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BUSINESS AND TECHNOLOGY
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Assignment

Course Title: Neural Network and Fuzzy Systems

Course Code: CSE 477

Submitted By:

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Section : 03

Intake : 44

Program : B.Sc. in CSE

Submitted To:

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**Bangladesh University of Business and Technology
(BUBT)**

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

Output, $O = \frac{n + 2P - f}{S} + 1$
 $= \frac{5 + 2 \cdot 1 - 3}{1} + 1$
 $= 4 + 1 = 5$

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	0	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

Adding ~~two~~ 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

⇒ convoluted matrix.

Applying max pooling (2, 2)

7	7	8
7	7	8
7	7	8

$$\begin{aligned} \therefore \text{output} &= \frac{n-f}{s} + 1 \\ &= 3 \end{aligned}$$