EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 13 DISCUSSIO..

Actual exam question from Google's Professional Machine Learning Engineer
Question #: 13
Topic #: 1
[All Professional Machine Learning Engineer Questions]

You have trained a deep neural network model on Google Cloud. The model has low loss on the training data, but is performing worse on the validation data. You want the model to be resilient to overfitting. Which strategy should you use when retraining the model?

A. Apply a dropout parameter of 0.2, and decrease the learning rate by a factor of 10.

B. Apply a L2 regularization parameter of 0.4, and decrease the learning rate by a factor of 10.

C. Run a hyperparameter tuning job on AI Platform to optimize for the L2 regularization and dropout parameters.

D. Run a hyperparameter tuning job on AI Platform to optimize for the learning rate, and increase the number of neurons by a factor of 2.

Show Suggested Answer

by [deleted] at *June 2, 2021, 9:56 p.m.*

Comments

chohan Highly Voted 3 years, 4 months ago

Should be C
https://machinelearningmastery.com/introduction-to-regularization-to-reduce-overfitting-and-improve-generalization-error/

upvoted 26 times

inder0007 Highly Voted 3 years, 5 months ago

increasing the size of the network will make the overfitting situation worse

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fragkris Most Recent 11 months, 1 week ago

Selected Answer: C

Voted C

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Sum_Sum 11 months, 3 weeks ago

Selected Answer: C

A,B have very specific numbers which doesn't gurantee success
C is best
D - increases the size - which is not helping with overfitting

upvoted 2 times

harithacML 1 year, 4 months ago

Selected Answer: C

Req: make model resilient

A. Apply a dropout parameter of 0.2, and decrease the learning rate by a factor of 10. : Might / might not work . But may not find optimal parameter set since it uses random values
B. Apply a L2 regularization parameter of 0.4, and decrease the learning rate by a factor of 10. : Might / might not work . But may not find optimal parameter set since it uses random values
C. Run a hyperparameter tuning job on AI Platform to optimize for the L2 regularization and dropout parameters. : l2 and dropout are regularisation method which would work. Let AI find the optimal solution on how extend these parameters should regularise. Yes this would work.
D. Run a hyperparameter tuning job on AI Platform to optimize for the learning rate, and increase the number of neurons by a factor of 2 : AIplatform would do but adding neurons would make network nore complex. So we can eliminate this option.

upvoted 3 times

ashu381 1 year, 5 months ago

Selected Answer: C

It should be C as regularization (L1/L2), early stopping and drop out are some of the ways in deep learning to handle overfitting. Other options have specific values which may or may not solve overfitting as it depends on specific use case.

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M25 1 year, 6 months ago

Selected Answer: C

Went with C

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wish0035 1 year, 10 months ago

Selected Answer: C

ANS: C

A and B are random values, why they choose that values?
D could increase even more overfitting since you're using a more complex model.

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EFIGO 1 year, 11 months ago

Selected Answer: C

We don't know the optimum values for the parameters, so we need to run a hyperparameter tuning job; L2 regularization and dropout parameters are great ways to avoid overfitting.
So C is the answer

upvoted 1 times

GCP72 2 years, 2 months ago

Selected Answer: C

Correct answer is "C"

upvoted 1 times

Mohamed_Mossad 2 years, 4 months ago

Selected Answer: C

Selected Answer: C

- by options eliminations C,D are better than A,D (more automated , scalable)
- between C,D C is better as in D "and increase the number of neurons by a factor of 2" will make matters worse and increase overfitting

upvoted 1 times

Mohamed_Mossad 2 years, 4 months ago

also in A,D mainly learning rate has no direct relation with overfitting

upvoted 1 times

morgan62 2 years, 7 months ago

Selected Answer: C

C for sure

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giaZ 2 years, 8 months ago

Selected Answer: C

Best practice is to let a AI Platform tool run the tuning to optimize hyperparameters. Why should I trust values in answers A or B?? Plus L2 regularization and dropout are the way to go here.

upvoted 2 times

caohieu04 2 years, 8 months ago

Selected Answer: C

Community vote

upvoted 2 times

wences 2 years, 9 months ago

Selected Answer: C

it is the logical ans

upvoted 3 times

stefant 2 years, 9 months ago

Selected Answer: C

regularization and dropout

upvoted 3 times

NamitSehgal 2 years, 10 months ago

Increasing Neurons or layers / network will increase overfitting, it is good for under fitting. C should be fine.

upvoted 2 times

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