Common Terms in Machine Learning
机器学习中的常用术语

1. Loss Function

A loss function in machine learning measures how far the model's predictions are from the actual values. By making this number smaller, we can improve the model's accuracy. Different types of loss functions are used for different problems, as different loss functions can reflect different types of prediction errors or satisfy different optimization needs.(Wikipedia)

1.损失函数

损失函数损失函数是衡量模型预测结果与实际结果之间差异程度的函数。我们的目标是通过优化模型参数来最小化这个损失值，从而提高模型预测的精确度。不同的模型和任务可能需要使用不同的损失函数，因为不同的损失函数能够反映不同类型的预测误差或满足不同的优化需求。

2. Hyper-plane

A hyperplane can be thought of as a flat, n-1 dimensional subset of an n-dimensional space. For instance, in a three-dimensional space, a hyperplane is a two-dimensional plane. In two dimensions, it's simply a line. The power of hyperplanes lies in their ability to divide a space into two half-spaces, which is incredibly useful in classification tasks, optimization problems, and more.（Wikipedia）

2. 超平面

超平面可以看作是一个 n 维空间的 n-1 维平面子集。例如，在三维空间中，超平面是一个二维平面。在二维空间中，它只是一条直线。超平面的强大之处在于它能将空间划分为两个半空间，这在分类任务、优化问题等方面非常有用。

3. Feature Vector

A feature vector is an ordered list of numerical properties of observed phenomena. It represents input features to a machine learning model that makes a prediction. Humans can analyze qualitative data to make a decision.(iguazio)

3. 特征向量

特征向量是观察到的现象的数字特性的有序列表。它代表了机器学习模型的输入特征，从而做出预测。人类可以通过分析定性数据做出决策。

4. Normalization

Data normalization (or feature scaling) includes methods that rescale input data so that the features have the same range, mean, variance, or other statistical properties.

For instance, a popular choice of feature scaling method is min-max normalization, where each feature is transformed to have the same range (typically [0,1] or [-1,1]) (Wikipedia)

数据归一化（或称特征缩放）包含一系列对输入数据进行重新调整的方法，使得各特征具有相同的取值范围、均值、方差或其他统计特性。例如，最常用的特征缩放方法之一是 min-max 归一化，该方法将每个特征转换至相同范围（通常为 [0,1] 或 [-1,1]）。