Logistic regression

→ Classification problems

Hyperparameters:
(model performance)

- Penalty
- C
- L1_ratio

- solver
- max_iter
- tol
- warm_start

- multiclass

- fit_intercept
- intercept_scaling
- class_weight

More hyperparameters:

(computational choices)

- Random_state: int
  reproducibility

- Verbose: int
  Output level

- n-jobs: int
  parallel execution

TOTAL: 14 !

Penalty: str, default: l2

- l2: bias/variance tradeoff

- l1 :dimensionality reduction

- Elasticnet: combination of l1,l2

- None

C: float, default: 1.0
→ Grid search

l1_ratio: float, default: 1.0
→ Grid search

Multiclass: str, default: auto

- ovn: a binary problem is fit for each label.

- multinomial: the loss minimised is the multinomial loss fit across the entire probability distribution, even when the data is binary. unavailable when solver=liblinear

- Auto: ovl if binary or liblinear, else multinomial

Solver: str,
        default: lbfgs

- liblinear
- lbfgs
- neuton-cg
- sag
- saga

tol: float,
        default: 0.0001

max_iter: int,
        default: 100

liblinear:	Library for Large Linear Classification. Moves toward the minimum in one direction at a time. → "one-vs-rest" for multiclass
neuton-cg:	Exact Hessian (2nd derivative) → SLOW
l**bfgs**:	Limited-memory BFGS (Broyden−Fletcher−Goldfarb − Shanno). Approximates 2nd derivatives
sag:	Stochastic Average Gradient descent → Fast, NEEDS SCALED DATA!! (reduce tol?)
saga:	Extension of sag that also allows for L1 regularization (the only one...).