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regentishamitha@gmail.com ▾

 NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Deep Learning - IIT Ropar (course)


Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

week 4

Week 5

Week 6

Week 7

Week 8

Week 9

week 10

Assignment 10

The due date for submitting this assignment has passed.

Due on 2021-03-31, 23:59 IST.

Assignment submitted on 2021-03-31, 22:14 IST

 1) In Convolutional Neural Networks, the depth of the filter is equal to the depth of the input. **1 point**

- ☒ True
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

 2) Stride defines the intervals at which the filter is applied. **1 point**

- ☒ True
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

 3) If a stride of 2 is done, what would be the output size and the final formula? **1 point**


$$W_2 = \frac{W_1 - F + 2P}{S} + 1$$

☐ The convolution operation (unit? unit=129&lesson=130)

☐ Relation between input size, output size and filter size (unit? unit=129&lesson=131)

☐ Convolutional Neural Networks (unit? unit=129&lesson=132)

☐ Convolutional Neural Networks (Contd.) (unit? unit=129&lesson=133)

☐ CNNs (success stories on ImageNet) (unit? unit=129&lesson=134)

☐ CNNs (success stories on ImageNet) (Contd.) (unit? unit=129&lesson=135)

☐ Image Classification continued (GoogLeNet and ResNet) (unit? unit=129&lesson=136)

☐ Visualizing patches which maximally activate a neuron (unit? unit=129&lesson=137)

☐ Visualizing filters of a CNN (unit? unit=129&lesson=138)

☐ Occlusion experiments (unit? unit=129&lesson=139)

☐ $W_2 = W_1 - F + 1.2P$

☐ $W_2 = W_1 - F + 2P + 1$

☐ None of these

Yes, the answer is correct.

Score: 1

Accepted Answers:

$$W_2 = \frac{W_1 - F + 2P}{S} + 1$$

4) If we use pad p=1 with 3X3 kernel, what is the size of the padding? **1 point**

☐ $W_2 = W_1 + F + 1 + 2P$

☒ $W_2 = W_1 - F + 1 + 2P$

☐ $W_2 = W_1 - F + 1 - 2P$

☐ $W_2 = W_1 - F - 1 - 2P$

Yes, the answer is correct.

Score: 1

Accepted Answers:

$$W_2 = W_1 - F + 1 + 2P$$

5) If we have a 5X5 filter, if we want the output size to be same as the input size what should be the size of the padding? **1 point**

☐ $W_2 = W_1 - 6 + 1 + 4$

☐ $W_2 = W_1 - 6 - 1 + 4$

☒ $W_2 = W_1 - 5 + 1 + 4$

☐ None of these

Yes, the answer is correct.

Score: 1

Accepted Answers:

$$W_2 = W_1 - 5 + 1 + 4$$

6) S_1 and S_2 are two statements related to Feed Forward Network, Choose the correct option. **1 point**

S_1 : Every output depends on every input.

S_2 : The connection is denser.

☐ S_1 is true and S_2 is false.

☐ S_1 is false and S_2 is true.

☒ Both S_1 and S_2 are true.

☐ Finding influence of input pixels using backpropagation (unit? unit=129&lesson=140)

☐ Guided Backpropagation (unit? unit=129&lesson=141)

☐ Optimization over images (unit? unit=129&lesson=142)

☐ Create images from embeddings (unit? unit=129&lesson=143)

☐ Deep Dream (unit? unit=129&lesson=144)

☐ Deep Art (unit? unit=129&lesson=145)

☐ Fooling Deep Convolutional Neural Networks (unit? unit=129&lesson=146)

☒ Lecture Material for Week 10 (unit? unit=129&lesson=147)

☒ Quiz: Assignment 10 (assessment? name=188)

☐ Week 10 Feedback Form : Deep Learning - IIT Ropar (unit? unit=129&lesson=148)

Week 11

Week 12

☐ Both S_1 and S_2 are false.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both S_1 and S_2 are true.

7) S_1 and S_2 are two statements related to Convolutional Neural Networks, choose the correct option. **1 point**

S_1 : Convolutional Neural Networks reduces the number of parameters due to sparse connectivity.
 S_2 : Weight sharing is the characteristic of Convolutional Neural Networks.

- ☐ S_1 is true and S_2 is false.
☐ S_1 is false and S_2 is true.
☒ Both S_1 and S_2 are true.
☐ Both S_1 and S_2 are false.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both S_1 and S_2 are true.

8) S_1 and S_2 are two statements related to Ideas of Inception Module, choose the correct option. **1 point**

S_1 : Apply multiple kernels of different size.
 S_2 : Use 1x1 convolution to make the whole computation manageable.

- ☐ S_1 is true and S_2 is false.
☐ S_1 is false and S_2 is true.
☒ Both S_1 and S_2 are true.
☐ Both S_1 and S_2 are false.

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both S_1 and S_2 are true.

9) Gradient $\frac{\partial h_j}{\partial x_i}$ would tell the influence **1 point**

- ☐ $\frac{\partial h_j}{\partial x_i} = 0 \rightarrow$ No influence
☐ $\frac{\partial h_j}{\partial x_i} = \text{large} \rightarrow$ High influence
☐ $\frac{\partial h_j}{\partial x_i} = \text{small} \rightarrow$ small influence
☒ All of these

Yes, the answer is correct.
Score: 1

Accepted Answers:

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All of these

10) S_1 and S_2 are two statements related to ReLU, choose the correct option.

1 point

S_1 : In forward pass ReLU activation allows only positive values to pass and clamps negative to zero.

S_2 : During backward pass no gradient passes through the dead ReLU neurons

- ☐ S_1 is true and S_2 is false.
- ☐ S_1 is false and S_2 is true.
- ☒ Both S_1 and S_2 are true.
- ☐ Both S_1 and S_2 are false.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Both S_1 and S_2 are true.