NATURAL LANGUAGE PROCESSING (NLP) IN BUSINESS ANALYTICS

Introduction:

NLP is one of the most amazing aspects of artificial intelligence. It is a field of science and engineering that enables interaction between computing service by using human language and various other human interfaces. It uses mathematical and computational methods to examine the human understandable language to make the process of computer interaction smooth and efficient. NLP uses machine learning to make the human-computer interactions easy.

The earliest attempts to study the human language was carried on about 50 years ago and this was done through computational methods. Since then, various factors have led to the growth and popularity of this technology. the development and increase in the computational power of computers allow us to handle the massive amount of data which helps in the development of extremely complex mathematical models which includes deep learning of neural networks.

Our generation is observing an exceptional growth of multi-channel data like mobile or social network data, and this has put up a need for technologies to evaluate and access the sentiments of the customer.

The conventional techniques used to analyse customer actions appears to be outdated in this highly competitive world of business. There is a need to understand the preferences and moods of the customer. As technology will continue to grow, the application of NLP will become more user-oriented and it will work as a roadmap to the future of business. Business today should be as flexible and adaptive as possible with an ability to quickly change as a response to change in the market environment.

There is a parallel connection between NLP and business intelligence and analytics. With the use of NLP, the BI based data can be made more accessible. Natural language interface can change our interactions with complex systems with the database and large datasets. For the big businesses, it seems to them as a way to connect non-technical with data they need to support crucial choices. The application of NLP in business intelligence tools can make it easy for non-techie people to start analysing data by themselves instead of waiting for IT specialists to run complex reports. We can say that it is the democratization of information access, as it allows every person involved in the business to access the information in order to make informed decisions.

The current strategy of an NLP is more about translating natural speech into the machine or computer understandable language. However, there are high chances of this focus to shift on making the computer understand the query and convey significant responses than just raw search results. Soon, time will come that we will be getting the response in natural languages.

NLP can improve business intelligence and analytics in plenty of ways, especially when it comes to text analysis. It is no surprise that a great deal of business-related information origins is in unstructured form. NLP helps in revealing patterns in scattered data which makes it more suitable for further analysis.

The NLP can be used in BI by helping in the analysis of customer sentiments, using natural language processing techniques to abstract particular info from a piece of text, this is also known as opinion mining. This technique is already in use by the big brands to reflect the sentiments of their customer, and determine if the social media buzz around them is positive or not.

NLP also helps in summarizing, a summarizer will help by making shorter versions of the source text without changing the purpose and content of the original. This is used by media organizations to categorize, tag and summarize content and increase the ability to understand at the same time.

Business intelligence will go a long way with NLP. The increasing data access and improved quality of data will allow business to save the budget and time to make the ground ready for decision making.

Helical insights help business users who have no technical knowledge to get immediate business answers just by typing in their questions. Imagine, you are able to get answers to important questions anywhere, anytime by simply asking a question. If we turn BI into a conversation with a Chatbot, people can easily access information just by asking – “what is the change in revenue in last quarters?”. Earlier it was necessary to have years of experience and familiarity with the software to understand and ask the questions and get the needed data, but this has changed now with the integration of NLP

Objectives of the Program

1. Participants will learn the techniques used in NLP
2. Participants will get familiarized with the terminology and the topics of NLP
3. Participants will learn the techniques of feature extraction from social media text data and other text data
4. Participants will learn to develop predictive models in social media text data and other text data

Pedagogy of the Program

The courses would be taught on participation mode using the following methods
Lectures, Hands-on-experience in R, Python, IBM Cognos, Case Analysis

Indicative Content of the Program

1. Introduction to Natural Language Processing, Unstructured data, Business examples of unstructured data, Giving structure to unstructured data, Rule discovery from text data
2. Text Analysis Applications in Artificial Intelligence (AI), Summarizing Documents like business complaints, grievances, feedback etc.
3. Basic approaches to represent text documents: Bag of words, stop words, stemming, Word Clouds, Extraction of data using R/Python
4. Using Term Frequency (TF), Inverse Document Frequency IDF) in text data for clustering and classification of documents of complaints, grievances, review feedback etc.
5. Insight from tweet data: Text mining from tweet data using Naïve Bayesian Classifier, R/Python code for predictive modelling
6. Applications of Naïve Bayesian Classifier: Gender prediction from the tweets/ microblogs, R/Python code for predictive modelling
7. Identification of sarcasm, Identification of spam, R/Python code for predictive modelling
8. Artificial Intelligence using Watson, Using Watson in various business domains

Program Director: Prof.P.K.Bala

Fees (Per Candidate):Rs 19200+GST (Non Residential-In Campus),Rs 15000+GST (Online)

Proposed Dates:November 21 to 22, 2020