Correct Marks : 1 Selectable Option : 0

Question Label : Multiple Select Question

In the planning graph, which of the following are mutex action pairs in Layer 1?

Options :

6406531500341. ✔ Pickup(A), Pickup(D)

6406531500342. ✔ Pickup(A), Unstack(C,B)

6406531500343. ✖ Pickup(A), Stack(D,B)

6406531500344. ✖ Pickup(A), Pickup(C)

6406531500345. ✖ Unstack(C,B), Stack(D,B)

Question Number : 60 Question Id : 640653450788 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Selectable Option : 0

Question Label : Multiple Select Question

In the planning graph, which of the following are mutex proposition pairs in Layer 1?

Options :

6406531500346. ✔ holding(A), holding(C)

6406531500347. ✔ holding(A), holding(D)

6406531500348. ✖ holding(A), on(C,B)

6406531500349. ✖ onTable(A), on(C,B)

6406531500350. ✖ on(C,B), on(C,D)

Deep Learning

Section Id :	64065329294
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17

Number of Questions to be attempted :	17
Section Marks :	50
Display Number Panel :	Yes
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065364742
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 61 Question Id : 640653450792 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL: DEEP LEARNING"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECT TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT ,PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531500353. ✔ Yes

6406531500354. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065364743
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 62 Question Id : 640653450793 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following threshold θ values of MP neuron implements AND Boolean function denoted by $f(\mathrm{x})$? Assume that the number of inputs x_i to the neuron is four and the neuron does not have any inhibitory inputs.

$$f(\mathrm{x}) = \begin{cases} 1, & \text{if } \sum_{i=0}^{3} x_i > \theta \\ 0, & otherwise \end{cases}$$

Options :

6406531500355. ✖ 0

6406531500356. ✖ 1

6406531500357. ✖ 2

6406531500358. ✔ 3

6406531500359. ✖ 4

Question Number : 63 Question Id : 640653450796 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Consider a sigmoid function

$$f(x) = \frac{1}{1 + e^{-(wx+b)}}$$

Suppose that w is restricted to take only negative values ($w < 0$). Suppose further that we define the steepness of the curve as absolute value of the slope. Select all the correct statements about the function

Options :

6406531500369. ✖ Increasing the value of *b* shifts the sigmoid function to the left (i.e., towards negative infinity)

6406531500370. ✔ Increasing the value of *b* shifts the sigmoid function to the right (i.e., towards positive infinity)

6406531500371. ✖ Increasing the value of *w* increases the steepness of the sigmoid function

6406531500372. ✔ Increasing the value of *w* decreases the steepness of the sigmoid function

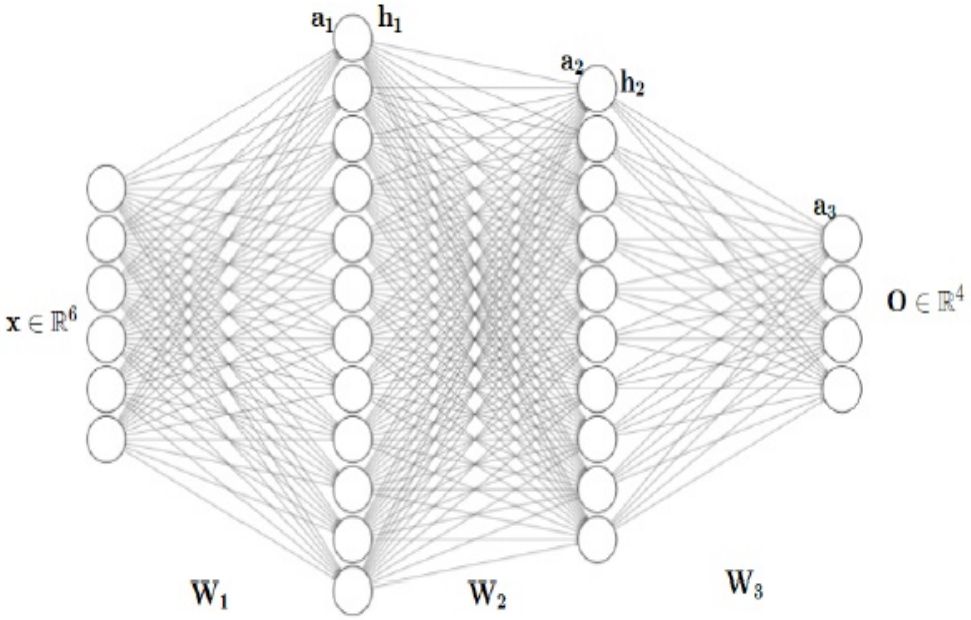
Question Number : 64 Question Id : 640653450802 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Suppose that a momentum based gradient descent algorithm is used to train the feed forward neural network shown below.
The parameter update rule for the weight matrix $\mathbf{W_3}$ at time step t is written as follows,

