1 / 1 point

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

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

1 / 1 point

Simplified loss function

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

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

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

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

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