deeplearning.ai
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Week 2

Convolutional Neural Networks in TensorFlow

Week 2

Discuss this week's modules here.

168 threads · Last post 10 hours ago

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Augmentation: A technique to avoid overfitting

Laurence Moroney

You've heard the term overfitting a number of times to this point. Overfitting is simply the concept of being over specialized in training -- namely that your model is very good at classifying what it is trained for, but not so good at classifying things that it hasn't seen. In order to generalize your model more effectively, you will of course need a greater breadth of samples to train it on. That's not always possible, but a nice potential shortcut to this is Image Augmentation, where you tweak the training set to potentially increase the diversity of subjects it covers. You'll learn all about that this week!

Less

Augmentation

Video: A conversation with Andrew Ng 2 min — Resume

Reading: Image Augmentation 10 min

Video: Introducing augmentation 2 min

Reading: Start Coding... 10 min

Video: Coding augmentation with ImageDataGenerator 3 min

Reading: Looking at the notebook 10 min

Video: Demonstrating overfitting in cats vs. dogs 1 min

Reading: The impact of augmentation on Cats vs. Dogs 10 min

Video: Adding augmentation to cats vs. dogs 1 min

Reading: Try it for yourself! 10 min

Video: Exploring augmentation with horses vs. humans 1 min

Reading: What have we seen so far? 10 min

Quiz: Week 2 Quiz 8 questions

Video: Week 2 Wrap up 37 sec

Weekly Exercise- Full cats vs. dogs using augmentation

Lab: Exercise 2 - Cats vs. Dogs using augmentation 1h

Programming Assignment: Exercise 2 - Cats vs. Dogs using augmentation 3h Due Nov 16, 1:59 AM CST

Optional: Ungraded Google Colaboratory environment

Ungraded External Tool: Exercise 2 - Cats vs. Dogs using augmentation 1h