

Brand Perception using Natural Language Processing

“Opinion mining”

Unstructured Text Data

- NLP Based Cognitive Analytics

“Consumer opinion” is vital for organizations to stay upbeat in the market and offer better services. Looking from the lens of a consumer, organizations have the key to visualize future innovations and process improvements. This white paper provides an introduction on how NLP based opinion mining algorithms can help companies understand their brand value in the market.

Contents:

- Introduction
- Cognitive Computing
- Natural Language Processing
- Sentiment Analysis
- Sentiment Analysis for Brand Perception / Monitoring
- Benefits
- Limitations
- Conclusion



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Introduction:

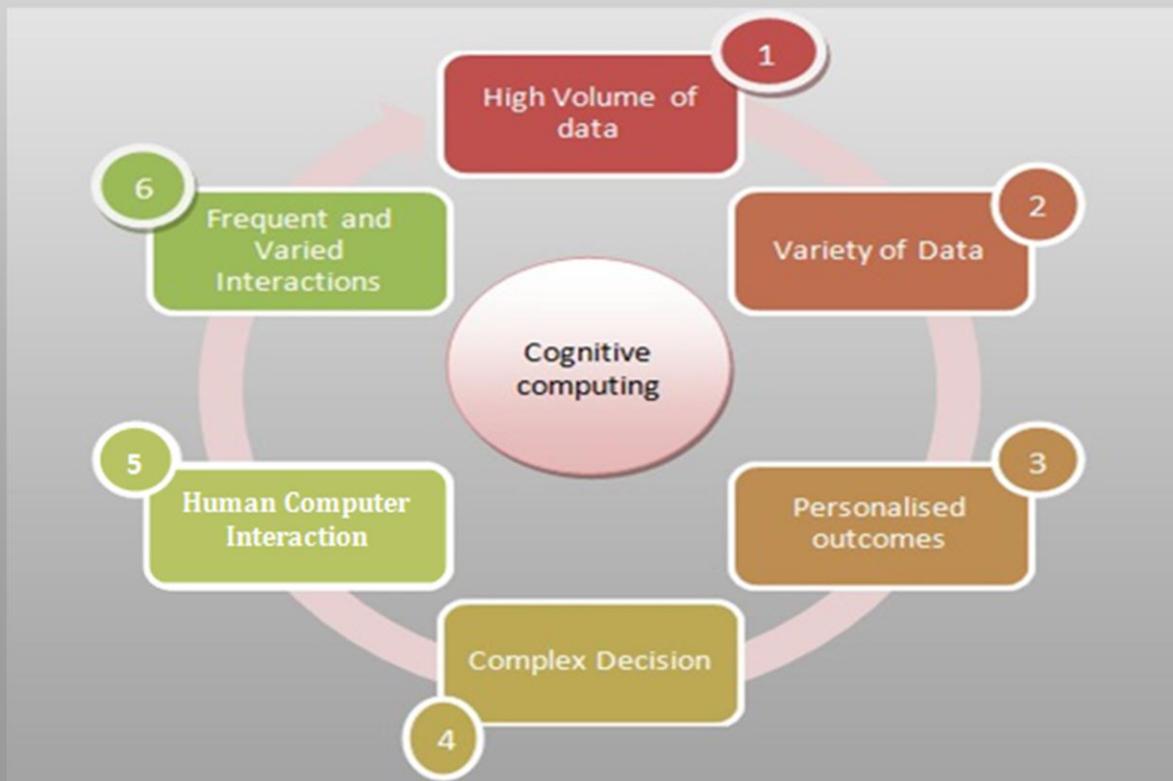
'Brand' is an abstract idea of a product or service a consumer perceives as it adds value to their life. With raise in Social Media and the data explosion in the form of "*unstructured textual data*" collected through in-house feedback systems and from various on-line resources, companies now have an edge over their competitors provided they read through what the customers need. Listening to the customer brings out key insights that would highlight new spaces to explore, expand and also improve the existing processes.

AI systems built on strong cognitive computing models play an important role in gaining agility to analyze and retrieve useful information from vast repositories of unstructured textual data. With more sophisticated techniques to perform advanced analytics like NLP (Natural language processing) and Deep Learning, businesses are equipped to answer:

- What does the market say?
- What decisions they can make now?

