#data #machinelearning A machine learning algorithm is iterative - it starts with some initial guess an modifies the parameters of the model until the overall loss (function) produces the minimal possible error. This means usually until convergence, i. e. that the error from 1 run to the other changes either very slightly or very slowly.

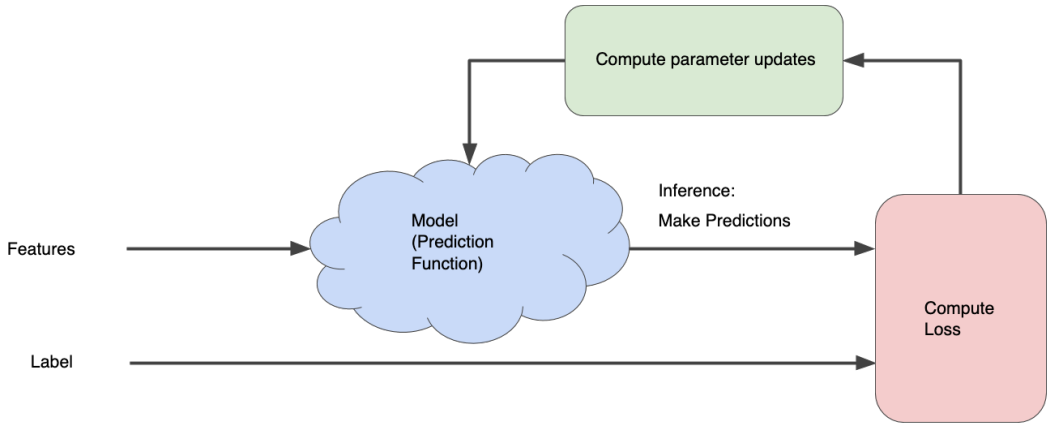

Figure 1: 815f73eb5c2642786cba64e579389fd3.png

1 Loss

Measures how far the predictions of the model are from the real values (label, target), i. e. how "bad" the model is. To determine this value, a *loss function* needs to be defined. In case of linear regression, the most common function is *mean squared error* and in the case of logistic regression it's *log loss*

squared loss (error) (L_2 loss)

$$y...label, \hat{y}...predictionloss_{squared} = (y - \hat{y})^2$$

* amplifies the influence of outliers because if squaring (unlike L_1 loss)

mean squared error

$$MSE = \frac{1}{N} \sum_{i=1...N} loss_{squared_i} N...\text{number of observations}$$

(“Machine Learning Crash Course” n.d.)

“Machine Learning Crash Course.” n.d. Google Developers. Accessed February 8, 2020. https://developers.google.com/machine-learning/crash-course.