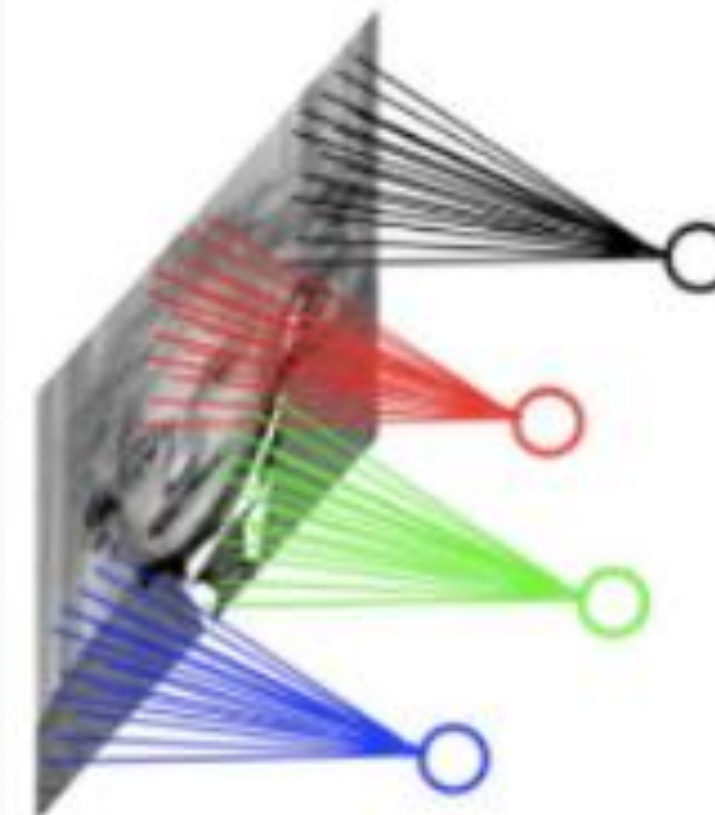
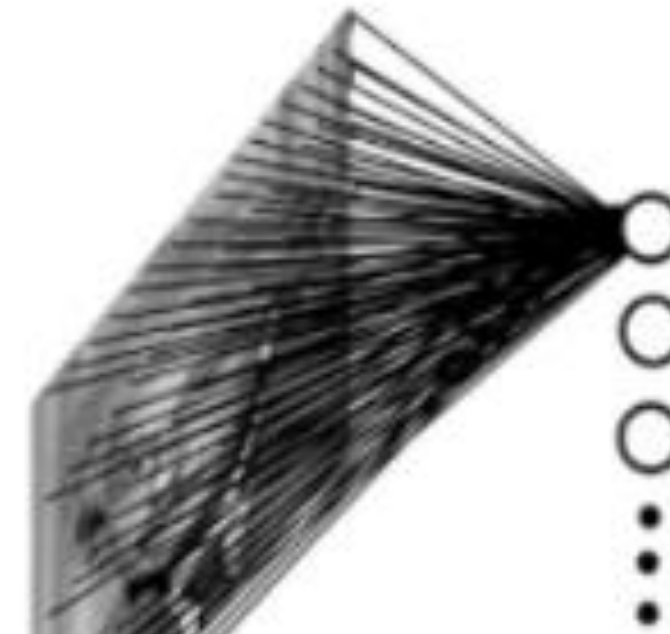
