Started on	Thursday, 3 February 2022, 2:02 PM
State	Finished
Completed on	Thursday, 3 February 2022, 2:22 PM
Time taken	20 mins 1 sec
Grade	**6.00** out of 15.00 (**40**%)

Question **1**

Correct

Mark 2.00 out of 2.00

Ground truth (target) labels (1-hot encoded) for a binary classification problem for some input data is [0 1]. Predicted values are [0.3 0.7]. What would be binary cross-entropy loss?

Answer: 0.5145 ✔

The correct answer is: 0.52

Question **2**

Correct

Mark 2.00 out of 2.00

If value of 4 output neurons before softamx is [2.9 1.5 0.4 0.2] (neuron 1 to neuron 4 in sequence), what would be softmax score of the third neuron (select the closest value)?

Select one:

- a. 0.06 ✔
- b. 0.04
- c. 0.07

The correct answer is: 0.06

Question **3**

Incorrect

Mark 0.00 out of 2.00

Assume spatial extent of the input volume and max-pooling filter to be 599 x 399 and 3 x 3 respectively. Assume stride=2. What would be total number of activation (neurons) in the resultant volume after this pooling operation?

Answer: 59004 ✖

The correct answer is: 59501

Question **4**

Incorrect

Mark 0.00 out of 2.00

Assume size of the input image and convolution filter to be 600 x 400 x 3 and 11 x 11 x 3 respectively. If we wish to produce 10 feature maps as the output of this valid convolution operation (stride=1), how many connections are involved? Assume that each convolutional filter has an associated bias.

Answer: 238004 ✖

The correct answer is: 837564000

Question **5**

Incorrect

Mark 0.00 out of 2.00

Assume size of the input image and convolution filter to be 600 x 400 x 3 and 11 x 11 x 3 respectively. If we wish to produce 10 feature maps as the output of this convolution operation, how many parameters are involved? Ignore bias parameters in calculation.

Answer: 28004 ✖

The correct answer is: 3630

Question **6**

Correct

Mark 1.00 out of 1.00

In transfer learning, if the new dataset is large and similar to original dataset:

Select one:

- a. we can fine-tune through the full network ✔
- b. the best idea might be to train a linear classifier on the CNN codes
- c. we can afford to train a ConvNet from scratch
- d. it might work better to train the SVM classifier from activations somewhere earlier in the network

The correct answer is: we can fine-tune through the full network

Question **7**

Incorrect

Mark 0.00 out of 1.00

In transfer learning, if the new dataset is large but very different from the original dataset:

Select one:

- a. we can fine-tune through the full network ✖
- b. it might work better to train the SVM classifier from activations somewhere earlier in the network
- c. the best idea might be to train a linear classifier on the CNN codes
- d. we can afford to train a ConvNet from scratch

The correct answer is: we can afford to train a ConvNet from scratch

Question **8**

Correct

Mark 1.00 out of 1.00

A convolutional operation basicaly performs _____ operation window-wise.

Select one:

- a. None of these
- b. Sum of Square
- c. Sum of Product ✔
- d. Sum of Differences

The correct answer is: Sum of Product

Question **9**

Incorrect

Mark 0.00 out of 1.00

The popular choice of a weight function in perceptron/multilayer perceptron is

Select one:

- a. Sum function
- b. Sum of product function ✖
- c. Product function
- d. None of these

The correct answer is: Product function

Question **10**

Incorrect

Mark 0.00 out of 1.00

Which function is the best as the activation function if you wish to treat its output as probability values?

Select one:

- a. log-sigmoid
- b. ReLU ✖
- c. linear
- d. tan-sigmoid

The correct answer is: log-sigmoid

◄ Practical 2 - CNN MNIST

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