Kenneth Allen

Jeffrey Young

Machine Learning

October 11, 2017

**A Bayesian Approach to News Headline Classification**

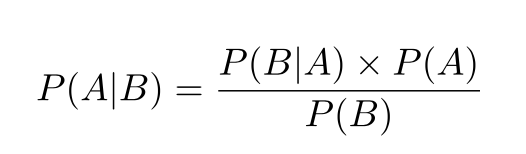
**Introduction:**

News article Headline have traditionally been a source for attraction without providing much content. The information value of headlines may be considered miniscule at best.

**Background:**

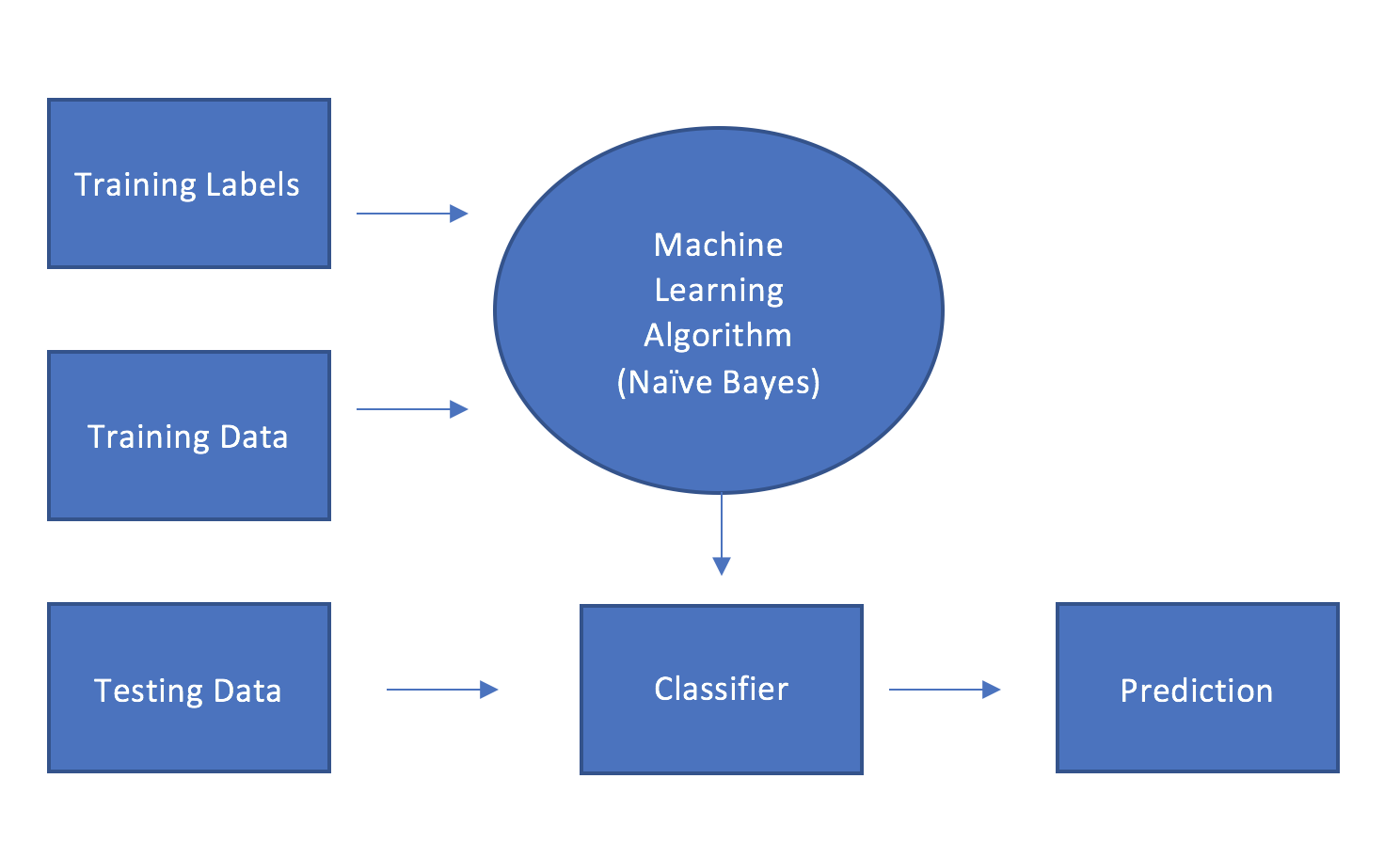
**Bayes' Theorem** is a simple mathematical formula used for calculating conditional probabilities. It figures prominently in *subjectivist* or *Bayesian* approaches to epistemology, statistics, and inductive logic. Subjectivists maintain that rational belief is governed by the laws of probability and lean heavily on conditional probabilities in their theories of evidence and their models of empirical learning. Bayes' Theorem is central to these initiatives both because it simplifies the calculation of conditional probabilities and because it clarifies significant features of subjectivist position. Indeed, the Theorem's central insight that a hypothesis is confirmed by any body of data that its truth renders probable is the cornerstone of all subjectivist methodology.

**Bayes' Theorem**:



**Naive Bayes** is a family of probabilistic algorithms that take advantage of probability theory and Bayes’ Theorem to predict the category of a sample (like a piece of news or a customer review). They are probabilistic, which means that they calculate the probability of each category for a given sample, and then output the category with the highest one. The way they get these probabilities is by using Bayes’ Theorem, which describes the probability of a feature, based on prior knowledge of conditions that might be related to that feature.

**Data Processing:** (insert block diagram)

****

**Results and Performance:**

**Discussion:**

**Sources:**

A practical explanation of a Naive Bayes classifier. (2017, October 03). Retrieved October 09, 2017, from https://monkeylearn.com/blog/practical-explanation-naive-bayes-classifier/

Joyce, J. (2003, June 28). Bayes' Theorem. Retrieved October 09, 2017, from https://plato.stanford.edu/entries/bayes-theorem/