Congratulations! You passed!

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Go to next item

1. Which notation would you use to denote the 4th layer's activations when the input is the 7th example from the 3rd mini-batch?

1 / 1 point

Expand

✓ **Correct**

Yes. In general $a^{[l]\{t\}(k)}$ denotes the activation of the layer l when the input is the example k from the mini-batch t.

2. Suppose you don't face any memory-related problems. Which of the following make more use of vectorization.

0 / 1 point

Expand

⊗ **Incorrect**

No: If no memory problem is faced, batch gradient descent processes all of the training set in one pass, maximizing the use of vectorization.

3. Which of the following is true about batch gradient descent?

1 / 1 point

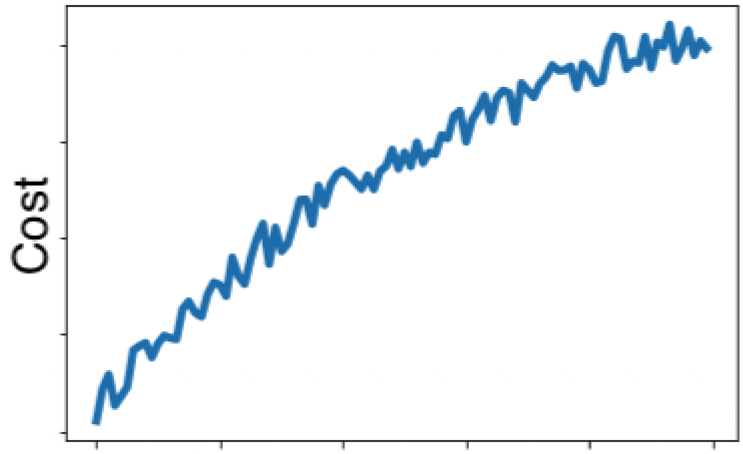
Expand

✓ **Correct**

Correct. When using batch gradient descent there is only one mini-batch thus it is equivalent to batch gradient descent.

4. While using mini-batch gradient descent with a batch size larger than 1 but less than m the plot of the cost function J looks like this:

1 / 1 point



Which of the following do you agree with?

Expand

Correct

Yes. The cost is larger than when the process started, this is not right at all.

5. Suppose the temperature in Casablanca over the first two days of March are the following: **1 / 1 point**

March 1st: $\theta_1 = 10^\circ \text{ C}$

March 2nd: $\theta_2 = 25^\circ \text{ C}$

Say you use an exponentially weighted average with $\beta = 0.5$ to track the temperature: $v_0 = 0, v_t = \beta v_{t-1} + (1-\beta)\,\theta_t$. If v_2 is the value computed after day 2 without bias correction, and $v_2^{\text{corrected}}$ is the value you compute with bias correction. What are these values?

⤢ **Expand**

✓ **Correct**

Correct. $v_2 = \beta v_{t-1} + (1-\beta)\,\theta_t$ thus $v_1 = 5, v_2 = 15$. Using the bias correction $\frac{v_t}{1-\beta^t}$ we get $\frac{15}{1-(0.5)^2} = 20$.

6. Which of the following is true about learning rate decay? **1 / 1 point**

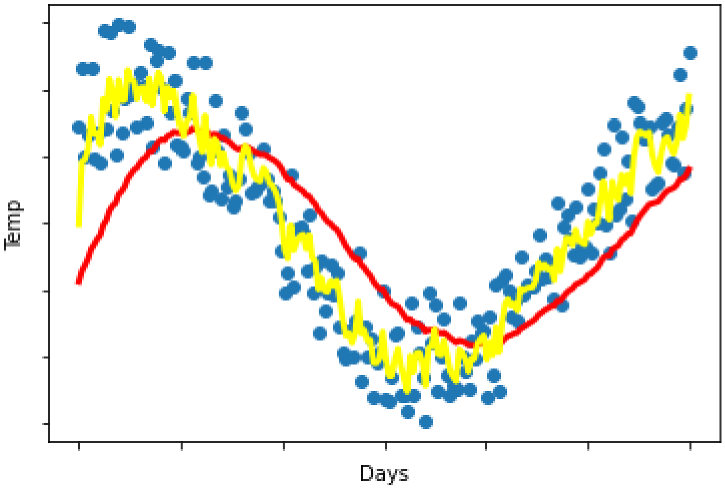
↙↗ **Expand**

✓ **Correct**

Correct. Reducing the learning rate with time reduces the oscillation around a minimum.

7. You use an exponentially weighted average on the London temperature dataset. You use the following to track the temperature: $v_t = \beta v_{t-1} + (1 - \beta)\theta_t$. The yellow and red lines were computed using values $beta_1$ and $beta_2$ respectively. Which of the following are true?

1 / 1 point



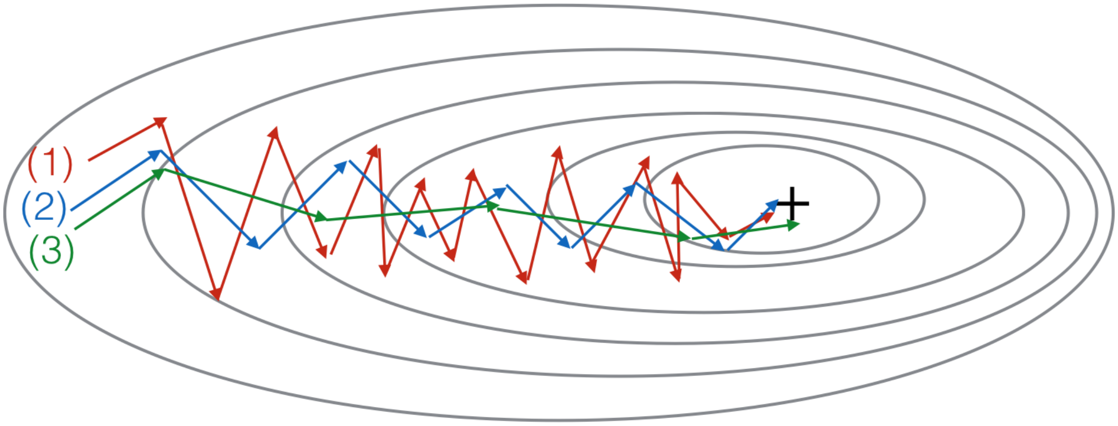
Expand

Correct

Correct. $\beta_1 < \beta_2$ since the yellow curve is noisier.

8. Consider this figure:

0 / 1 point



These plots were generated with gradient descent; with gradient descent with momentum (β = 0.5); and gradient descent with momentum (β = 0.9). Which curve corresponds to which algorithm?

Expand

Incorrect

9. Suppose batch gradient descent in a deep network is taking excessively long to find a value of the parameters that achieves a small value for the cost function $\mathcal{J}(W^{[1]}, b^{[1]}, ..., W^{[L]}, b^{[L]})$. Which of the following techniques could help find parameter values that attain a small value for $\mathcal{J}$? (Check all that apply)

1 / 1 point

⤢ **Expand**

✓ **Correct**

Great, you got all the right answers.

10. Which of the following statements about Adam is ***False***?

1 / 1 point

↙↗ **Expand**

✓ **Correct**