Nanoquiz Week 8

The questions below are due on Thursday April 05, 2018; 09:50:00 AM.

Nanoquiz Instructions

Nanoquizzes are just like any other tutor exercise, except that they are timed, and that some questions allow a limited number of submissions. When the timer hits zero, you will be prevented from making any further submissions to the nanoquiz, and the answers will be displayed, so **please make sure you have submitted something before that occurs**.

Note that you are free to use any materials you want (electronic or otherwise, including notes, calculators, Python, and Wikipedia) during the nanoquiz, but you are **not** allowed to converse with other humans (including through text message, email, etc).

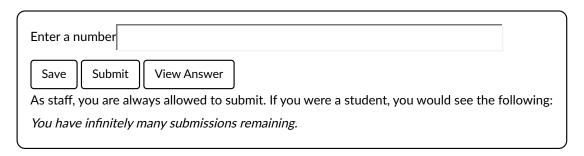
Nanoquiz

Consider an 8 pixel by 8 pixel square image and the following convolutional architecture.

- Input: 64 input values representing 8 by 8 array
- Layer 1: 4 filters with 3 pixel by 3 pixel receptive field applied with a stride of 1
- Layer 2: Max-pooling with filter size 2 x 2 and stride 2
- Layer 3: 4 filters with (3 pixel by 3 pixel by 4 channels) receptive field applied with a stride of 1.
- Layer 4: Max-pooling with filter size 2 x 2 and stride 2

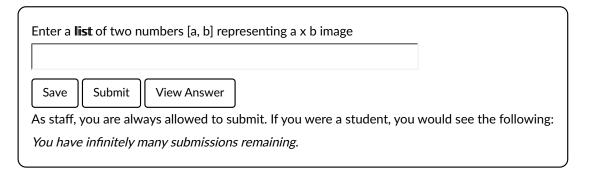
Assume filter inputs that fall outside of the image are treated as zero (zero-padding). Remember that each filter output produces an output channel.

1) How many weights (including biases) are there in Layer 1?

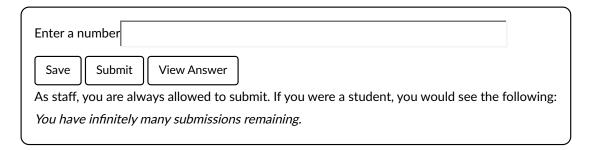


2) We can think of the output of layer 1 as being 4 images (each one a "channel"). How big is each image?

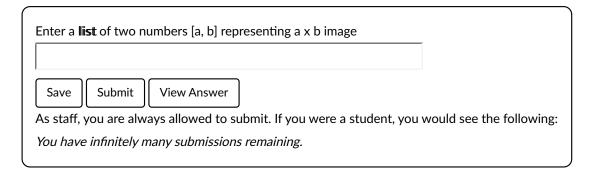
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3) How many pixels in the original image contributed to the "typical" output pixel from layer 1 (one sufficiently away from the edges)?



4) We can think of the output of layer 2 as being 4 images. How big is each one?

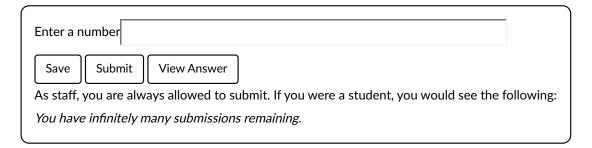


5) How many pixels in the original image contributed to the "typical" output pixel from layer 2 (one sufficiently away from the edges)?

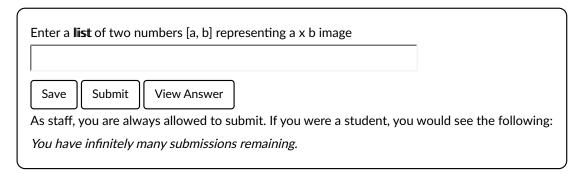
Enter a number	
Save Submit View Answer As staff, you are always allowed to submit. If you were a student, you would see the following the student of the st	llowing:
You have infinitely many submissions remaining.	

6) How many weights are there in layer 3?

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7) How big is each image output from layer 4?



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