**1.K-fold cross-validation：**

K-fold cross-validation, the initial sample is divided into K sub-samples, a single sub-sample is retained as the data for the verification model, and the other K-1 samples are trained. The cross-validation is repeated K times, each sub-sample is verified once, and the average is K. The advantage of this method is that it repeatedly uses randomly generated sub-samples for training and verification, and each result is verified once.

The closer the cv\_result’s result is to 1, the better the model.

**2. Hyper-Parameter Tuning: Grid Search**

Grid search determines the optimal value by finding all points in the search range.

The resulting model is returned as a result, and a model can be generated from the training data by calling fit on the results of the search.