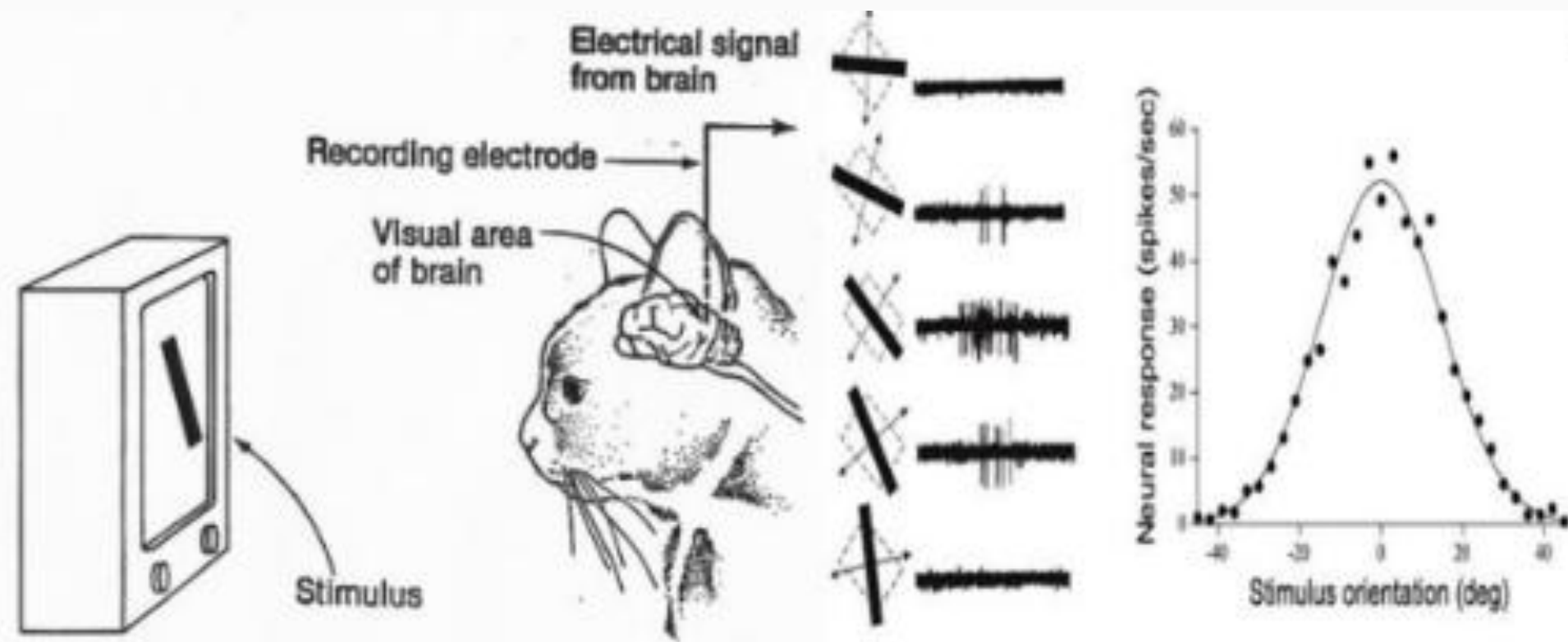
Convolved
Feature



