**K-NEAREST NEIGHBORS**

(KNN) ALGORITHM

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In pattern recognition, the k-nearest neighbors’ algorithm (k-NN) is a non-parametric method used for classification and regression. In both cases, the input consists of the k closest training examples in the feature space. The output depends on whether k-NN is used for classification or regression:

* In k-NN classification, the output is a class membership. An object is classified by a plurality vote of its neighbors, with the object being assigned to the class most common among its k nearest neighbors (k is a positive integer, typically small). If k = 1, then the object is simply assigned to the class of that single nearest neighbor.
* In k-NN regression, the output is the property value for the object. This value is the average of the values of k nearest neighbors.



