**What are natural language processing applications?** The **majority of activities performed by humans are done through language**, whether communicated directly or reported using natural language. As technology is increasingly making the methods and platforms on which we communicate ever more accessible, there is an even greater need to **understand the languages we use to communicate**. By combining the power of **artificial intelligence, computational linguistics and computer science**, [**Natural Language Processing (NLP) helps machines “read” text**  by simulating the human **ability to understand language**](https://expertsystem.com/learning-center/technology/).

**NLP is everywhere even if we don’t realize it**. Does your email application automatically correct you when you try to send an email without the attachment that you referenced in the text of the email? **This is Natural Language Processing Applications at work**. Although NLP applications rarely perform at a high level, they are already at work, helping us perform many of our daily activities.

While NLP may not be not as widely known as Big Data or Machine Learning, **we use natural language applications or benefit** from them every day. **Here are some examples of the most widely used NLP applications**:

Natural Language Processing Applications: Machine Translation

As the **amount of information available online is growing**, the need to access it becomes increasingly important and the value of natural language processing applications becomes clear. Machine translation helps us conquer language barriers that we often encounter by translating technical manuals, support content or catalogs at a significantly reduced cost. The challenge with **machine translation technologies is not in translating words, but in understanding the meaning** of sentences to provide a true translation.

Automatic summarization

**Information overload is a real problem** when we need to access a specific, important piece of information from a huge knowledge base. Automatic summarization is relevant not only for**summarizing the meaning of documents and information**, but also for **understand the emotional meanings inside the information**, such as in collecting data from social media. **Automatic summarization** is especially relevant when used to provide an overview of a news item or blog posts, while avoiding redundancy from **multiple sources and maximizing the diversity of content obtained**.

Sentiment analysis

**The goal of sentiment analysis is to identify sentiment among several posts** or even in the same post **where emotion is not always explicitly expressed**. Companies use natural language processing applications, such as **sentiment analysis**, to identify opinons and sentiment online to help them **understand what customers think about their products and services** (i.e., “I love the new iPhone” and, a few lines later “But sometimes it doesn’t work well” where the person is still talking about the iPhone) and overall indicators of their reputation. Beyond determining simple polarity, sentiment analysis understands sentiment in context to help you better understand what’s behind an expressed opinion, which can be extremely relevant in undersanding and driving purchasing decisions.

Text classification

Text classification makes it possible to assign predefined categories to a document and **organize it to help you find the information** you need or simplify some activities. For example, **an** **application of text categorization** is spam filtering in email.

Question Answering

As speech-understanding technology and voice-input applications improve,**the need for NLP will only increase**. Question-Answering (QA) is becoming more and more popular thanks to applications such as Siri, OK Google, chat boxes and virtual assistants. A QA application is a system capable of coherently answering a human request. **It may be used as a text-only interface or as a spoken dialog system**. While they offer great promise, they still have a long way to go. This remains **a relevant challenge especially for search engines**, and is one of the main applications of **natural language processing research**.

**Using natural language processing for creating a seamless and interactive interface** between humans with machines will continue to be a top priority for today’s and tomorrow’s increasingly cognitive applications.  
Want to learn more?

Projects related to NLP

1. [Fake News Detection Python Project](https://data-flair.training/blogs/advanced-python-project-detecting-fake-news/)
2. [Parkinson’s Disease Detection Python Project](https://data-flair.training/blogs/python-machine-learning-project-detecting-parkinson-disease/)
3. [Color Detection Python Project](https://data-flair.training/blogs/project-in-python-colour-detection/)
4. [Speech Emotion Recognition Python Project](https://data-flair.training/blogs/python-mini-project-speech-emotion-recognition/)
5. [Breast Cancer Classification Python Project](https://data-flair.training/blogs/project-in-python-breast-cancer-classification/)
6. [Age and Gender Detection Python Project](https://data-flair.training/blogs/python-project-gender-age-detection/)
7. [Handwritten Digit Recognition Python Project](https://data-flair.training/blogs/python-deep-learning-project-handwritten-digit-recognition/)
8. Chatbot Python Project
9. [Driver Drowsiness Detection Python Project](https://data-flair.training/blogs/python-project-driver-drowsiness-detection-system/)
10. [Traffic Signs Recognition Python Project](https://data-flair.training/blogs/python-project-traffic-signs-recognition/)
11. [Image Caption Generator Python Project](https://data-flair.training/blogs/python-based-project-image-caption-generator-cnn/)