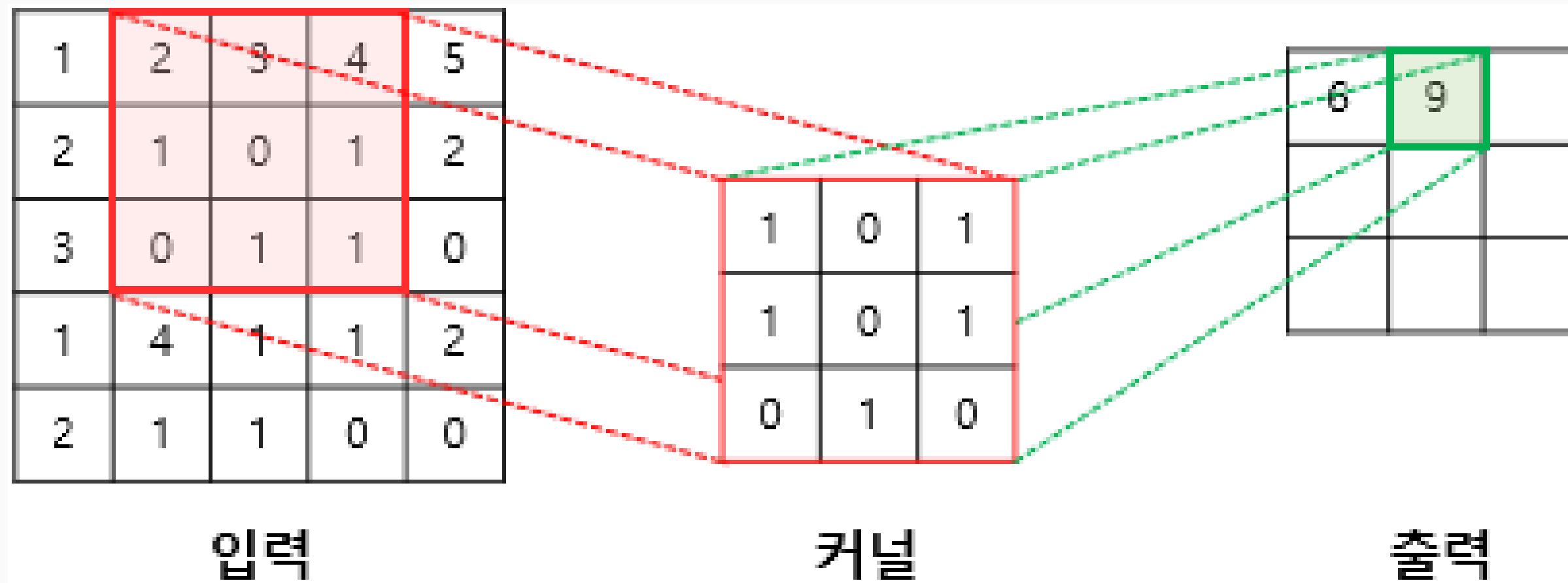
Convolution



Why



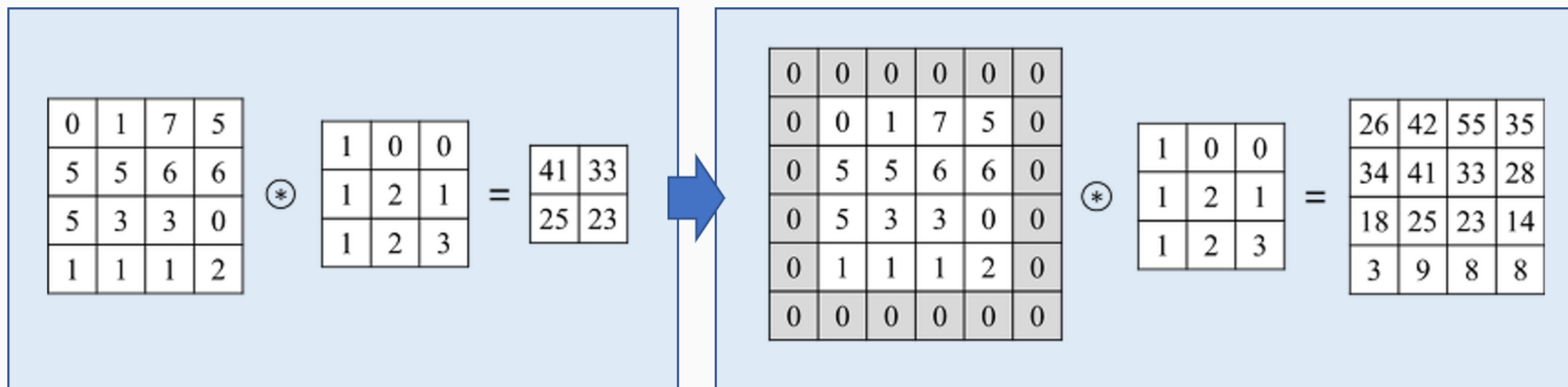
Output?



