≡   Minimizing Error Funct...

DLND REG Minimizing Error...

▶

NOTE: From 2:22 onward, the slide title should say "Mean Absolute Error".

Development of the derivative of the error function

Notice that we've defined the squared error to be

$$Error = \frac{1}{2}(y - \hat{y})^2.$$

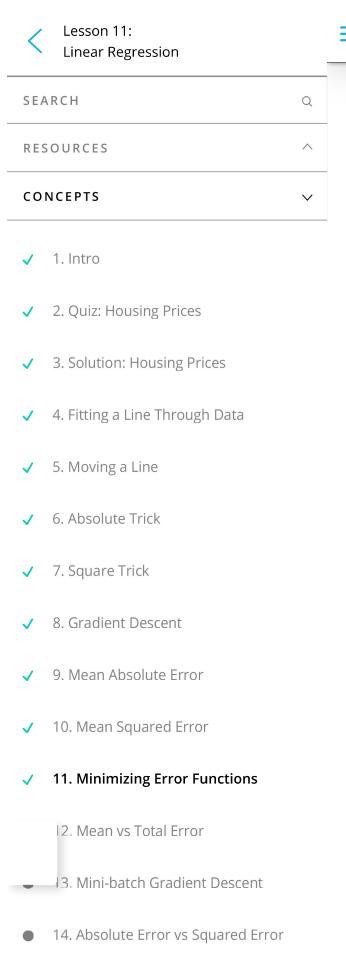Also, we've defined the prediction to be

$$\hat{y} = w_1 x + w_2.$$

So to calculate the derivative of the Error with respect to w_1 , we simply use the chain rule:

$$\frac{\partial}{\partial w_1} Error = \frac{\partial Error}{\partial \hat{y}} \frac{\partial \hat{y}}{\partial w_i}.$$

The first factor of the right hand side is the derivative of the Error with respect to the prediction $\hat{y}$, which is $-(y - \hat{y})$.

The second factor is the derivative of the prediction with respect to w_1, which is simply x.

Therefore, the derivative is

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SEARCH   🔍

RESOURCES   ⌃

CONCEPTS   ⌄

✓   1. Intro

✓   2. Quiz: Housing Prices

✓   3. Solution: Housing Prices

✓   4. Fitting a Line Through Data

✓   5. Moving a Line

✓   6. Absolute Trick

✓   7. Square Trick

✓   8. Gradient Descent

✓   9. Mean Absolute Error

✓   10. Mean Squared Error

✓   **11. Minimizing Error Functions**

  12. Mean vs Total Error

●   13. Mini-batch Gradient Descent

●   14. Absolute Error vs Squared Error

●   15. Linear Regression in scikit-learn