Deep Learning

Coding Assignment

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Note:

- Plagiarism of any kind (from the internet and from other students) will result in the deduction of marks.
- Please submit the .ipynb or .py files

Q1. Assume the input matrix I and weight matrix W. Write a Python code to convolve the weight matrix on image I and apply average pooling without using the inbuild function. (10)

Input image (I)

1	2	2
1	3	4
1	0	0

Weight matrix(W)

1	-1
1	-1
0	1

Q2. Take the MNIST dataset and create a CNN architecture to create a classification model. Use Adam optimiser from the library and without a library and comment on your observations. (10)

Q3. Apply five different regularisation methods and comment on the performance of deep learning data. You can use MNIST data or any other of your choice. You may use the architecture designed in Q2 or may take the existing methods like VGG/ ResNet . (10)