$$u_3^t = \beta u_3^{t-1} + (1-\beta)\nabla a_3^t (h_2^t)^T$$



$$W_3^{t+1} = W_3^t - \eta u_3^t$$

where, $0 \leq \beta < 1$.Choose the correct statements about the update rule

Options :

6406531500377. ✔ At any given time step u_3^t is a matrix

6406531500378. ✖ At any given time step u_3^t is a vector

6406531500379. ✖ The update rule for u_3^t is wrong, the second term should have been written as ∇W_3^t

6406531500380. ✔ It requires bias correction to avoid bias towards zero

6406531500381. ✖ It does not require any bias correction

Question Number : 65 Question Id : 640653450804 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

The update rule for the ADAM (Adaptive Moments) optimization algorithm is given below,

$$m_t = \beta_1 m_{t-1} + \nabla w_t$$
$$v_t = \beta_2 v_{t-1} + (\nabla w_t)^2$$
$$\hat{m}_t = \frac{m_t}{1-\beta_1^t}$$
$$\hat{v}_t = \frac{v_t}{1-\beta_2^t}$$
$$w_{t+1} = w_t - \frac{\eta}{\sqrt{\hat{v}_t + \epsilon}}\hat{m}_t$$

where, $\hat{m}_t, \hat{v}_t$ are bias corrected version of m_t, v_t. Here, $0 \leq \beta_1 < 1$ and $0 \leq \beta_2 < 1$. Choose the correct statement(s) from the following statements.

Options :

6406531500386. ✔ m_t does not require bias correction

6406531500387. ✔ v_t does not require bias correction

6406531500388. ✔ m_t and v_t are exponential averaging of history of gradients and gradients squared, respectively

6406531500389. ✔ Both β_1 and β_2 can take values greater than one and in such a case the past gradients are given more weightage than the current gradients

Question Number : 66 Question Id : 640653450805 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Select all correct statements about the bias and variance of deep learning models.

Options :

6406531500390. ✔ A model with high bias produce high training error and high validation error

6406531500391. ✖ A model with high variance produce high training error and low validation error

6406531500392. ✔ A model with high variance produce low training error and high validation error

6406531500393. ✔ Bias and variance can be both made zero if the underlying distribution of the samples are known and also the samples are not corrupted by noise

Question Number : 67 Question Id : 640653450806 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Suppose that we use Dropout scheme to regularize the deep learning model. Assume that the dropout probability p = 0.75 for all the layers in the model and the model is trained using Stochastic Gradient Descent (SGD) optimizer. Choose the correct statements about Dropout regularization.

Options :

6406531500394. ✖ Dropout reduces (removes) 25 percent of weights from the model during training and inference

6406531500395. ✖ For each iteration, 75% of neurons are dropped randomly from the model

6406531500396. ✔ For each iteration, 25% of neurons are dropped randomly from the model

6406531500397. ✔ Each weight gets multiplied by a factor p during inference.

6406531500398. ✖ Each weight gets multiplied by a factor $1 - p$ during inference.

