Messaging Spam detection using Naïve Bayes Classifier and Text Optimization

With the expansion of the technology around the globe, digital messaging has become an important part of everyday life. These messaging systems can include SMS, Email, IM in various apps etc. While many uses these messages to communicate in personal or professional setup, some use these systems as information sources. For this reason, these platforms are targeted by many groups to share information and advertise products or services. Among these groups can exist some individuals that may misuse the system.
A spam is any unwanted or unsolicited message sent to your device, often for commercial purposes. But it could take other form such as, a link to a number to call or text, a link to a website for more information. It is estimated that in the United States, every year almost 4.5 billion spam texts end up in inboxes.

Why someone need an application to detect spam messages?

As discussed above, digital messaging systems are one of the most effective ways to reach a larger population. This fact can be used by individuals who are interested in **distributing false information** among groups. This was widely seen during election campaigns and any kind of a crisis that could potentially disturb the peace and security in communities. Some hackers use digital messaging systems to **obtain personal information** about individual. They may ask for information such as name, address, or worse, bank details and other sensitive information in order to win a prize. This can lead to **identity theft** and fraudulent transaction of money from bank accounts. **SMS phishing** is also a known method of obtaining personal information about individuals. **Advertising products or services that are fraudulent** is also seen in many cases, that could potentially lead people to send money to hackers. The consequences of such attacks can be destructive, where victims can lose money, expose personal and financial information and jeopardize their business reputation.

Features that the application will support

Detect spam messages with an accuracy of > 90%.
Flag the spam messages when they reach inbox.
Given a text message, identify if it is a Spam or not
Gather data and improve the model to detect spam messages with greater accuracy.

Similar Applications

1. SpamHound SMS spam Filter
2. Block Text, Spam Blocker for android
3. Call Control – SMS/Call Blocker.

Methodology and Dataset

In order to develop the application, we will be using a data model designed using Naïve Bayes classifier.
The model will be optimized using techniques such as Smoothing and Text optimization methods.
Data set: https://www.kaggle.com/uciml/sms-spam-collection-dataset

References

7 Deadly Types of SMS Fraud: https://www.cequens.com/story-hub/7-deadly-types-of-sms-fraud