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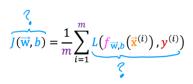
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1/1 point

Practice quiz: Cost function for logistic regression

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1.



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

✓ 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

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

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

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