Business Applications of Text Analytics

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Importance of Textual Data

Of all the data existing in the world, we have created roughly 90% in the last two years — On an average 50,000 gigabytes of data is being created in the internet every second. And around 90% of the data is unstructured such as texts, tweets, pictures, and videos (Griffith, 2018).

Picture credit: https://financesonline.com/how-much-data-is-created-every-day/

The goal of text analytics is to use the textual data and get meaningful insight for decision-making. Let's look at some examples.

Credit-worthiness assessment

Banks can now assess creditworthiness of customers even without any credit history using text analytics. Since most people use smartphones and leave digital footprints, text analytics can use these information such as geolocation data, peer networks, social media data (all with the permission of the consumer), browsing history etc. to generate a credit score that is highly predictive of customer's financial responsibility. For instance, a Singapore-based company LenddoEFL has developed an algorithm for the same purpose. One simple method that LenddoEFL could have used is some version of regression. For instance, using geolocation data, peer networks, social media data, browsing history as predictors, one can predict financial responsibility.

Voice of Customer (VOC)

Companies get a lot of customer feedback via blog, call-center voice transcripts, emails, forum posts, news-feeds, surveys, tweets etc. For instance, Uber Eats may perform a VOC text analysis on Twitter-feed for customer issues. With an early warning, Uber Eats will be able to deal with the issues more effectively. Different text analytic techniques can be used for this purpose. For instance, using word embedding techniques, one can see how different complaint words are related. Some of the questions that can be answered using VOC data are:

- Find communication behaviors that are signs of valuable leads and customers.
- What are the customer-related issues that require immediate attention to avoid harming the brand?
- What are the preferred communication channels of customers for different concerns, and how can we allocate our resources effectively to meet their needs?
- Improper routing and prioritization of service tickets can lead to dissatisfied customers who may vent their frustration on the employees. Furthermore, the excessive focus on resolving tickets quickly may hinder the quality of post-interaction work (wrap time) that is essential for effective conversation analysis.

Chatbots

As per Gartner, around 85% of initial customer interactions are with chatbots. Chatbots can offer human-like personalized communication and have many uses. For instance, in sales, they can chat with prospective customers, schedule appointments and provide useful help to salesperson for closing the sale. For instance, Asos, the British online fashion and cosmetic retailer reported a 300% increase in orders using Chatbot and a 250% ROI.

Sentiment Analysis

Experts suggest that around 83% consumers form an impression of businesses just after reading 1-3 online reviews, and around 2/3rd of consumers make purchase decision by looking at least 6 online reviews (Fullerton 2017), giving us a clue of how important it is for companies to track the conversation around them and uncover the feelings behind what's being said.

Information Extraction from legal, financial, health documents

In the financial sector, text analysis helps with risk management as multiple sources of data are linked together and useful information can be extracted. Similarly, using SEC filings, text analysis can help with equity research.

Hiring and Recruitment

HR professionals are helped to a great extent by the text analytic applications that screen the thousands of applications and resumes for a proper match with the job descriptions. Additionally, apps like Textio can create appropriate job descriptions that reduce gender favoritism and maximize the number of job applicants.

Product Improvement

In their study, Bhoir et al. 2016 evaluated 33000 tweets sent to Fitbit Support over a period of six months. Using text analytics method, they could get specific issues affecting specific models; for instance, the Fitbit Charge HR strap was an area of concern. The Fitbit Blaze had issues with the operating system. Having access to such information can allow the companies to quickly improve products and increase consumer satisfaction.

Competitive Analysis

Depending on the industry, text analytics can be used for competitive analysis based on freely available text such as FDA and Consumer Financial Protection Bureau reports.

Social Impact of Text Analytics

In a very interesting piece of work, Tom Sabo uses various text data sources such as police reports, newspaper articles, recent prosecutions, shady classified advertising websites etc.to make a predictive model about human trafficking. Check out the details here:

https://blogs.sas.com/content/sascom/2019/04/05/countering-human-trafficking-using-text-analytics-and-ai/

Industry Interest

Lot of big tech firms are investing in text analytics software anticipating a tremendous potential of it's role in business decision-making. Check out some of the links below:

- Amazon Comprehend
- Azure Text Analysis API
- Google NLP Products — AutoML and Natural Language API
- Watson Natural Language Understanding

References

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