6406531500399. ✖ The Dropout method can not be combined with other regularization methods

Sub-Section Number : 3

Sub-Section Id : 64065364744

Question Shuffling Allowed : Yes

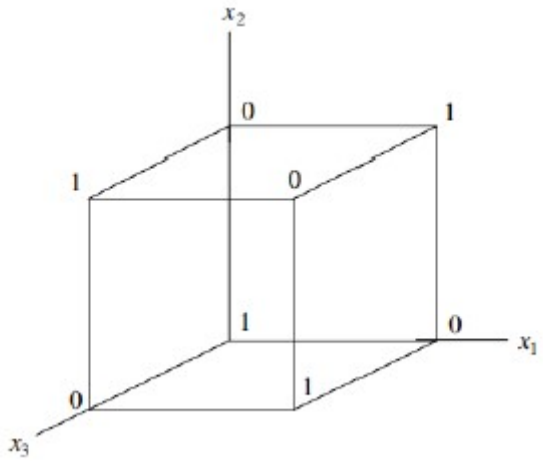
Is Section Default? : null

Question Number : 68 Question Id : 640653450794 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

The figure below represents a Boolean function using a unit cube. Each vertex shows the label or output of the function for the given input. Which of the followings is (are) true about the function?



Options :

6406531500360. ✔ The function has 8 inputs

6406531500361. ✖ The function has 12 inputs

6406531500362. ✖ The function has 24 inputs

6406531500363. ✖ The function is linearly separable

6406531500364. ✔ The function is not linearly separable

Sub-Section Number : 4

Sub-Section Id : 64065364745

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 69 Question Id : 640653450795 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider two data points $\mathbf{x_1} = \begin{bmatrix} a \\ a \end{bmatrix}$ and $\mathbf{x_2} = -1 * \mathbf{x_1}$, where $a < 0$. The data point $\mathbf{x_1}$ belongs to positive class (denoted as 1) and the data point $\mathbf{x_2}$ belongs to negative class (denoted by 0). Suppose that the perceptron learning algorithm is used to find the decision boundary that separates these data points with the following rule,

$$f(\mathbf{x}) = \begin{cases} 1, & \text{if } \mathbf{w}^T\mathbf{x} \geq 0, \\ 0 & \mathbf{w}^T\mathbf{x} < 0 \end{cases}$$

The algorithm checks $\mathbf{x_1}$ in the first iteration and $\mathbf{x_2}$ in the second iteration and so on. How many times the weights get updated until convergence(That is, the algorithm classifies both the points correctly)? The weighs do not include bias.

Options :

6406531500365. ✔ 1

6406531500366. ✖ 2

6406531500367. ✖ 4

6406531500368. ✖ It oscillates and never converges

Question Number : 70 Question Id : 640653450803 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

A team has a data set that contains 1000 samples for training a feed forward neural network. Suppose they decided to use the gradient descent algorithm to update the weights. Suppose further that they use line search algorithm for the learning rate as follows, η = [0.01, 0.1]. How many times do the weights get updated after training the network for 20 epochs? (Note, for each weight update the loss has to decrease)

Options :

6406531500382. ✔ 20

6406531500383. ✖ 20000

6406531500384. ✖ 40000

6406531500385. ✖ 40

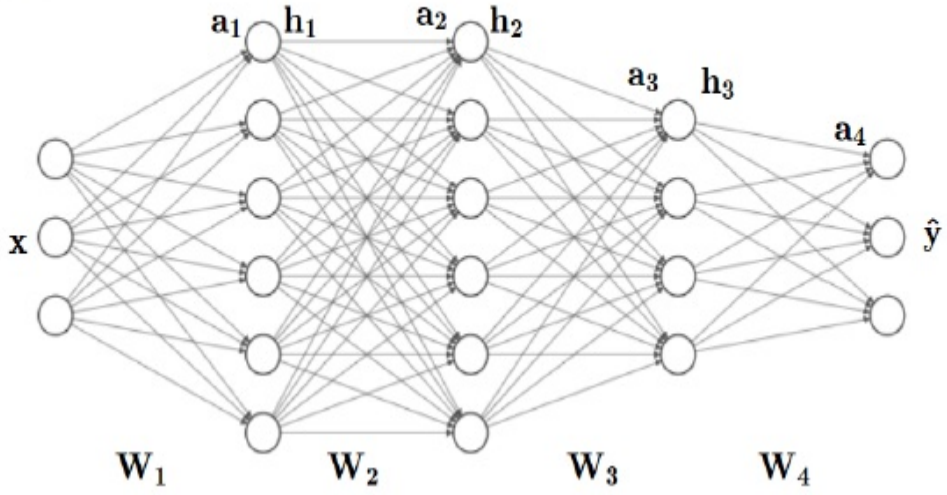
Sub-Section Number :	5
Sub-Section Id :	64065364746
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653450797 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (71 to 74)

