The article mainly talks about sentiment analysis approaches. Two main approaches are machine learning approach and lexicon-based approaches. Also, this article shows application of different machine learning methods for sentiment analysis. Focusing on SVM, Naïve bayes, and KNN methods, each of those methods have advantages and disadvantages. For example, as the article claims, SVM is known as best classifier for accuracy in speech classification problem, while Naïve bayes have the lowest computing power and KNN is simple in text classification. The article then conclude that SVM provides excellent accuracy compared to other methods while Naïve bayes is suitable where data has small feature set.

Other advantages and disadvantages of SVM, Naïve Bayes, and KNN are listed below.

SVM advantages:

* Works relatively well when there is a clear margin of separation between classes.
* more effective in high dimensional spaces.
* effective in cases where the number of dimensions is greater than the number of samples.
* memory efficient.

SVM disadvantages:

* not suitable for large data sets
* does not perform very well when the data set has more noise
* In cases where the number of features for each data point exceeds the number of training data samples, the SVM will underperform

Naïve Bayes advantages:

* When assumption of independent predictors holds true, a Naive Bayes classifier performs better as compared to other models.
* Naive Bayes requires a small amount of training data to estimate the test data. So, the training period is less.
* easy to implement.

Naïve Bayes disadvantages:

* assumption of independent predictors
* If categorical variable has a category in test data set, which was not observed in training data set, then model will assign a 0 (zero) probability and will be unable to make a prediction. This is often known as Zero Frequency.

KNN advantages:

* intuitive and simple
* has no assumptions
* No Training Step
* It constantly evolves
* easy to implement for multi-class problem
* Can be used both for Classification and Regression

KNN disadvantages:

* slow algorithm
* Curse of Dimensionality
* needs homogeneous features
* Imbalanced data causes problems (as (Zhang & Mani) stated in their study)
* Outlier sensitivity

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