

NLP

Natural Language
Processing

Data
Sheet

NLP (Natural Language Processing)

Healthcare data is obtained from multiple sources and the primary source of healthcare data is EHRs. NLP is helping healthcare organizations to better use to get actionable and practical information from this big health data. The use of AI in healthcare has become very popular and some of the applications powered by AI make use of NLP. NLP simply helps in understanding and managing human-generated spoken or written data.

The struggle of digitizing the healthcare system is almost over, but the effort to evaluate and use this knowledge efficiently by gaining practical insight into it is still ongoing. For its beneficial usefulness in the healthcare field, this big data repository requires NLP.

NLP can be clearly described as a branch of AI that reduces the gap between the capabilities of a human and machine. NLP is an algorithm-based concept that helps in the processing of text data, images, and other unstructured data. It summarizes all the unstructured knowledge from which concrete insights can then be produced.

Factors behind NLP 's progress in healthcare

1. Managing the Spike in Healthcare Data

Advanced technologies have made it possible to store and process huge amounts of data over the cloud. The need to tackle this increase in data is ever increasing. The need to make sense of this information and to gain practical actionable insights into personalized treatment healthcare data is growing.

2. HPCC

HPCC, developed by LexisNexis Risk Solution, is a big data tool that offers a single platform, a specific architecture and a specific data processing programming language.

3. Integrating NLP with EHRs

The incorporation of NLP with EMRs relieves doctors and physicians from the pressure of recording everything. Digital assistants from Siri & Alexa have already joined the healthcare room and are helping with customer service and front desk support administrative tasks.

4. Health Literacy

Interactions with an intelligent healthcare chatbot provide the information needed to make them aware of their health problems at the doorstep of patients and they can make educated decisions about their health.

3. Integrating NLP with EHRs

- ❖ Extracting meaning from Human Speech by reading it.
- ❖ By extracting specific values, unlocking unstructured data in documents and databases and making this information accessible for decision support along with analytics.
- ❖ It can be used from a number of tools to parse and abstract key information.

Relevant tasks for systems with NLP may include:

- Summarizing long blocks of narrative text by recognizing key concepts or phrases present in the source content, such as a clinical notice or scholarly journal article,
- Mapping data elements found in unstructured text to structured fields in an electronic health record in order to increase clinical data integrity
- Conversion of data from machine-readable formats in the other direction into natural language for reporting and educational purposes
- Answering specific free-text queries that require multiple data sources to be synthesized
- Engaging in optical character recognition to convert images into text files that can then be parsed and analyzed, such as PDF documents or scans of treatment summaries and imaging reports
- Conducting speech recognition so that users can dictate clinical notes or other data that can then be translated into text.