Question Label : Comprehension

The diagram below shows a feed forward neural network with fully connected layers (not to scale)



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 71 Question Id : 640653450798 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Suppose that $\mathbf{x} \in \mathbb{R}^{20\times1}$, $\mathbf{h_1} = \mathbf{h_2} \in \mathbb{R}^{100\times1}$, $\mathbf{h_3} \in \mathbb{R}^{50\times1}$ and $\mathbf{y} \in \mathbb{R}^{3\times1}$.How many parameters **(including bias)** are there in the network?

(If your answer is 12345, enter it as 12345)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

17402 to 17404

Question Number : 72 Question Id : 640653450799 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Suppose that a softmax function is used in the output layer to compute the probability for each class.

$$\hat{\mathbf{y}} = softmax(\mathbf{a_4})$$

Assume that $\mathbf{a_4} = \begin{bmatrix} 1 \\ 0 \\ -1 \end{bmatrix}$. What is the value of third element in $\hat{\mathbf{y}}$?(if your intermediate result is 1.2345, then take it as 1.23 to the next step)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.07 to 0.11

Question Number : 73 Question Id : 640653450800 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Suppose that the number of classes is 500, that is, $\hat{y} \in \mathbb{R}^{500\times1}$. Suppose further that all the elements in $\mathbf{a_4}$ is 1. Compute the $\hat{y}$ as follows and enter the sum of the elements in $\hat{y}$

$$\hat{y} = softmax(\mathbf{a_4})$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.9 to 1.1

Question Number : 74 Question Id : 640653450801 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Short Answer Question

Suppose the dimension of $\mathbf{h_3}$ is $\mathbb{R}^{4\times1}$ and $\mathbf{a_4}$ is $\mathbb{R}^{3\times1}$. Suppose further that the network uses sigmoid (logistic) neurons in the output layer. The output $\mathbf{h_3} = \begin{bmatrix} 1 \\ 1 \\ -1 \\ 1 \end{bmatrix}$ and $\mathbf{a_4} = \begin{bmatrix} 1 \\ 0 \\ -1 \end{bmatrix}$. The true label $\mathbf{y} = \begin{bmatrix} 0 \\ 0 \\ 1 \end{bmatrix}$.

The loss is calculated as follows,

$$L = \frac{1}{2}\sum_{k=1}^{3}(\hat{y}_k - y_k)^2$$

Compute the gradient matrix $\frac{\partial L}{\partial \mathbf{W_4}}$ and enter the sum of the elements of the matrix. (Truncate your result to 2 decimal points)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.3 to 0.36

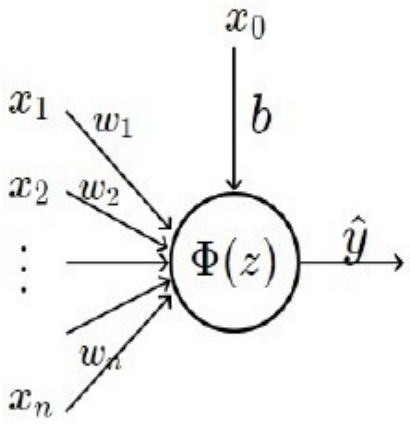
Sub-Section Number :	6
Sub-Section Id :	64065364747
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653450807 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (75 to 77)

Question Label : Comprehension

Consider a single neuron with the activation function $\Phi(\cdot)$ as shown in the figure below. Here, b denotes the bias, z denotes the input to the activation function and $\hat{y}$ is the output from the neuron. For all the calculations, take the true label $y = 0$ and clip the



gradient values to zero if the value is smaller than 10^{-5}. **Truncate** the intermediate results to 2 decimal digits (that is, if the intermediate output is 0.23456, take it as 0.23 to the next step).