Cognitive Computing:

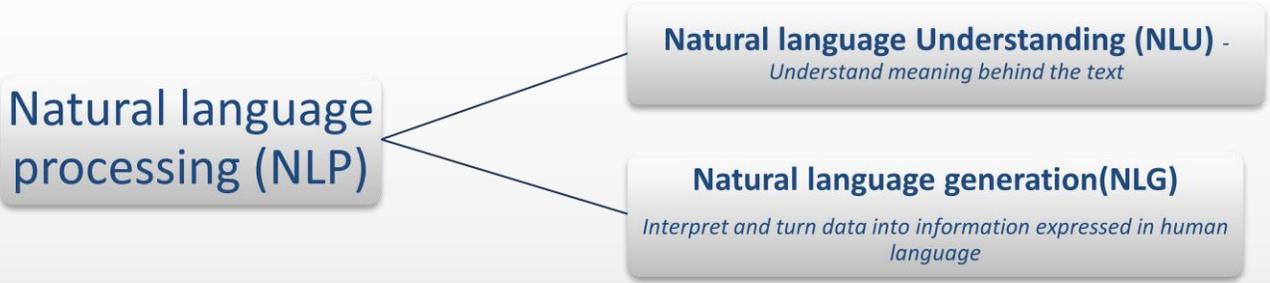
It is the self-learning capacity of a system that utilises Machine learning and Deep learning to mimic human brain function of processing speech, vision and natural language along with typical data streams



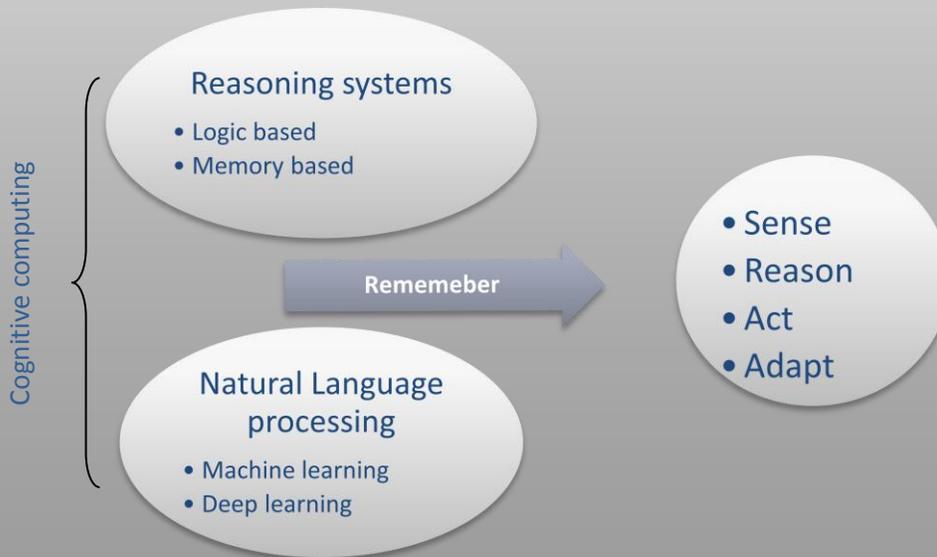
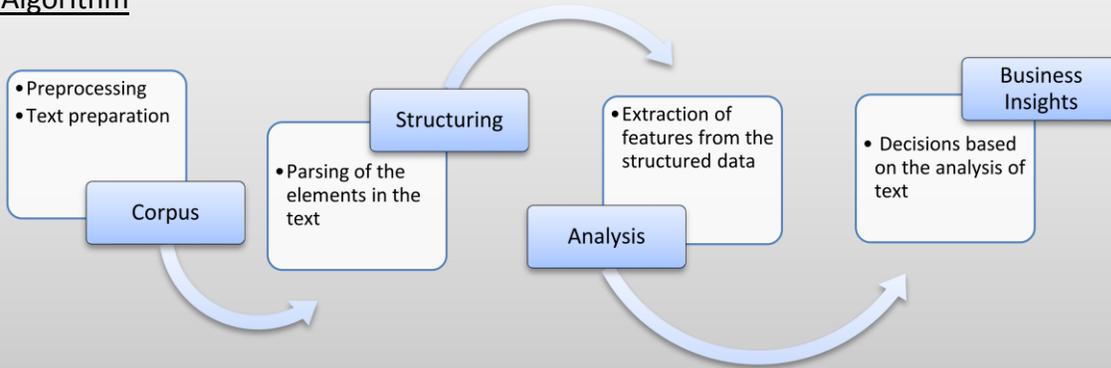
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Natural Language Processing *(Going beyond words and lines...)*

NLP is the branch of cognitive computing ability that enhances machines to process textual data, break it down, comprehend its meaning and determine appropriate action.



NLP Algorithm



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Sentiment Analysis:

