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

Comments

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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 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 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

upvoted 2 times

SergioRubiano 1 year, 7 months ago

Selected Answer: B

B is correct

upvoted 1 times

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

upvoted 1 times

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-not-1

upvoted 2 times

Mohamed_Mossad 2 years, 4 months ago

Selected Answer: B

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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