Discussion Forums

Week 1

SUBFORUMS

All

Assignment: Practice Questions

Discussing important concepts

← Week 1

VZ

Quiz 1 - partically disagree with last question

Vladislav Zablotsky Week 1 · 3 days ago

I do not agree with next notion.

>Increasing the size of a neural network generally does not hurt an algorithm's performance, and it may help significantly.

Because it depends on dataset_size/NN_size

If we will have big size of NN relative to dataset that we will face overlearning and this will decrease performance.

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RL

Raimond Laptik · a day ago

Keep in mind, that various regularizing techniques (L1, L2, Dropout, Noise...) will keep bigger network from overfitting.

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RR

Rinat Rosenberg-Kima · 2 days ago

adding my thoughts to this interesting question... I see your point, but agree that the word "generally" plays an important role here as generally="in disregard of specific instances and with regard to an overall picture generally speaking" (from Merriam-Webster). So even though you are correct, with the word "generally" in the first part of the sentence and the word "may" in the second part, this sentence is (generally ;) correct.

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TK

Tsui Hin Kan · 2 days ago

Sharing my thoughts:

I think complex model like neural network shall not be deployed if the sample size is very small in day one.

I understand the sample size is critical that's why the sentence says "generally" :).

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JD

Jeremiah Davis · 2 days ago · Edited

Just my thoughts...

The question confused me but I got it correct, because I answered from the data in the class but understanding it is a different thing altogether. I am new to this but as I am wrapping my brain around scaling in this architecture, I think I understand it. I am associating this concept to processor cores, and adding more cores. If it takes the CPU 0.005 seconds to add 1+1 adding more cores is not going to increase (EDIT OR DECREASE) the time it takes to make that calculation but it would allow the operation overall to perform better because the other cores can focus on other tasks.

So I think that it refers to the algorithms baseline performance measuring the neurons calculation time not the overall time of training per cyclic iteration. And I think this means adding more data does not impact the neurons ability in a positive or negative fashion BUT adding more neurons I.E. increasing the size of the neural network and more data decreases training time overall. For example: 1 neuron executes its task in 1.5 second adding more data doesn't increase that execution time per neuron so even if you add more data it would not impact the performance of the ALGORITHM at the neuron level, because it can only do that one task, but adding more neurons would increase the performance because it can digest more of the same tasks. This is uncharted area for me but I THINK this sound right.

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VV

Vassilios Vonikakis · 2 days ago

Usually, the term "performance of a neural network" refers to its ability to generalise and predict correctly new unseen inputs. It usually does not refer to its execution time.

4 Upvotes

ZZ

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Reply

VV

Vassilios Vonikakis · 2 days ago

I totally agree. I had the same thinking and I posted the same question in the forum just now. Large size networks with small size datasets leads to overfitting. Any other opinions?

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Claude Coulombe · 2 days ago · Edited

I suspect an error in the writing of the question. But definitely, if you increase the size of the NN you should increase the capacity / variance and consequently you will eventually overfit / overlearn. Or they have to specify that the training data will increase with no limit.

0 Upvotes

VT

varun tomar · 2 days ago

Yes, I agree when they refer to large size networks they 'generally' mean large data sets as well (it is intuitive). They even mentioned it that with smaller data sets the performance of all types of NN (small, large,medium) will be similar and in those cases it will depend on how well you train the model, in other words your modelling skills.

0 Upvotes

ZZ

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ZZ

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