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 75 Question Id : 640653450808 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Suppose that all the elements in the input are one (that is, $x_0 = x_1 = \cdots = x_n = 1$) and all the weight values are 0.1 (that is, $b = w_1 = w_2 = \cdots = w_n = 0.01$) Assume the activation function is logistic, $\Phi(z) = \frac{1}{1+exp(-z)}$ and $n = 10$. Use the Mean square error loss ,

$$L = 0.5(\hat{y} - y)^2$$

enter the number of weights that will get modified from their current values during the next iteration.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

10.9 to 11.1

Question Number : 76 Question Id : 640653450809 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

In the previous question, if we change all the weight values to 10, that is, $b = w_1 = w_2 = \cdots = w_n =$ 10, then enter the number of weights that will get updated during the next iteration.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 77 Question Id : 640653450810 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

In the previous question, if we change all the weight values to 10, that is, $b = w_1 = w_2 = \cdots = w_n = 10$ and also the activation $\Phi(\cdot)$ to Relu, then enter the number of weights that will get updated during the next iteration.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

10.9 to 11.1

Question Id : 640653450811 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (78 to 81)

Question Label : Comprehension

An MRI image of size 250×250×8 is feed as an input to a convolutional layer. Suppose that we want to produce an output of size 119×119×64 using a set of kernel. Suppose the kernel size is 13 × 13. Answer the given subquestions.

Sub questions

Question Number : 78 Question Id : 640653450812 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

What is the value of stride s?. Assume zero padding ($p = 0$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1.9 to 2.1

Question Number : 79 Question Id : 640653450813 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

How many parameters (including bias) are there in the convolutional layer?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

86591 to 86593

Question Number : 80 Question Id : 640653450814 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Suppose that the input image is of size 250 × 250 × 3 × 8. Suppose further the kernel size is 13 × 13. How many parameters (including bias) are there in the layer now?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

259647 to 259649

Question Number : 81 Question Id : 640653450815 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The statement that applying max pooling with stride 2 (s = 2) reduces the number of parameters by half is

Options :

6406531500406. ✖ TRUE

6406531500407. ✔ FALSE

Sub-Section Number :	7
Sub-Section Id :	64065364748
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 82 Question Id : 640653450816 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Consider the sentence " Expert is the one who knows more and more about the less and less ". What is the size of the vocabulary V ?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

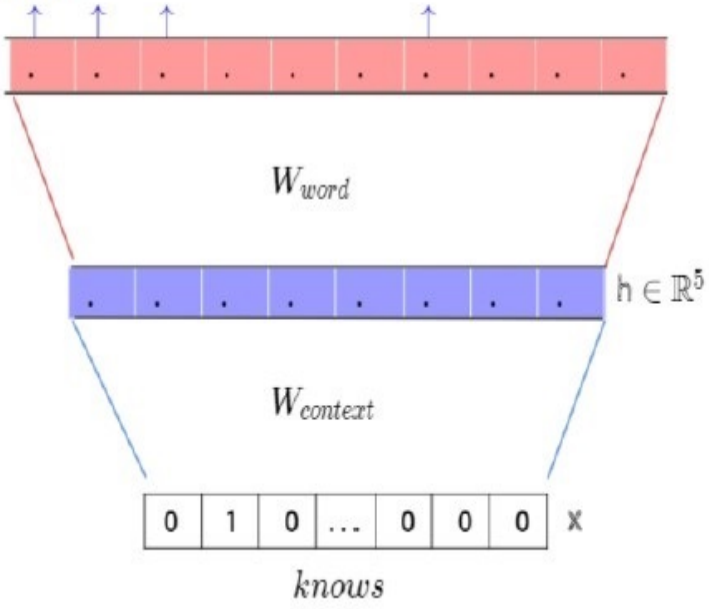
Sub-Section Number :	8
Sub-Section Id :	64065364749
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653450817 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (83 to 85)

Question Label : Comprehension

Suppose we use the CBOW (Continuous Bag of words) model shown below to find a distributed vector representation for all the words in the vocabulary. The size of the vocabulary $|V|$ is 20 and all the words in the vocabulary are one hot encoded (as a column vector) and fed as input to the network. The output layer uses softmax to produce the probability score for each word given the context. Here, $\mathbf{W}_{word}$ and $\mathbf{W}_{context}$ are weight matrices.



