

S2-Solution

Due Jan 29 at 5:30am
Time Limit 45 Minutes

Points 200

Questions 9

Available Jan 22 at 9am - Jan 29 at 5:30am 7 days

Instructions

Instructions:

1. You have 45 minutes to attempt the S2-Solution.
2. Make sure you have played around with the COLAB FILE shared earlier. Here is the link [again](https://colab.research.google.com/drive/1uJZvJdi5VprOQHROtJIHy0mnY2afjNlx) (<https://colab.research.google.com/drive/1uJZvJdi5VprOQHROtJIHy0mnY2afjNlx>).
3. Once you start the solution, you cannot go back and re-attempt it
4. You will not find answers online, so please make sure you are ready for the quiz
5. For Multiple Answer Questions, ALL the answers must be correct to score any point
6. You will be training a model "during" this submission so make sure you are on your laptop.
7. Only 1 question will be shown at once
8. Once answered, question will be locked

Please make sure that you have good internet connection, else you will lose you data. There is only 1 attempt available for this quiz.

Attempt History

Attempt	Time	Score
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	Attempt	Time	Score
LATEST	Attempt 1	45 minutes	23.33 out of 200 *

* Some questions not yet graded

Score for this quiz: **23.33** out of 200 *

Submitted Jan 28 at 11:19pm

This attempt took 45 minutes.

Question 1

3.33 / 10 pts

What is torch?

Correct!



An open source machine learning framework that accelerates the path from research prototyping to production deployment.

Correct Answer



is a fictional superhero appearing in American comic books published by Marvel Comics.

Correct Answer



a portable battery-powered electric lamp.

Question 2

0 / 10 pts

What is the purpose of adding padding=1?

You Answered☒ To create equal size output after convolution with any kernel**Correct!**☒ To add 2 additional pixels in x and y rows for convolution☐ To provide cushioning to the channels before kernel hits with a great force☐ To increase the kernel size by 2px in x and y columns**Question 3****5 / 10 pts**

What is that -1 in output shape when we call `summary(model, input_size=(1, 28, 28))`?

Correct!☒ It refers to the batch size**Correct Answer**☐ It refers to the dimension "outside" what might be available of `input_size`☐ it refers to the z-axis☐ It refers to the z-axis of the kernels**Question 4****5 / 10 pts**

What is CUDA?

Correct!



CUDA is a parallel computing platform and application programming interface model created by Nvidia. It allows software developers and software engineers to use a CUDA-enabled graphics processing unit for general purpose processing – an approach termed GPGPU



CUDA is a garbage collector



An end-to-end open source machine learning platform.

Correct Answer



Something without which my journey in ML would be useless! :(

Question 5

6.67 / 10 pts

What is a Tensor?

Correct!



A tensor is a container which can house data in N dimensions.



A tensor is a matrix

Correct!



Tensor is NOT a matrix, as matrices are specifically 2D, where as Tensors can be nD

Correct Answer



is an algebraic object that describes a linear mapping from one set of algebraic objects to another

Question 6**0 / 10 pts**

What is 0.1307 and 0.3081 in transforms.Normalize?

Correct Answer☐ That's mean and std of the complete dataset☐ I don't know, and I don't care!☐ that's std and mean of the dataset**You Answered**☒ That's mean and std of the training set**Question 7****3.33 / 10 pts**

What is the use of torch.no_grad()?

Correct Answer☐ To perform inference, but without training**Correct Answer**☐ To make sure test data does not "leak" into the model**Correct!**☒ To perform inference without gradient calculation

☐ To tell us that knowing just this function won't help us get graduation degree

Question 8**Not yet graded / 70 pts**

What the hell is wrong with this model? Generally in 1 epoch we should be able to get 95%+, but here we do not? Explain according to you what is wrong with the model. 0 Points if you miss the main point.

Your Answer:

Size of image being passed is 28x28x1. Global Receptive field is 34x34 which is more than the size of image. Last two convolutions are unnecessary.

`torch.no_grad()` is restricting it to use earlier gradient values

Question 9**Not yet graded / 60 pts**

Only 1 change is required in this model such that it gets up to 97% within 1 epoch!

What is that 1 change?

Your Answer:

remove `torch.no_grad()`

Quiz Score: **23.33** out of 200