Report on Naive Bayes algorithm

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Introduction

Naïve Bayes Algorithm is a powerful **probabilistic classification** technique. It is based on **Bayes' Theorem** and assumes **independence** between features. By leveraging **prior probabilities** and **likelihoods**, Naïve Bayes provides efficient and accurate predictions. This presentation will explore the **inner workings** and **applications** of this algorithm.

Types of Naïve Bayes

There are several types of Naïve Bayes algorithms, including **Gaussian**, **Multinomial**, and **Bernoulli** Naïve Bayes. **Gaussian** Naïve Bayes assumes a **normal distribution** for continuous features. **Multinomial** Naïve Bayes is suitable for **count-based features**. **Bernoulli** Naïve Bayes is used for **binary features**.

Naive algorithm for Pattern Searching

i) It is the simplest method which uses brute force approach.

ii) It is a straight forward approach of solving the problem.

iii) It compares first character of pattern with searchable text. If match is found, pointers in both strings are advanced. If match not found, pointer of text is incremented and pointer ofpattern is reset. This process is repeated until the end of the text.

iv) It does not require any pre-processing. It directly starts comparing both strings character by character.

Applications of Naïve Bayes

Naïve Bayes is widely used in various domains. It excels in **text classification**, such as **spam filtering** and **sentiment analysis**. It is also applied in **medical diagnosis**, **document categorization**, **recommendation systems**, and **fraud detection**. The algorithm's simplicity, efficiency, and good performance make it a popular choice in many real-world scenarios.

Thank you