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State	Finished
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Grade	**9.00** out of 15.00 (**60**%)

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: 0.515 ✔

The correct answer is: 0.52

Question **2**
Correct
Mark 2.00 out of 2.00

If the net-input of a neuron is 5 and (i) its activation function is log-sigmoid, what will be its output? (ii) its activation function is ReLU, what will be its output?

Select one:

- a. (i) 0.91, (ii) 5
- b. (i) 0.99, (ii) 5 ✔
- c. (i) 0.01, (ii) 0

The correct answer is: (i) 0.99, (ii) 5

Question **3**
Correct
Mark 2.00 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: 59501 ✔

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: 1773 ✖

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: 1200 ✖

The correct answer is: 3630

Question **6**

Correct

Mark 1.00 out of 1.00

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

Select one:

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

The correct answer is: the best idea might be to train a linear classifier on the CNN codes

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

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

The correct answer is: Product function

Question **9**

Correct

Mark 1.00 out of 1.00

If a deep neural network faces overfitting problem, potential solutions include:

Select one:

- a. Batch Normalization
- b. Dropout
- c. All of these ✔
- d. Data Augmentation

The correct answer is: All of these

Question **10**

Correct

Mark 1.00 out of 1.00

A Deep Learning Model with the high variance exihibits

Select one:

- a. Overfitting ✔
- b. None of these
- c. Perfect fit
- d. Underfitting

The correct answer is: Overfitting

◄ Practical 2 - CNN MNIST

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