Technical Review

Zhengma3

Overview

I chose my own topic to learn the services provided by Microsoft's Azure Cognitive Services and Amazon Comprehend and find out what are the differences between the two natural language processing tools. Natural language processing tools are not developed by top technology companies to enhance daily manual processes and improve business efficiencies throughout various ways, such as translate real-time speech, analyze images and videos, and identify the potential issues by personalized requirements.

Microsoft Azure Cognitive Services

Azure cognitive from Microsoft has four main services: speech, language, vision, and decision. These features enable business to better communicate with its clients, customize their needs, and better identify problems.

First, the speech feature includes, speech and text two-way conversion, real time speech translation, and audio to text identification. These features allow business to contact to people who speaks another language with no barrier, provides translations during conversations, and obtain the text from video recordings in seconds. For example, when we read a paper in a foreign language, it is very difficult to understand the words as well as the syntax. By using the AI speech, literatures can be translated more smoothly through natural language processes.

Second, language includes entity recognition, sentiment analysis, question answering, conversational language understanding, and translator. This function can be widely used for customer facing departments. For example, sentiment analysis can determine the tone of the sentence to see if customer is happy with the product and if not then what the complaint is. By going through customer's question, the answers will be navigated automatically. This function also allows to translate more than 100 languages to better serve customers around the world.

Third, vision function is to identify and analyze images and videos such as web content analysis, customize image recognition, and detect people's emotions. Before using AI vision, video streaming companies must spend a lot of time to watch the videos to make sure the content is safe by law. Now with the vision feature, videos and images can be supervised safely.

Lastly, decision feature can help users to make wise decision fast. This feature contains anomaly detector, content moderator, and personalizer. These features enable customer to identify the potential issues ahead of time, detect unwanted contents, and further customize according to the needs.

Amazon Comprehend Services

There are a lot of very similar features offered by Amazon comprehend. Amazon comprehend offers keyphrase extraction, sentiment analysis, syntax analysis, entity recognition, language detection, custom classification, topic modeling, muti-language support. These features are very similar to what Microsoft offers through natural language processes.

In addition, Amazon provides additional features specially for medical information. Customer can access to Protected Health Information Data Identification (PHId) to extract medical information such as test result, medication, etc.

Differences between two products

One important difference is Azure Cognitive does not use customer data to do any tool enhancement. This is greatly different from Amazon Comprehend which states that it uses customer's data to better improve their model. Also, Azure cognitive enables customer to use on-premises which mean customer's data will not be uploaded to cloud but save at local instead. This will greatly protect sensitive information. For example, hospitals can use Azure cognitive to better fill the patients' medical forms without having the risk of exposing patients' information. In this case, data leaking can be prevented at the first tier. Vision function also

allows customer to run AI models offline. Customers can download the AI models in their own devices such as mobile or computer and use the models there.

Another difference is that Amazon has its special medication information to extract from PHId. This will be very useful for medical related companies in terms of size of patient in market, advertising audience, and potential needs for health supplements.

Finally, Microsoft Azure Cognitive provides image or video recognition which Amazon does not. This feature is very useful for companies such as YouTube, Tok-tok, and Reddit.

Conclusion

Both Amazon Comprehend and Microsoft Azure Cognitive provide very good natural language processing services. However, Microsoft Azure Cognitive is more powerful in terms of image and video cognition. As well, it enables users to work on-premises and keep user information in their own hand. This will greatly encourage users to trust the product and give out a try.

Citation

https://azure.microsoft.com/en-us/services/cognitive-services/#features

https://aws.amazon.com/comprehend/features/