Journal of Computer Engineering & Information Technology

Commentary   A SciTechnol Journal

Natural Language Processing in Medical

Zahra Akbari *

Abstract

The health care system is a knowledge-based industry that contains a large and growing volume of narrative information that is summarized in reports of abuse reports, reports by physicians, pathologists, as well as radiologists. This material is usually kept in unstructured, non- standardized formats in electronic care systems, which create it difficult for systems to understand the material substances of the history material. Then, retrieving valuable and expressive health material is a trial to make. However, natural language processing (NLP) methods have been used to construct narrative material in health care.

Keywords: Natural language processing; ontology; clustering; health literacy; medical; artificial intelligence; semantic analysis.

Introduction

NLP techniques reduce costs and improve the quality of health care. Therefore, this review article deals with the application of natural language processing in medicine, as well as the methods used, the advantages and disadvantages of each method. Analyzing emerging technologies and their implications for today's economy, communities and companies are essential. In this regard, information retrieval, document classification, business intelligence, technology forecasting, etc, are essential activities that require advanced tools. Natural language processing is a sub-branch of artificial intelligence that it deals with the development and use of computer models for language processing. In this context, there are two main areas of research: perception, which deals with processes that extract information from language. (such as understanding natural language, information retrieval), and production, which deals with processes that use Language that transmits information. It usually puts speech-related tasks under separate headings: speech recognition and speech production. Although a wide range of methods is used in natural language processing, the techniques used can be divided into three general categories: statistical methods, structural / pattern-based methods, and inference-based methods. It should be noted that these solutions are not necessarily separate.

In fact, the most comprehensive models use a combination of all three methods. The difference between these strategies is in the type of processing operations they are able to perform and the number of rules required for automated learning from linguistic data.

In the NLP method, sentences are labeled according to grammatical order such as nouns, verbs, and adjectives. Due to the true nature of a language, some words can have multiple labels, such as nouns and verbs. Tagger programs are part of a lecture (pos), using a combination of several techniques such as lectures, rules, and dictionaries. Dictionaries include word categories. Usually, tagging programs tag the word exactly or guess the best. When words are ambiguous in a sentence, POS tags use possible methods to label correctly.

NLP algorithm

The NLP algorithm was knowledge-driven and had two foremost mechanisms: text processing and patient classification. For example, NLP algorithm recognized a perception "lower boundary" from medical notes. The NLP algorithm likewise checkered the declaration rank of each thought that comprised confidence (positive, negative, and possible), temporality (ancient or existing) laterally with experiencer (linked with the enduring or someone else). For instance, if the NLP algorithm derived crossways a ruling: noninvasive trainings are reliable with plain major occlusive illness of two-sided lower edges, the system classifies the ideas major occlusive illness and lower limits sideways with the consistent declaration position (major occlusive illness) is specified positively, present, and related with the persistent. The patient classification constituent used a set of rubrics to classify the position of each separate.

Natural language processing in medicine

Natural Language Processing (NLP) is a research and application area that examines how computers are used to understand and manipulate natural language text or speech to perform useful tasks. NLP researchers seek to gather knowledge on how to understand human language so that they can develop appropriate tools and techniques for creating computer systems for understanding and manipulating natural languages to perform the desired tasks. There is a wealth of information in the text of electronic health records that, if processed, can be used for a wide range of medical purposes, including support for clinical decision making, Organizational auditing, Qualitative evaluation, and research. The problem of extracting meaningful structural data by end-user tools typically involves command-line interfaces with complex parameters.

*Corresponding author: Zahra Akbari, Department of Computer Science, Karaj Azad University, Iran. E-mail: akbariz81@yahoo.com

---

Author Affiliation   Top

Department of Computer Science, Karaj Azad University, Iran.