

Compulsory Task 2

An example of an innovative technology using NLP is Gmail's auto-response suggestions on your incoming emails. Imagine that I send an email to your Gmail address asking for an appointment. On opening the mail you will notice Gmail's automatically suggested response options such as "Yes, that works for me" and "Sorry, I'm not available at that time", intended to make replying as simple and quick as selecting the appropriate option (unless you want to say something more!)

- Read up on any similarly innovative technology using NLP (by companies such as Google, Microsoft, or IBM, for instance) and write a brief summary about the technology, what it does/ achieves, and an overview of how it works (250-500words).

Amazon Review summarisation

In 2023 Amazon introduced a new way to get an overview of their huge amount of customer reviews. An AI summarises all the reviews that were left for a product and pin points positives and negatives. The AI leaves the customer with one brief and condensed summary that makes reading through all the individual reviews obsolete. Thus, it makes the customer's decision to buy or not to buy simpler and faster.

This technology is a great example for automatic summarisation. Amazon created a technology that 'reads' and analyses the various customer reviews. It picks up on aspects that are mentioned most often and finds patterns in the customer reviews. It then categorises these in positive and negative aspects. My guess is that this is done by a semi-supervised learning algorithm. It is likely that the model finds patterns and clusters in those reviews (unsupervised learning) and that it uses labelled data to classify those patterns (supervised learning). The algorithm does not only analyse the written words, but also the emotional tone. See the example:

"Customers appreciate the shirt's fit, quality, and style. They find it comfortable to wear, with a nice texture and looks good. Many consider it a great value for the price, and mention it's lightweight for workouts and wearability. However, some dislike the material thickness."

(Amazon AI review,

[https://www.amazon.co.uk/dp/B0785VMVF4?ref=emc_s_m_5_i_atc&th=1&psc=1])

This segment highlights negatives and positives about the product, and it also pinpointed which aspects were especially appreciated. Therefore, I believe that on top of automatic summarisation, the NLP technique of Sentiment analysis is used.

Another point to consider is that Amazon is used in many different countries. Customers leave reviews in many different languages. Hence, I suspect that the NLP technique of language translation also plays a part.

After gathering information, translating it into the target language, deciding if the aspects are good or bad (through text analysis and sentiment analysis), the AI generates a short summary. Here it does not recreate the exact sentences that were written by customers as this would be hard to do with the large amount of reviews. Instead, it guesses the meaning of the whole text the reviews, collects them all and then presents the overall meaning to the reader. Here it creates its own sentences. This way of summarising is called abstractive summarisation.

Source:

Amazon. (13 December 2023). Customer reviews: Generative AI. About Amazon UK.
<https://www.aboutamazon.co.uk/news/innovation/customer-reviews-generative-ai>

Turbolab. (6 May 2024). Types of text summarization: Extractive and abstractive summarization basics.

<https://turbolab.in/types-of-text-summarization-extractive-and-abstractive-summarization-basics/>