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1. 1 / 1 point

$$J(\vec{w}, b) = \frac{1}{m}\sum_{i=1}^{m} L\left(f_{\vec{w},b}\left(\vec{x}^{(i)}\right), y^{(i)}\right)$$

In this lecture series, "cost" and "loss" have distinct meanings. Which one applies to a single training example?

- [x] Loss

Correct
In these lectures, loss is calculated on a single training example. It is worth noting that this definition is not universal. Other lecture series may have a different definition.

- [ ] Cost
- [ ] Both Loss and Cost
- [ ] Neither Loss nor Cost

2. 1 / 1 point

Simplified loss function

$$L\left(f_{\vec{w},b}\left(\vec{x}^{(i)}\right), y^{(i)}\right) = \begin{cases} -\log\left(f_{\vec{w},b}\left(\vec{x}^{(i)}\right)\right) & \text{if } y^{(i)} = 1 \\ -\log\left(1 - f_{\vec{w},b}\left(\vec{x}^{(i)}\right)\right) & \text{if } y^{(i)} = 0 \end{cases}$$

$$L\left(f_{\vec{w},b}\left(\vec{x}^{(i)}\right), y^{(i)}\right) = -y^{(i)}\log\left(f_{\vec{w},b}\left(\vec{x}^{(i)}\right)\right) - \left(1 - y^{(i)}\right)\log\left(1 - f_{\vec{w},b}\left(\vec{x}^{(i)}\right)\right)$$

For the simplified loss function, if the label $y^{(i)} = 0$, then what does this expression simplify to?

- ○ $\log(1 - f_{\mathbf{w},b}(\mathbf{x}^{(i)})) + log(1 - f_{\mathbf{w},b}(\mathbf{x}^{(i)}))$
- ○ $-\log(1 - f_{\mathbf{w},b}(\mathbf{x}^{(i)})) - log(1 - f_{\mathbf{w},b}(\mathbf{x}^{(i)}))$
- ◉ $-\log(1 - f_{\mathbf{w},b}(\mathbf{x}^{(i)}))$
- ○ $\log(f_{\mathbf{w},b}(\mathbf{x}^{(i)}))$

Correct
When $y^{(i)} = 0$, the first term reduces to zero.