The Importance of Syntactic Analysis in Computer Linguistics (in Research Examples of Word Combinations and Valency)

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Abstract

Syntactic analysis is of great importance in computational linguistics, it is one of the main components of natural language understanding and processing. This study explores the importance of syntactic analysis in the context of research on collocations and valence issues. By considering the interactions between words and constraints on their combinations, syntactic structures play an important role in various natural language computing applications, including natural language processing (NLP), machine translation, and information retrieval.

Key Words: *syntactic analysis, word combinations, syntax, valence, computational linguistics, grammatical structures, semantic understanding, linguistic resources, machine translation, corpus linguistics*

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The development of cybernetics in the middle of the 20th century became the basis for the formation of new sciences in the cross-section of related fields that were not observed in the history of science. In particular, the science of bionics emerged at the intersection of biology and engineering. A related field, called a number of names, has emerged at the intersection of computing and linguistics. This science was originally called mathematical linguistics, structural linguistics, computational linguistics. It has now been named Computational Linguistics. Two factors are noted in the formation of this discipline: 1) linguists hoped that modern exact sciences (primarily mathematics) would help to provide the lack of precision in linguistics. The advent of EHM strengthened this hope. It became clear to many linguists that the computer is not only a fast-working arithmetic meter, but also a powerful tool for automating actions performed on the text. Automation of labor-intensive processes has become possible. For example, statistical analysis of texts, collection of various dictionaries and lexical files were carried out on the basis of an automatic system: 2) the problem of communication of users who were not yet ready to communicate with them arose after the advent of computers. For such users, the natural language of their daily activities was considered the most appropriate. But in order to organize this type of interaction, first of all, it would be necessary to understand the laws and features of natural language use in the process of human interaction. It turned out that traditional linguistics did not deal with these issues. Computer Linguistics - Linguistic support designed for the computer (the computer appears as a subject of linguistic capabilities); Computational linguistics is linguistics performed on a computer. The purpose of "Computer Linguistics" is reflected in the following: a) the science of Computer Linguistics is the basis for interaction between a person and a machine (computer);

b) an opportunity is created for the purposeful communication of people living in different regions;

d) the information method, which is considered the main working tool of computer linguistics, ensures the delivery of political, social, economic, scientific and cultural news happening in the world in a fast and accurate form.

Checking of computer linguistics, text editing

8 tracks 198 parsing, automatic editing, machine translation teaching languages, knowledge consists of developing programs. Computational Linguistics is the efficient use of computers and linguistic issues (mastery of information style, knowledge of the functional scope of language, language teaching, knowledge assessment, editing and analysis of texts, translation from one language to another) by means of a computer. Computational Linguistics is the efficient use of computers and

linguistic issues (mastery of information style, knowledge of the functional scope of language, language teaching, knowledge assessment, editing and analysis of texts, translation from one language to another) by means of a computer. determining ways of solving, increasing the level of computer literacy, teaching logical correct and consistent thinking, forming theoretical knowledge and in certain directions refers to the formation of practical skills.determining ways of solving, increasing the level of computer literacy, teaching logical correct and consistent thinking, forming theoretical knowledge and in certain directions refers to the formation of practical skills. Syntactic analysis plays an important role in the processes of automatic language understanding and development. Parsing is important for the following reasons. Syntactic analysis determines the relationship and order of words in a sentence, which helps to understand the meaning. Syntactic analysis is used in automatic speech recognition systems, which provide users with more efficient and intuitive interfaces. Syntax analysis is also important in translation systems because it helps in translating the syntactic structure of one language into another. Phrases are syntactic units consisting of one or more words. They play an important role in determining the syntactic structure of the language. For example, the phrases in the sentence "the girls are playing games":

• "girls" (subject)

• "are playing a game" (predicate)

By analyzing these word combinations, we can correctly understand the meaning of the sentence. Computational linguistics uses various algorithms and models to identify word combinations, such as contextual grammars or recurrent neural networks. Valence Studies Valence is a characteristic of a verb that determines the number and type of participants it depends on. Valency studies are an important part of syntactic analysis because they determine what objects or subjects a verb needs. For example:

• "He reads a book" - in this sentence, the verb (to read) has one object (a book).

• "They play football" - in this sentence, the verb (to play) has two participants (players).

With the help of valence studies, it is possible to determine the syntactic properties of various verbs in computational linguistics and to place them correctly. Syntactic analysis is important in the processes of language understanding and development in computational linguistics. It enables the development of speech recognition and translation systems to determine the syntactic structure of the language through lexical and valence studies. In the future, syntactic analysis methods are expected to improve further and provide new advances in automatic language understanding. Syntactic analysis is important in the understanding and development of language in computational linguistics.

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By analyzing syntactic structures, syntactic models of text, syntactic communication relations and discourse, language complexity can be determined. And the used educational technologies help to make this process more efficient and intuitive. In the future, further development of syntactic analysis methods is expected, which will open up new opportunities in automatic language understanding.

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