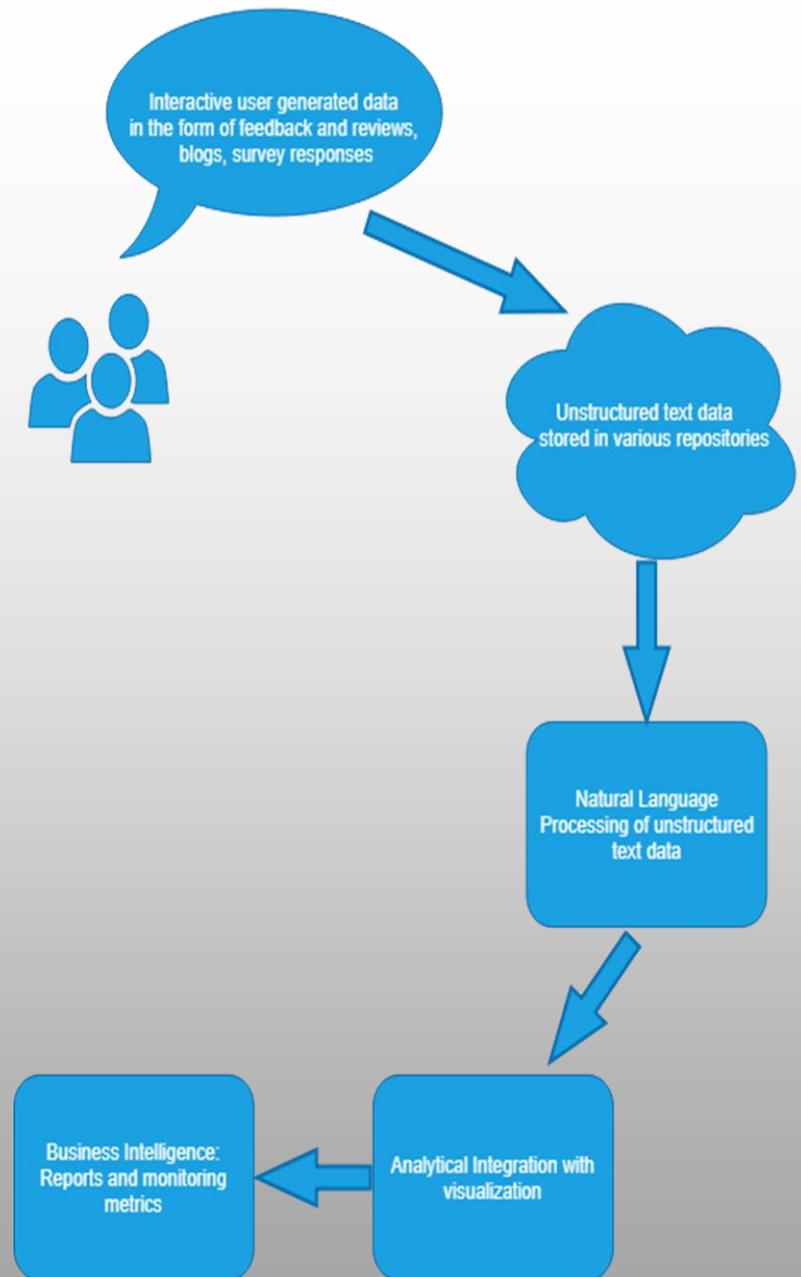
(Extract opinions within text)

80% of the world's data is unstructured and mostly textual, but with the NLP algorithms we can easily crunch data and get actionable insights. Apart from the opinion they also extract attributes like

- *Subject* - the thing that is being expressed
- *Polarity*- whether its positive or negative opinion
- *Opinion holder*: Who expressed the opinion

Sentiment analysis can be applied at different levels of scope:

- *Documents* -Brings the sentiment of a complete document or paragraph.
- *Sentences* - Brings the sentiment of a single sentence.
- *Sub-sentences*- Brings the sentiment of sub-expressions within a sentence.



Sentiment Analysis for Brand Perception/Monitoring:

- Extract and analyze opinions from different sources over a period of time to see the sentiment of the consumers
- Automatically classify the text related to a brand via sentiment analysis with real time streaming
- Build applications that use the results of sentiment analysis to generate and send automated reports to relevant teams
- Automate all the process
- Using Business Intelligence, understand the brand's presence in the market and how consumers value the brand

Benefits:

- Scalability
- Real-time analysis
- Consistency
- Understand how the brand has evolved
- Understand how competitor is performing and their reputation has evolved
- Identify potential crisis and respond more quickly to warnings and shifts in the market
- Target clients or consumers to improve products and services
- Monitor sentiments about specific aspects of the business
- By listening to consumers, empower internal teams and achieve customer retention

Limitations:

- It is difficult for the system to identify sarcasm or ironic opinions and to interpret them in isolation. With proper training of the NLP algorithm with sufficient amount of large volumes of data it can be overcome to a great extent.

Conclusion:

- This paper provides an overview on how NLP based text data analysis benefits business to use sentiments / opinions and derive business insights.

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About the author:

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An experienced data analyst with over 9 years in the Analytics field, Meera has worked across domains ranging from Risk Management to Customer Analytics. Apart from SAS, she also has gained knowledge on Python and NLP. Her contributions include customer segmentations and generating user-friendly reports that provide detailed insights from unstructured data. Predictive modelling is a skill she has mastered. She has now made a study on Brand Perception using Sentiment Analysis

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- JQuery, ReactJS, Wordpress, Woocommerce
- Cloud Computing, AWS, Chef, Shell scripting, Heroku]
- Natural Language Processing
- Blockchain

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