



DEMYSTIFYING DEEP LEARNING: TUTORIAL SERIES

CHAPTER 4: CONVOLUTIONAL NEURAL NETWORK

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May 22 2020

AGENDA FOR THE SERIES

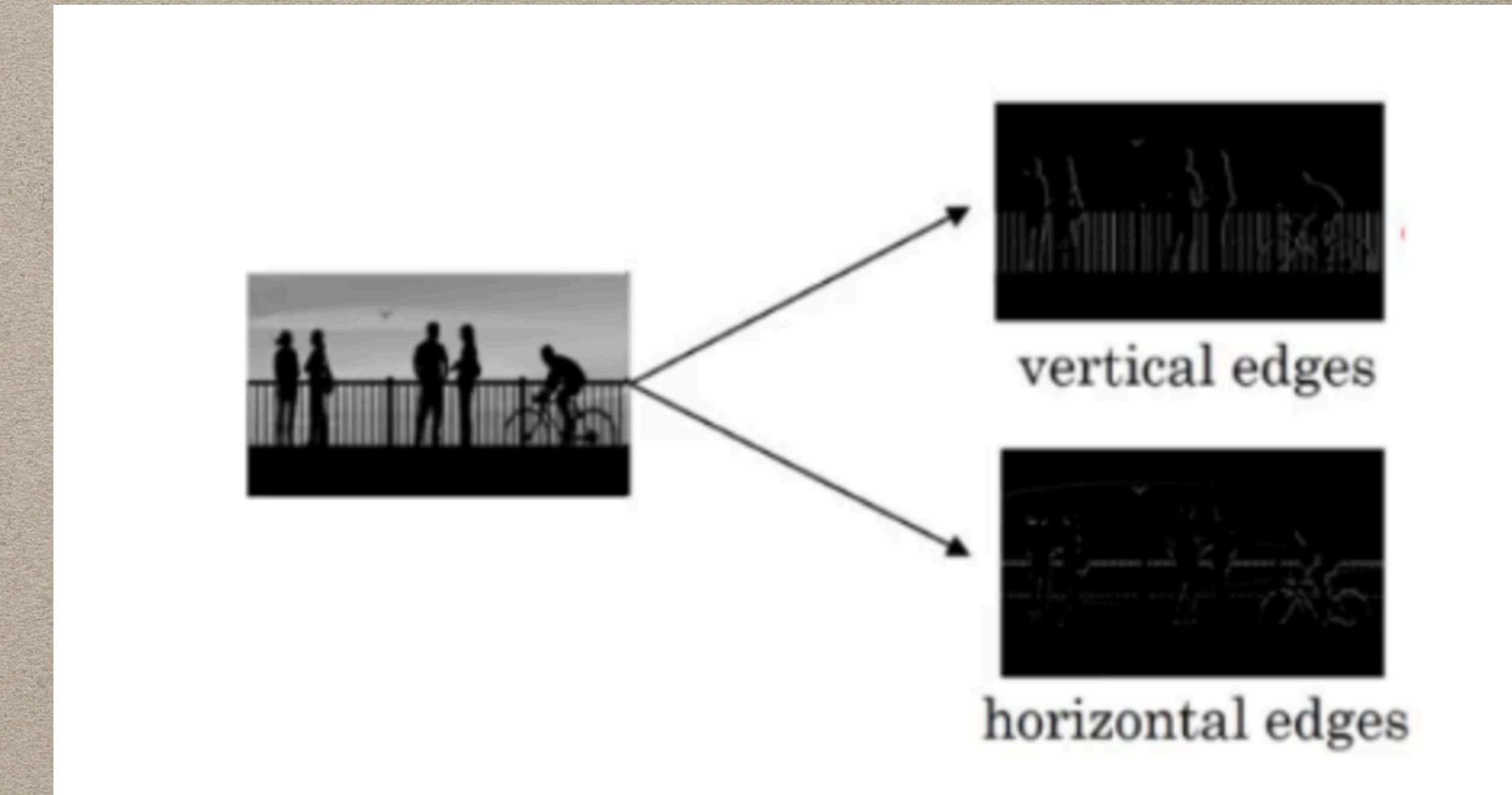
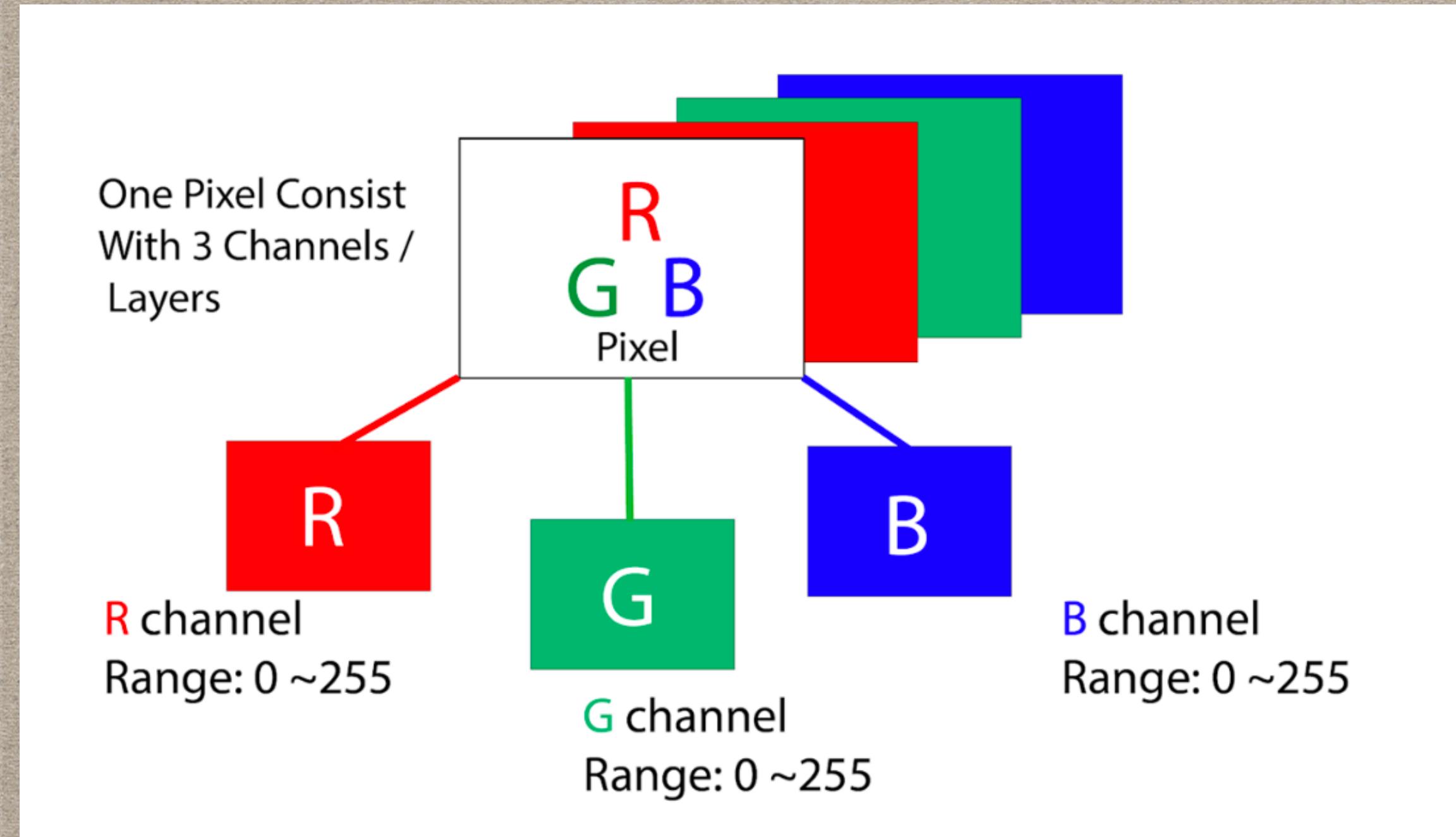
Session	Topic
Session 1	Introduction to Deep Learning
Session 2	Building blocks of Neural Network - 1
Session 3	Building blocks of Neural Network - 2
Session 4	Convolutional Neural Network
Session 5	CNN for Image Classification (May 29)
Session 6	CNN for Object Detection
Session 7	Architectures like AlexNet, Inception etc.
Session 8	Recurrent Neural Network
Session 9	NLP Applications of RNN

