01

HOW TO APPROACH ANY MACHINE LEARNING PROBLEM

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Step - 1: Frame the problem

As a first step, you need to articulate your problem by identifying the type which depends on your business problem.

Type can be anything like Binary classification, Unidimensional regression, Multi-class single-label classification, Multi-class multi-label classification, Multidimensional regression, Clustering (unsupervised), Other (translation, parsing, bounding box id, etc.)

Step - 2: Get the data

The next step is to get the data and store it in the right format according to your problem statement.

Analyze your data to check whether you have enough data or not and also check the quality of the data.

The quality of the data fundamentally determines if you will be able to solve the problem at all or not.

Step - 3: Data Pre-processing

After having the data next step is to analyse it and extract insights to make business decisions.

Also, apply basic data preprocessing operations to bring the data in a go to go format.

Choose the right library.

Step - 4: Evaluation metric

The most important step is to know how to evaluate our results.

We need to choose the right evaluation metric according to the problem we are going to solve.

For example - if we have an imbalance dataset then we usually choose the ROC-AUC metric.

Step - 5: Split the data

In any machine learning problem, we split the data into multiple sets like training, validation and test.

Stratified splitting is the most used for classification problems and K-Fold for regression problems.

The most important thing to note is whatever operations you apply on the train set must be applied to the validation and test set.

Step - 6: Split the data

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Step - 7: Apply ML algorithms

And finally, we will apply ML models to the data. We can't say which models work best it's just hit and trial.

Apply multiple algorithms do hyperparameter tuning, evaluate the results and choose the best model which gives satisfying results.

Benchmark your solution based on your selected evaluation metric.

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