

## Q10

Due 1 Apr at 5:30

Points 200

Questions 11

Available 18 Mar at 9:30 - 1 Apr at 5:30 14 days

Time limit 30 Minutes

## Instructions

You have 30 minutes to solve the quiz.

## Attempt history

|        | Attempt   | Time       | Score             |
|--------|-----------|------------|-------------------|
| LATEST | Attempt 1 | 14 minutes | 108.33 out of 200 |

Score for this quiz: **108.33** out of 200  
Submitted 1 Apr at 4:32  
This attempt took 14 minutes.

| Submission details: |                   |
|---------------------|-------------------|
| Time:               | 14 minutes        |
| Current score:      | 108.33 out of 200 |
| Kept score:         | 108.33 out of 200 |

Question 1

10 / 20 pts

Which of the following are true?

Correct!

☒ A high dropout value can lead to lot of fluctuations at the later stages of training in VA

Correct answer

☐ While updating the weights of one kernel, we must assume other kernel is constant

Correct!

☒ For gradient ascent we take positive value of the gradients

Correct answer

☐ Comparatively, at the midele of the training, learning rate can be much higher than at later stages

Question 2

5 / 20 pts

Which of the following are true?

Correct answer

☐ Even if we use momentum with SGD, the learning rate remains constant.

Correct!

☒ In SDG (academically), batch size is 1

Correct answer

☐ As the VA increases, we should reduce the learning rate, keeping batch size constant

Correct answer

☐ As the VA increases, we should increase the batch size keeping the learning rate constant

Question 3

0 / 20 pts

It is proven that if we add gradient perturbation (small noise in gradients), we can avoid hitting the problem of weights getting stuck in plateaus.  
Which of the following can have a similar effect:

Correct!

☐ ReLU

Correct!

☒ Patch Gaussian

You Answered

☒ L1/L2 regularization

Correct answer

☐ Dropout

Question 4

20 / 20 pts

Match the following: Left is the problem, right is the solution

Correct!

Weight Plateaus

Gaussian Noise

Correct!

UnderFitting

Remove Dropout

Correct!

OverFitting

Image Augmentation

Correct!

Slow Convergence

Increase LR

Other Incorrect Match Options:

- Reduce LR
- SGD
- CutOut

Question 5

20 / 20 pts

Assume that the value of a specific weight was 4.  
The derivative of the Loss Function w.r.t. this weight is 100  
If we used a learning rate of 0.01, after the backprop step, what would be the value of the new weight?

Correct!

3

Correct Answers

3  
3.0

Question 6

0 / 10 pts

We are working on a custom dataset, where we have 10 classes, but only 100 images for each class. Which Optimization Algorithm should provide us better results?

You Answered

☒ SGD

Correct answer

☐ Adam  
☐ SGD with Momentum  
☐ SGD with reducing learning rates

Question 7

0 / 10 pts

In the momentum algorithm, what would be the value of the  $v^{(1)}$  for the very first time?

You Answered

☒ Would be required to be calculated

Correct answer

☐ 0

Question 8

13.33 / 20 pts

What all would be the benefits of adding momentum term to SGD?

Correct answer

☐ Solving weight plateauing problem

Correct!

☒ Solving weight saddling problem

Correct!

☒ Faster Convergence

Question 9

10 / 20 pts

We "know" for sure that we are stuck in local minima. What all could we try?

Correct!

☒ Add image augmentation

Correct!

☒ Add momentum to our optimizer if we haven't done so yet

Correct answer

☐ Increase the learning rate

Correct answer

☐ Change the optimizer for sometime

Question 10

10 / 20 pts

We defined a network and then ran an LR finder on it.  
After a few tests on learning rates, we do not see any change in the loss function. What all could be wrong?

Correct!

☒ We haven't yet tried varied range of possible LRs

Correct answer

☐ Network is incapable of learning

Question 11

20 / 20 pts

Match the following

Correct!

SGD with Momentum

Most DNNs

Correct!

Adaptive Optimizers

GANs & RL

Other Incorrect Match Options:

- Object Detection Networks
- NLP

Quiz score: **108.33** out of 200