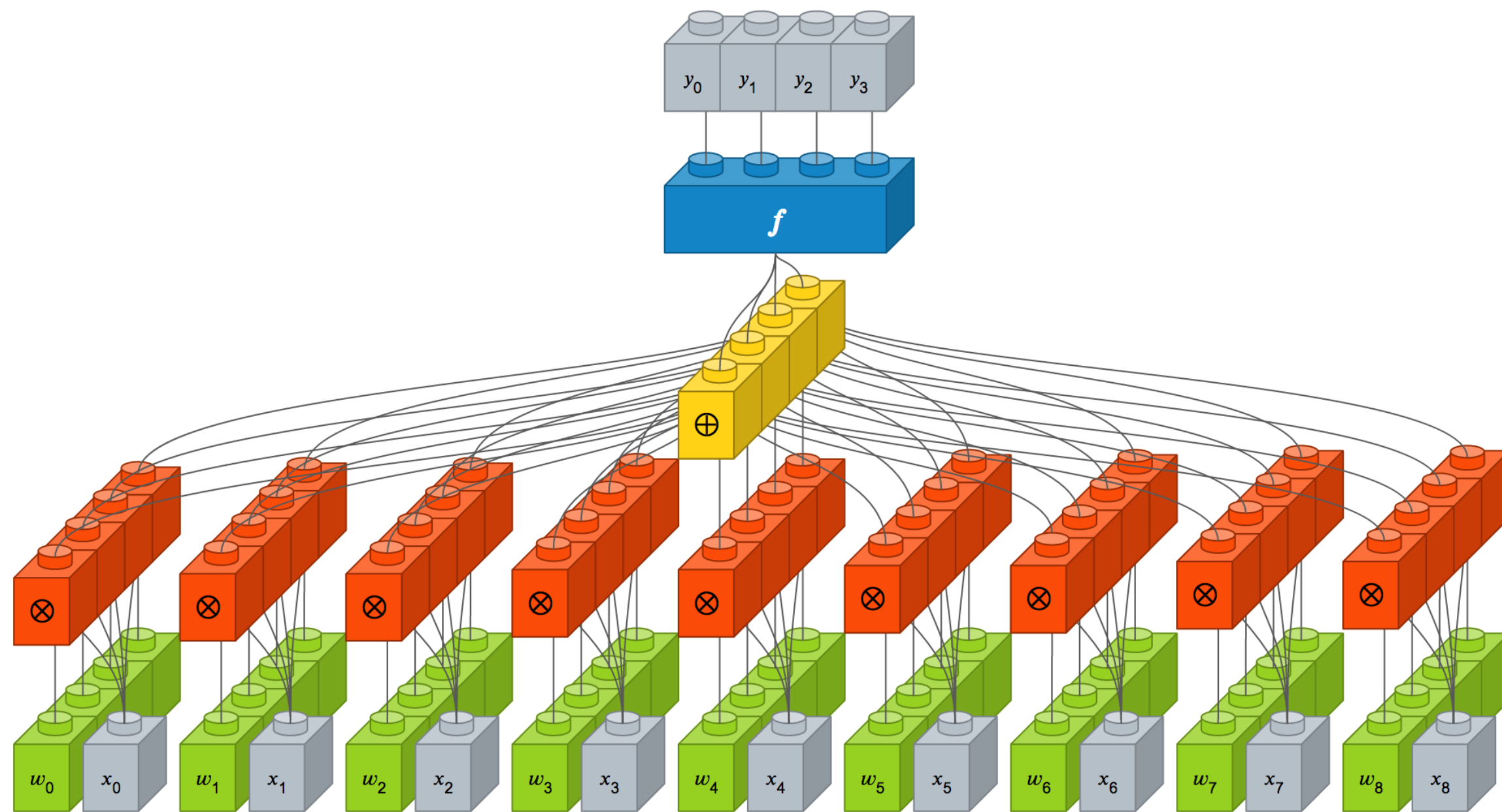
Padding



Padding



Size?



Pooling



Pooling

Max Pooling

Take the **highest** value from the area covered by the kernel

Example: Kernel of size 2 x 2; stride=(2,2)

3	2	0	0
0	7	1	3
5	2	3	0
0	9	2	3

Convolved
Feature
(4 x 4)

Output

Max
values

7	

Average Pooling

Calculate the **average** value from the area covered by the kernel

3	2	0	0
0	7	1	3
5	2	3	0
0	9	2	3

Convolved
Feature
(4 x 4)

