Mini HW 1 for Module 1:

1. What is the resulting scalar number obtained by performing a “One Location” Convolution between the two tables below?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | 1 | 2 | 3 | | 3 | 2 | 1 | | 1 | 2 | 3 | | symbolConvolution1.jpg | |  |  |  | | --- | --- | --- | | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | | = 18  \_\_\_\_\_\_ |

(1\*1)+(2\*1)+(1\*3) + (3\*1) +(2\*1)+(1\*1) + (1\*1)+(2\*1)+(3\*1) = 6 + 6 + 6 = 18

1. What is the resulting 3x3 table for a “Scanning” Convolution? You must do the steps of

a) embedding in an ocean of zeroes, b) the double flip, and c) the weighted sum in a scanning manner.

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| |  |  | | --- | --- | | 1 | 2 | | 3 | 4 | | symbolConvolution1.jpg | |  |  | | --- | --- | | 10 | 6 | | 11 | 1 | | |  |  |  | | --- | --- | --- | | \_\_\_ | \_\_\_ | \_\_\_ | | \_\_\_ | \_\_\_ | \_\_\_ | | \_\_\_ | \_\_\_ | \_\_\_ |     = |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| |  |  |  |  | | --- | --- | --- | --- | | 0 | 0 | 0 | 0 | | 0 | 1 | 2 | 0 | | 0 | 3 | 4 | 0 | | 0 | 0 | 0 | 0 | | symbolConvolution1.jpg | |  |  | | --- | --- | | 1 | 11 | | 6 | 10 | | |  |  |  | | --- | --- | --- | | 10 | 26 | 12 | | 41 | 81 | 26 | | 33 | 47 | 4 |     = |