AGENDA FOR SESSION 4

- *Image processing*
- *Convolutional Neural Network*
- *Use cases of CNN*
- *Pooling and padding*
- *Full connected layers*
- *Lab*



IMAGE PROCESSING



EDGE DETECTION



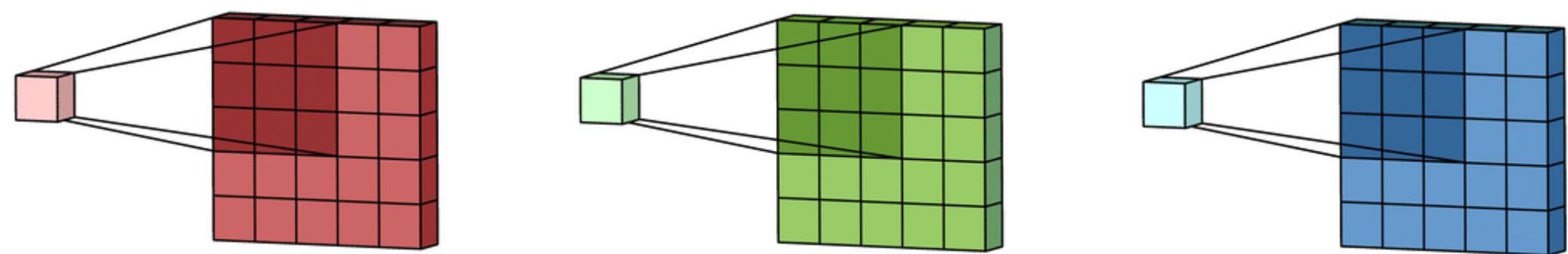
-1	0	1
-2	0	2
-1	0	1

Vertical

1	2	1
0	0	0
-1	-2	-1

Horizontal

THE CONVOLUTION OPERATION



1	1	1	0	0