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 83 Question Id : 640653450818 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

How many number of parameters are there in the network (excluding bias)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

200

Question Number : 84 Question Id : 640653450819 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The word representation for the 3-rd word in the vocabulary corresponds to

Options :

6406531500410. ✔ 3-rd column of $\mathbf{W}_{\mathbf{context}}$

6406531500411. ✖ 3-rd row of $\mathbf{W}_{\mathbf{context}}$

6406531500412. ✖ 3-rd column of $\mathbf{W}_{\mathbf{word}}$

6406531500413. ✖ 3-rd row of $\mathbf{W}_{\mathbf{word}}$

Question Number : 85 Question Id : 640653450820 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

The prediction $\hat{y}_w$ is given by

$$\hat{y} = \frac{exp(u_c \cdot v_w)}{\sum_{w' \in V} exp(u_c \cdot v_{w'})}$$

where $u_c \cdot v_w$ is a dot product between a vector from $W_{context}$ and a vector from W_{word}. Then the statement that the neurons in the hidden layer do not have any non-linear activation function is

Options :

6406531500414. ✔ TRUE

6406531500415. ✖ FALSE

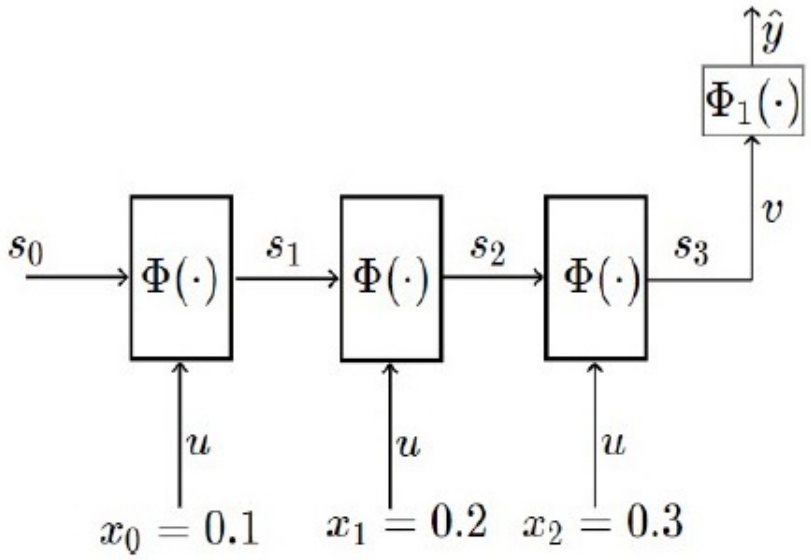
Sub-Section Number :	9
Sub-Section Id :	64065364750
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653450821 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (86 to 87)

Question Label : Comprehension

Consider a Recurrent Neural network shown below



where $\Phi(\cdot) = tanh(\cdot)$ and $\Phi_1(\cdot) = \sigma(\cdot)$(logistic function).The state vector is computed as follows,

$$s_t = tanh(ws_{t-1} + ux_t)$$

the initial weight values are as follows

$$u = 4, w = -2, v = 1, s = 0$$

and the true label $y = 1$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 86 Question Id : 640653450822 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the mean square error loss

$L = 0.5 * (\hat{y} - y)^2$of the network?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.03 to 0.04

Question Number : 87 Question Id : 640653450823 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Update the parameter v using plain SGD (stochastic gradient descent) algorithm with $\eta = 1$. Enter the updated value of v.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1.03 to 1.07

Sub-Section Number :	10
Sub-Section Id :	64065364751
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 88 Question Id : 640653450824 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following statements is(are) true about the vanilla RNN ?

Options :

6406531500418. ✖ It can’t have more than one hidden layer in it

6406531500419. ✔ It is prone to vanishing gradient problem

6406531500420. ✔ It is prone to exploding gradient problem

6406531500421. ✖ Vanishing gradient problem can be solved if ReLU activation is used across the network

Sw Testing

Section Id :	64065329295
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	18
Number of Questions to be attempted :	18
Section Marks :	100
Display Number Panel :	Yes
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065364752
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 89 Question Id : 640653450825 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DEGREE LEVEL:SOFTWARE TESTING"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?