Bangladesh University of Business and Technology (BUBT)

Assignment

Course Title: Neural Network and Fuzzy Systems
Course Code: CSE 477

Submitted By:	Submitted To:
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Input:

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

Padding = 1, n = 5

Stride = 1, f = 3

For, Padding

$$\text{Output, } O = \frac{n+2p-f}{s} + 1$$

$$= \frac{5+2.1-3}{1} + 1$$

$$= 4+1$$

$$= 5$$

Padding + filter 1,

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

$*$

1	0	1
1	1	1
0	0	1

$=$

2	3	2	3	1
3	4	3	5	1
3	4	3	5	1
3	4	3	5	1
2	3	3	4	1

Again,

Padding + Filter 2

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

$*$

0	0	1
1	0	0
0	1	1

$=$

1	2	2	2	1
2	3	2	3	1
2	3	2	3	1
2	3	2	3	1
1	1	1	2	0

Now,

Adding Two Matrix,

3	5	4	5	2
5	7	5	8	2
5	7	5	8	2
5	7	5	8	2
3	4	4	6	1

$\Rightarrow$ Convoluted Matrix

Applying Max Pooling (2,2)

7	7	8
7	7	8
7	7	8

$\therefore$ output

$$= \frac{n-f}{s} + 1$$

$$= 3$$