0	1	1	1	0
0	0	1	1	1
0	0	1	1	0
0	1	1	0	0

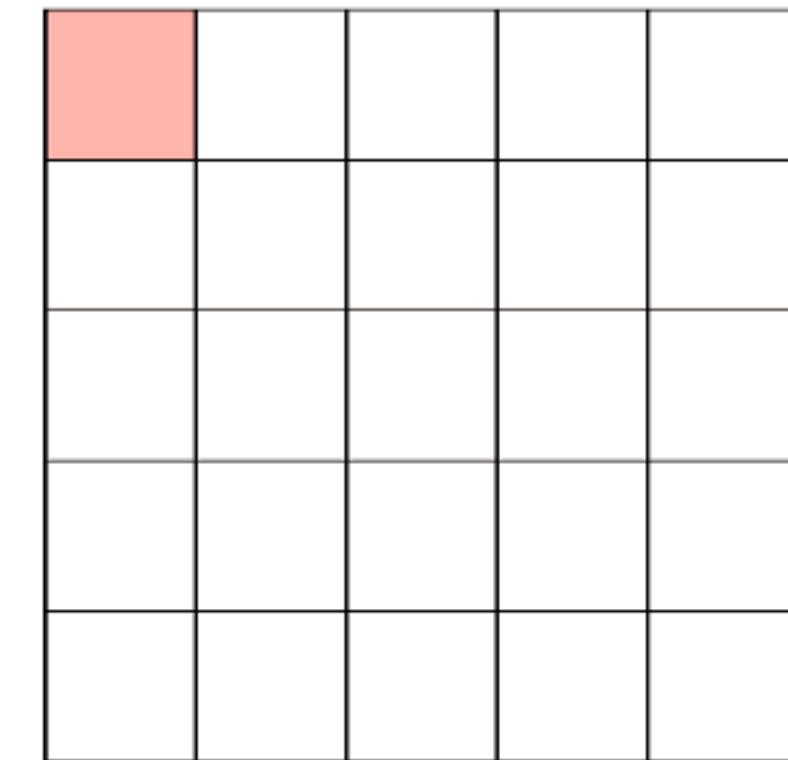
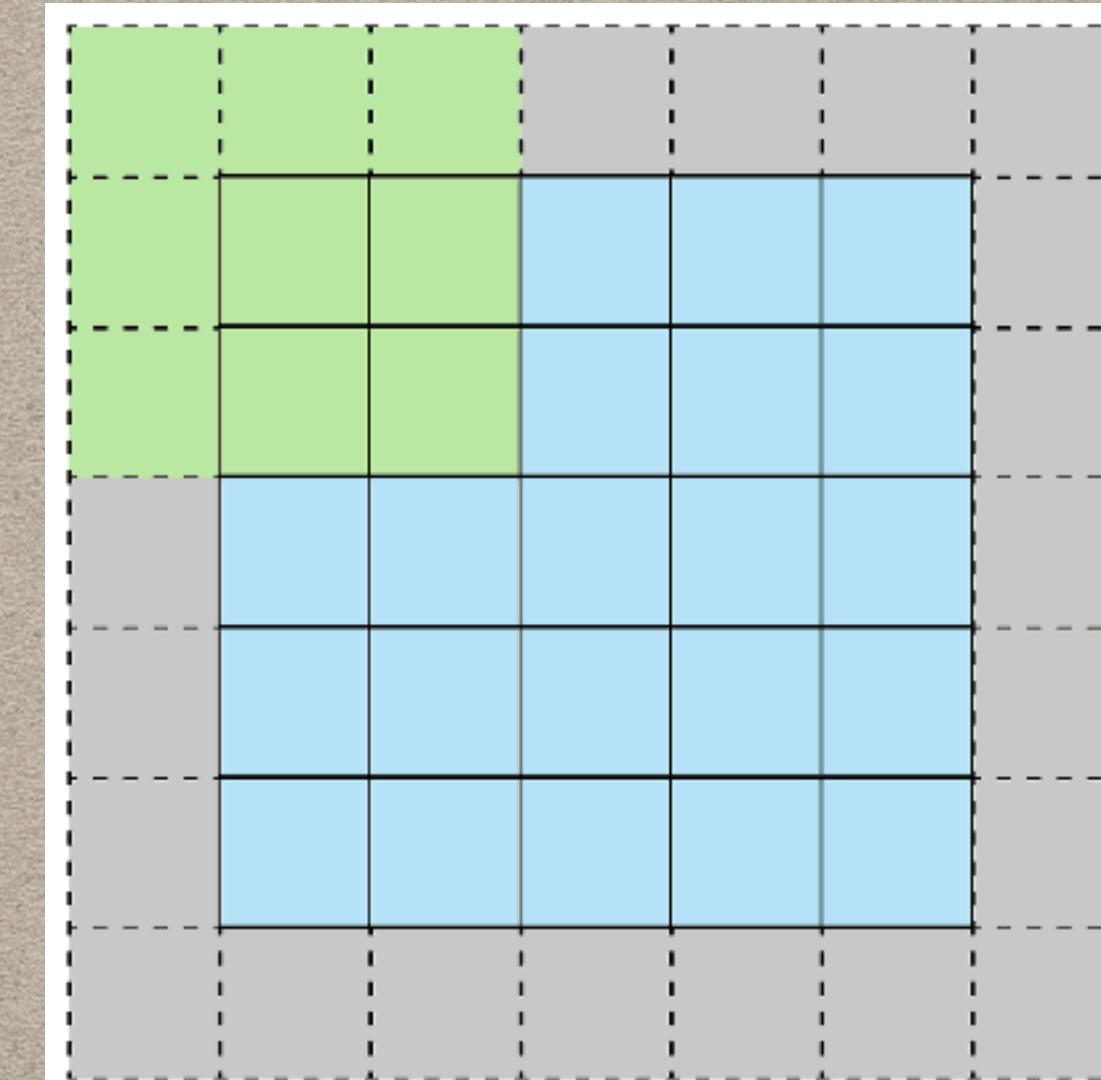
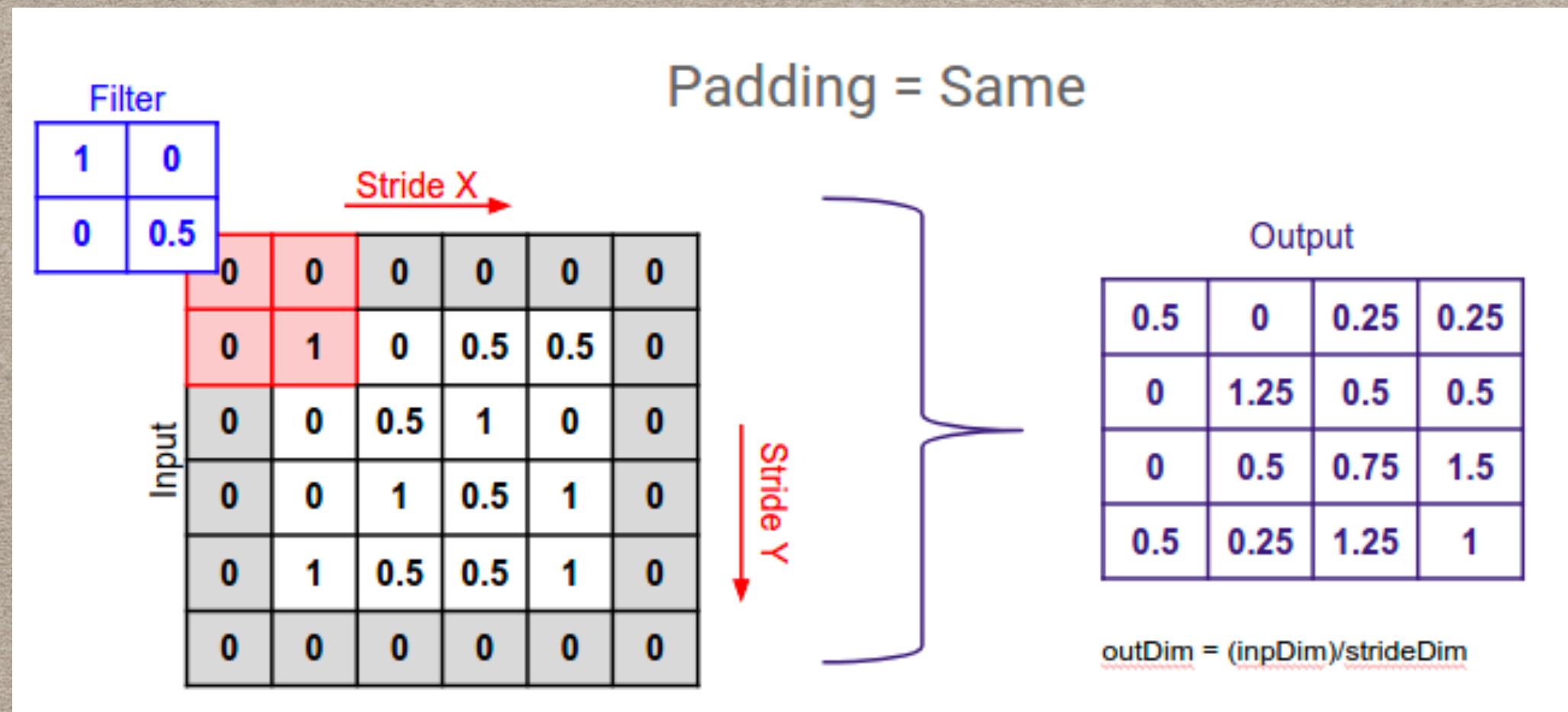
Image