Output

Average
values

3	

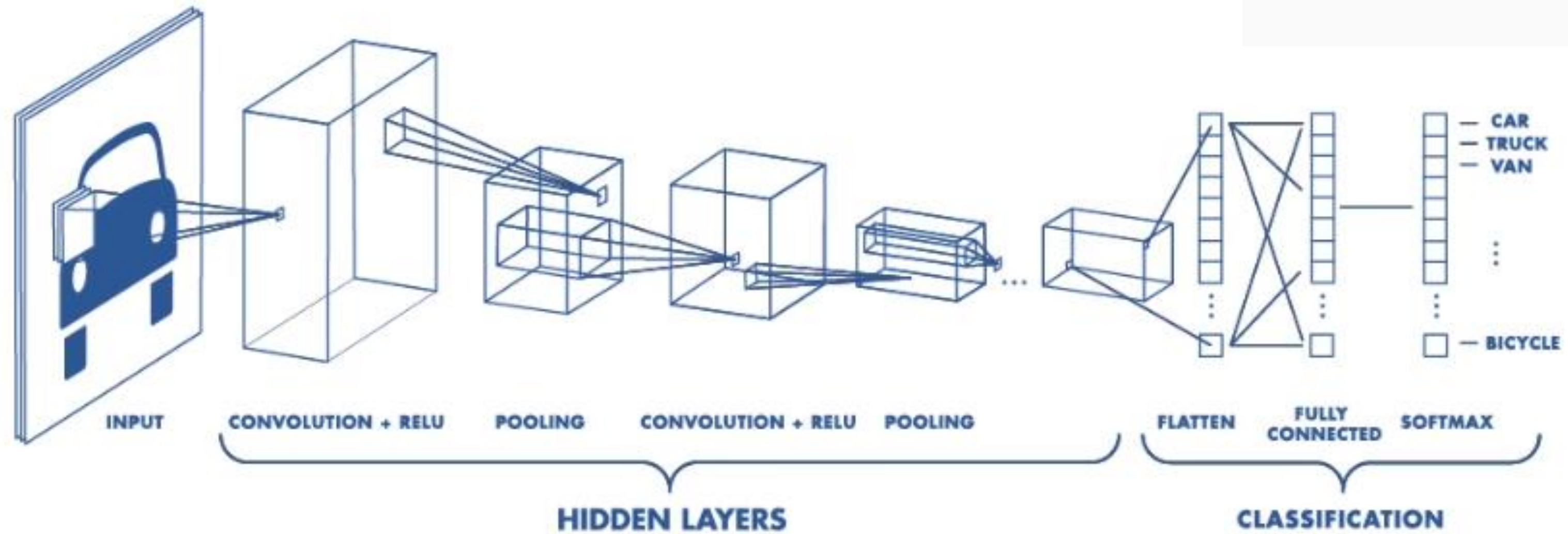


Example



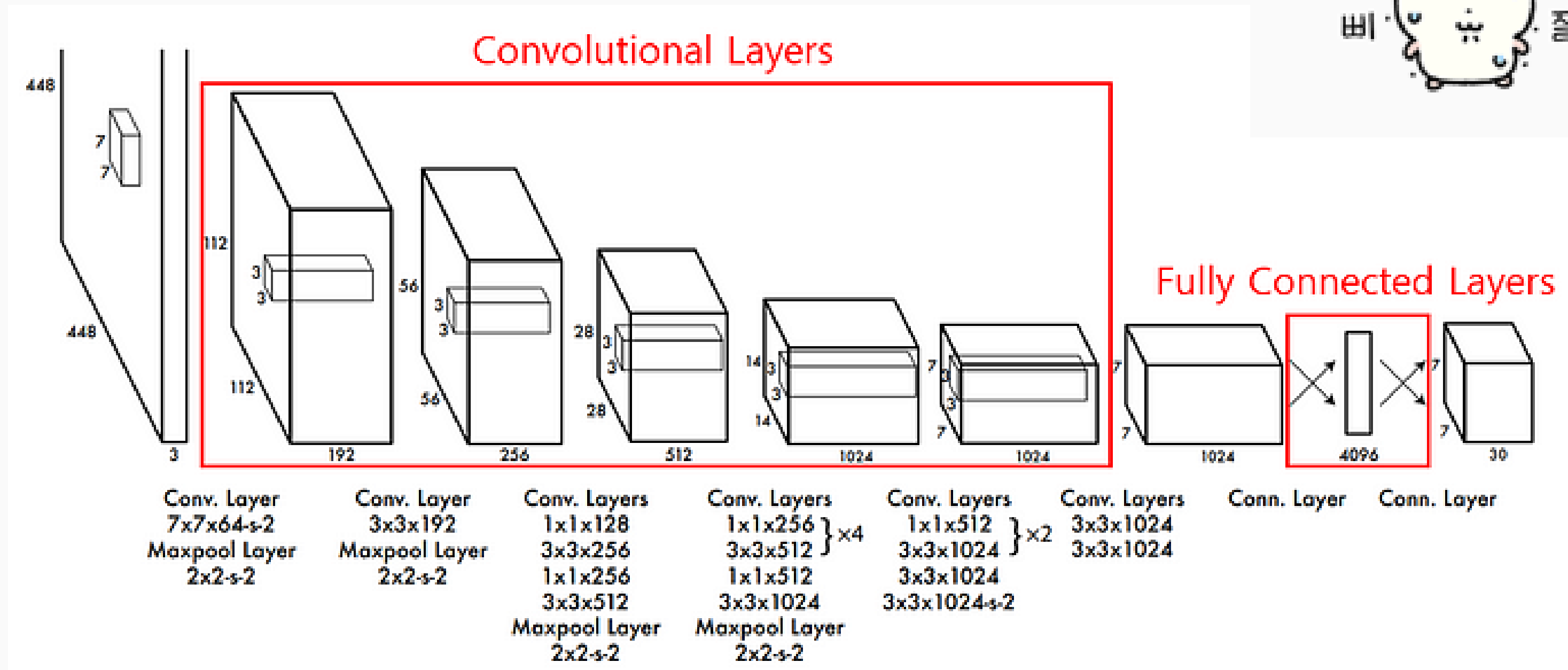
CNN

Loading...



YOLO

어라...?
왜 안뵈지?





THANK YOU!

CONTINUE...



TaeEun