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NLP - Unlocking Value from Unstructured Data

1st Oct,2022

Natural Language Processing- Unlocking Value from Unstructured Data

What makes Reddit's recent acquisition of Natural Language Processing (NLP) startup MeaningCloud an eye-popping deal? MeaningCloud is armed with linguistic analytics and **Machine Learning (ML)** capabilities which Reddit, a popular user review platform, can use to elevate its services, including its customer safety and advertising efforts. What has NLP in it that turns it into a massive disruptor? To speak lucidly, NLP, a sub-field of Artificial Intelligence (AI) enables computers to interact with human languages, process them and unlock insights from them. Over the years, ***NLP has evolved considerably to graduate to game-changing technology, unwrapping a new world of possibilities. NLP is the secret sauce of the technology powering Alexa and Siri, the two widely known Virtual Assistants. When search engines decipher your search queries, it's NLP in motion***.

Believe in NLP's Capabilities; It's All Around You

How often has the fat thumb led you to type the wrong text? The autocorrect feature suggests the correct spelling, saving you from embarrassment. Many users might not know that autocorrect uses **Natural Language Processing technology**. The same NLP powers spell check, and writing tools such as Grammarly, ProWritingAid and WhiteSmoke use this technology to correct users' spelling and grammatical mistakes. In Google Translate, as well as all other alternatives to Google Translation, NLP is used to interpret the terms that users are trying to translate. Think of the ubiquitous spam in your emails! If you think spam isn't a serious problem, chew this- spam accounts for 45 per cent of all emails sent, and about 14.5 billion spam emails are sent every single day. This is why Gmail uses NLP to identify and evaluate the content within each email and filter the spam content from your inbox. Then, there are Smart Home devices like Google Home that can turn on your favourite playlist while you are still attending to some domestic chores. Here, NLP tech in the home devices recognizes your voice commands and performs actions instantly.

The Growing Trends

1. Chatbots

From drug discovery to data categorization to robotic process automation, natural language processing (NLP) has dozens of applications. One of the most popular applications of NLP is chatbots. Bands leverage chatbots to engage better with customers and exalt customer experience. And for governments, chatbots offer a frictionless citizen experience where citizens can lodge grievances or gain useful info on government schemes, overcoming the hassles associated with in-person visits.

2. Sentiment Analysis

With modern natural language processing techniques, it is now possible to accurately assess sentiment, toxicity, and hot topics of conversation at work. It is arguably essential for leaders who support company culture, engagement, and well-being to track sentiment and toxicity within the organization. In the case of the government-citizen interface, AI-enabled **sentiment analysis**-based grievance redressal is more visible and trustworthy, unlike regular public redressal procedures that may take days to get heard and resolved.

3. Multilingual NLP

NLP capabilities in languages other than English are becoming increasingly important as companies look to better serve customers in new markets and geographies. However, many NLP vendors only rely on machine translation services like Google Translate to convert non-English data to English before analyzing it. Multilingual models for new languages can be created using cross-lingual embeddings and transfer learning. Expanding NLP models to new languages typically involves annotating completely new data sets for each language, which consumes a great deal of time and resources.

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CSM Tech's Brush with NLP

CSM Tech has leveraged NLP technology in some of its solutions, notably **Sociomatic**, a **social listening tool**. Sociomatic enables real-time social media response mining of the citizen's posts on social channels like Facebook and Twitter, thus giving a fillip to bipartite government-citizen interface and participatory democracy. The NLP technology embedded in the tool can gauge the mood and sentiment of citizens posting the conversations. The feedback is usually categorized as positive, negative or neutral. We have also implemented an NLP model at **Kwantify (now Tendrils)**, our ERP portal. This NLP tool can extract useful information like names, mobile numbers and academic qualifications from candidates' Resumes.

Expect NLP to Grow Fast in The Future

It is still in its infancy, but the NLP market is rapidly expanding. By 2026, MarketsandMarkets estimates that the NLP market will grow at a CAGR of 20.3 per cent (from USD 11.6 billion in 2020 to USD 35.1 billion). Two major trajectories shape the NLP roadmap - the first, is the GPT-3, a language processing tool which uses AI and statistics to predict the next word in a sentence based on the preceding words, and their future cousins. A significant advancement will come in dialogue models, where Google, Meta, and other firms are investing millions of dollars in research and development. The future of NLP is bristling with promises to elevate **user experience** (UX) and propel transformative business outcomes.

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