Classifiers

Logistic Regression

Parameters

* Penalty
* Dual
* Tol
* C
* Fit intercept
* Intercept scaling
* Class weight
* Random state
* Solver
* Max iter
* Multi class
* Verbose
* Warm start
* N jobs

Attributes

* Coef
* Intercept
* N iter

Support Vector Machine

Gradient boosting

**Boundaries in the F-beta score**

Note that in the formula for *F*​*β*​​ score, if we set *β*=0, we get

*F*​0​​=(1+0​2​​)⋅​0⋅Precision+Recall​​Precision⋅Recall​​=​Recall​​Precision⋅Recall​​=Precision. Therefore, the minimum value of *β* is zero, and at this value, we get the precision.

Now, notice that if N is really large, then

*F*​*β*​​=(1+*N*​2​​)⋅​*N*​2​​⋅Precision+Recall​​Precision⋅Recall​​=​​1+*N*​2​​​​*N*​2​​​​Precision+​1+*N*​2​​​​1​​Recall​​Precision⋅Recall​​.

As *N* goes to infinity, we can see that ​1+*N*​2​​​​1​​ goes to zero, and ​1+*N*​2​​​​*N*​2​​​​ goes to 1.

Therefore, if we take the limit, we have

lim​*N*→∞​​*F*​*N*​​=​1⋅Precision+0⋅Recall​​Precision⋅Recall​​=Recall.

Thus, to conclude, the boundaries of beta are between 0 and ∞.

* If *β*=0, then we get **precision**.
* If *β*=∞, then we get **recall**.
* For other values of *β*, if they are close to 0, we get something close to precision, if they are large numbers, then we get something close to recall, and if *β*=1, then we get the **harmonic mean** of precision and recall.