4		

Convolved
Feature

SHOW THE GIF

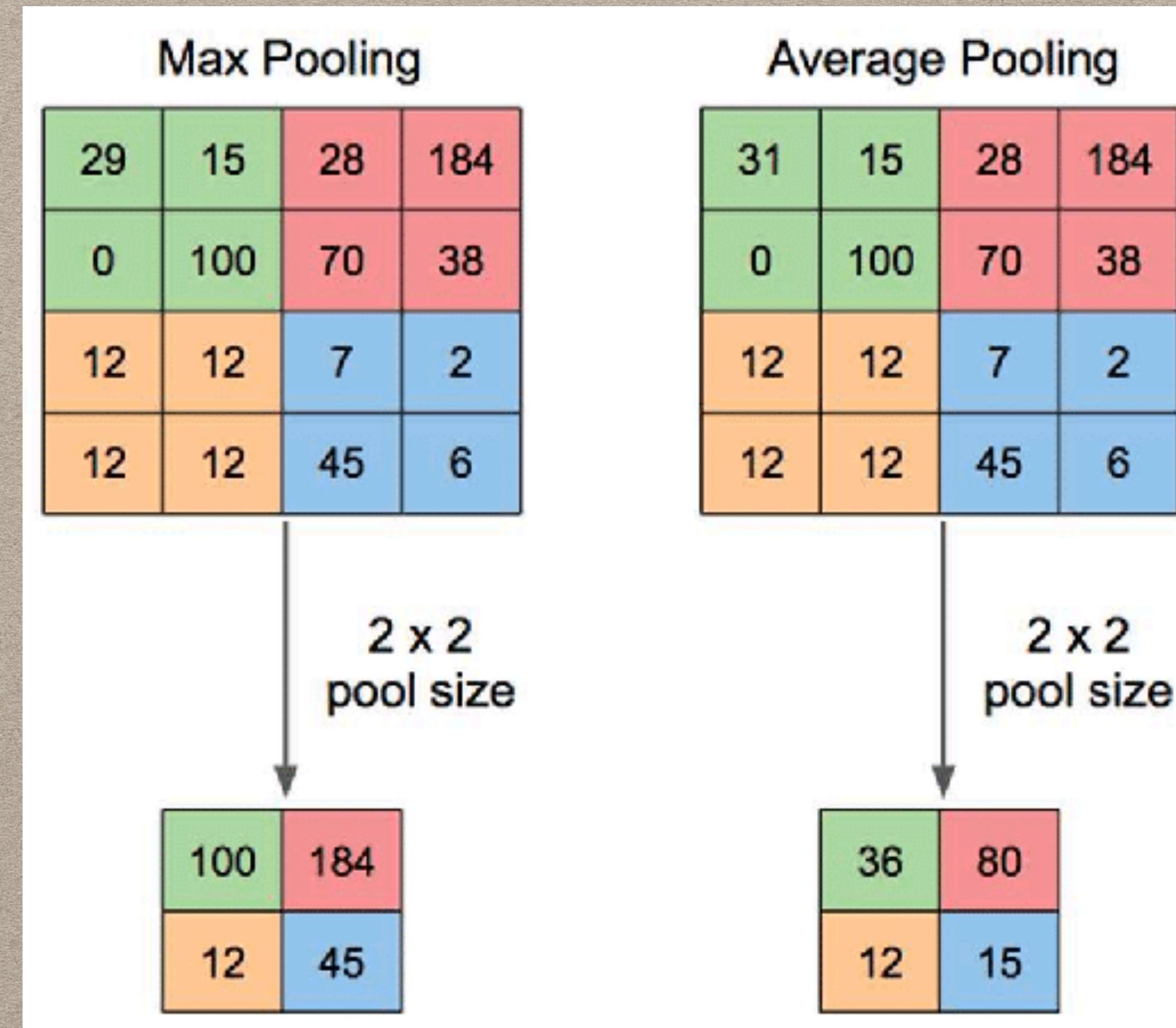
PADDING & STRIDE IN CONVOLUTION



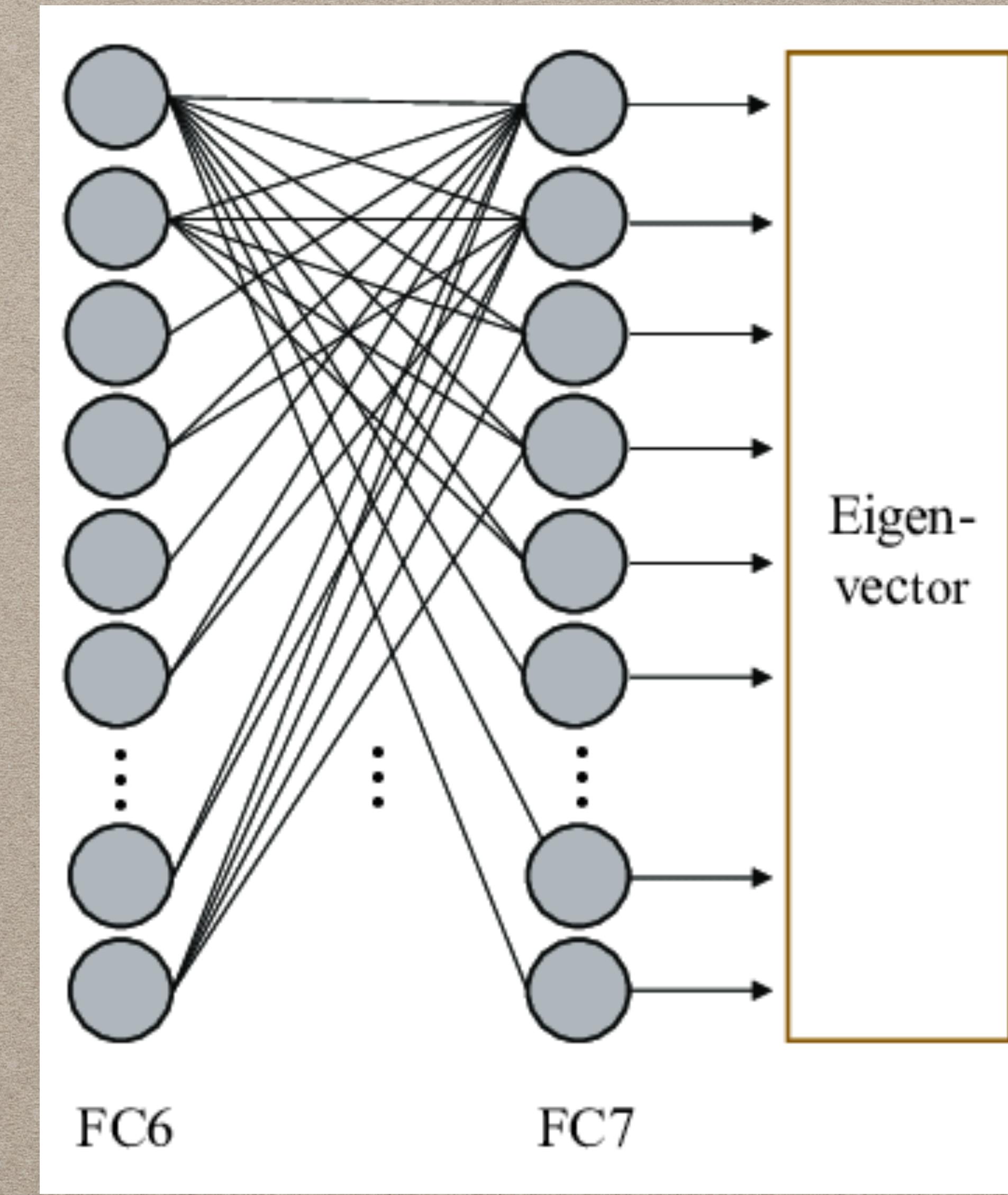
Feature Map

SHOW THE GIF

AVERAGE AND MAX POOLING



FULLY CONNECTED LAYERS AND USE



TIME TO HIT THE LAB

QUESTIONS PLEASE!

github.com/vverdhan



Thanks

