Tricks

Variables:

$\alpha=$ *Learning Rate*

$p=$ *Horiontal Coordinate x*

$q=$ *Vertical Coordinate y*

Absolute Trick

$y=mx+b$

$y=(m+p\alpha)x+b\alpha$

Square Trick

Key Differences:

> - We add the distance between Vertical Coordinates.
> - We solve for y to find $q^{\prime}$.

$q-q^{\prime}=$ *Distance between Vertical Coordinates*

$y=(m + p\alpha(q-q^{\prime}))x+ba(q-q^{\prime})$

Regression

Mean Absolute Deviations (Error)

$m=$ *Number of Points in the Dataset*

$y=$ *Actual Value*

$\hat{y}=$ *Predicted Value*

$\sum_{i=1}^m|y-\hat{y}|=$ *Deviations (Error)*

$\frac{\sum_{i=1}^m|y-\hat{y}|}{m}=$ *Mean Absolute Deviations (Errors)*

Mean Squared Deviations (Error)

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

$\frac{\sum_{i=1}^{m}(y-\hat{y})^2}{2m}=$ *Mean Squared Deviations (Errors)*

Derivative of the Error with Respect to the prediction