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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 31 DISCUSSIO..

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 31

Topic #: 1

[All Professional Machine Learning Engineer Questions]

You need to train a computer vision model that predicts the type of government ID present in a given image using a GPU-powered virtual machine on Compute

Engine. You use the following parameters:

- **□** Optimizer: SGD
- □ Image shape = 224-224
- ⇒ Batch size = 64
- ⇒ Epochs = 10
- □ Verbose =2

During training you encounter the following error: ResourceExhaustedError: Out Of Memory (OOM) when allocating tensor. What should you do?

- A. Change the optimizer.
- B. Reduce the batch size.
- C. Change the learning rate.
- D. Reduce the image shape.

Show Suggested Answer

by A maartenalexander at June 22, 2021, 12:21 p.m.

Comments	
T	pe your comment
S	ubmit
	■ maartenalexander Highly Voted ** 3 years, 4 months ago
	B. I think you want to reduce batch size. Learning rate and optimizer shouldn't really impact memory utilisation. Decreasing image size (A) would work, but might be costly in terms final performance
	upvoted 23 times
	≜ guruguru (Highly Voted de 3 years, 3 months ago
	B. https://stackoverflow.com/questions/59394947/how-to-fix-resourceexhaustederror-oom-when-allocating-tensor/59395251#:~:text=OOM%20stands%20for%20%22out%20of,in%20your%20Dense%20%2C%20Conv2D%20layers
	upvoted 9 times
	PhilipKoku Most Recent ② 5 months ago
	Selected Answer: B
	B) Reduce the batch size.
	upvoted 1 times
	SamuelTsch 1 year, 4 months ago
	Selected Answer: B
	no doubt went to B
	upvoted 1 times
	M25 1 year, 6 months ago
	Selected Answer: B
	Went with B
	SergioRubiano 1 year, 7 months ago
	Selected Answer: B B is correct
	♣ Fatiy 1 year, 8 months ago
	Selected Answer: B
	By reducing the batch size, the amount of memory required for each iteration of the training process is reduced
	♣ Fatiy 1 year, 8 months ago
	Selected Answer: A
	Creating alerts to monitor for skew in the input data can help to detect when the distribution of the data has changed and the model's performance is affected. Once a skew is detected, retraining the model with the new data can improve its performance.
	upvoted 1 times
	□ ♣ Fatiy 1 year, 8 months ago
	Sorry it's not the response for this question. it's the response for the previous question.
	upvoted 1 times
	♣ John_Pongthorn 1 year, 8 months ago
	Selected Answer: B
	Reduce the image shape != Reduce the image Size.
	upvoted 1 times
	seifou 1 year, 11 months ago
	The answer is B
	Since you are using an SGD, you can use a batch size of 1 ref: https://stackoverflow.com/questions/63139072/batch-size-for-stochastic-gradient-descent-is-length-of-training-data-and-

Selected Answer: B

upvoted 2 times

■ Mohamed_Mossad 2 years, 4 months ago

not-1

to fix memory overflow you need to reduce batch size also reduce input resolution is valid but reducing image size can harm model performance , so answer is B

upvoted 3 times

alphard 2 years, 11 months ago

B is my option. But, D seems not wrong.

Reducing batch size or reducing image size bot can reduce memory usage. But, the former seems much easier.

upvoted 2 times

■ kaike_reis 2 years, 11 months ago

B is correct.

Letter D can be used, as we reduced the image size but this will directly impact the model's performance. Another point is that when doing this, if you are using a model via Keras's `Functional API` you need to change the definition of the input and also apply pre-processing on the image to reduce its size. In other words: much more work than the letter B.

upvoted 3 times

■ mousseUwU 3 years ago

B is correct, it uses less memory.

A works too but depending on what you need you will loose perfomance (just like maartenalexander said) so I think it is not recommended.

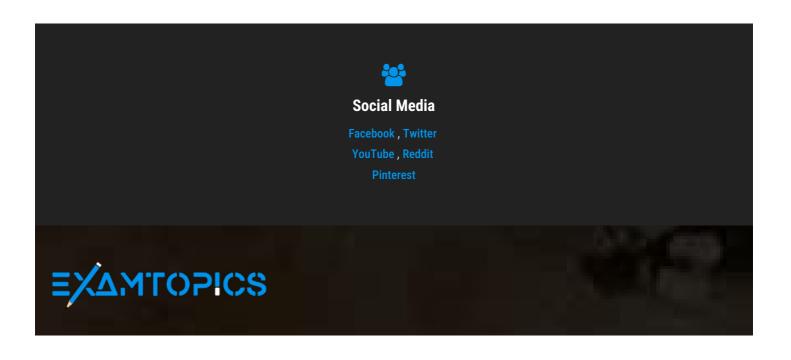
upvoted 3 times

george_ognyanov 3 years, 1 month ago

Initially, I though D. ,decreasing image size, would be the correct one, but now that I am reviewing the test I think maartenalexander is correct in saying reduced image size might decrease final performance, so I'd go with B eventually.

upvoted 2 times

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