**COMPARISON OF DIFFERENT APPROACHES TO INFORMATION SEARCH**

**Юрченко Богдана Олегівна**

студентка

Національний технічний університет України

"Київський політехнічний інститут імені Ігоря Сікорського"

м. Київ, Україна

danarossa14@gmail.com

**Introductions.** In the modern world, we have the capability to gather a huge amount of data. Yet, the data itself can hardly give any profit. The knowledge is, on the other hand, exactly what can help in decision making and therefore is more valuable. Thus the question of efficient and advanced methods of search and knowledge extraction is a topical question.

**Aim.** The aim of the work is to compare different approaches to information search and highlight their advantages and disadvantages.

**Materials and methods.** There are 2 types of search: keyword search and semantic search. The keyword search approach was prior to the more advanced semantic search. The difference between them is that the semantic search engines consider the meaning of the search query and its intent and thus can provide more convenient results. Whereas the keyword search takes into account the words as separate elements. It can often consider an article with the most matches the best even though it may not be [2].

The main characteristics of a search method that matter are: the speed of the search (how fast can the same information be found in the same data using different methods), the quality of the found results (is the found data relevant to the search query) and the amount of metadata needed for the engine to work.

**Results and discussion.** Basically, since keyword search analyzes much less information about pages it is much easier to understand, implement, and maintain. But at the same time, such an approach is not valuable because of its inefficiency. Modern semantic search engines analyze lots of parameters, data, gathered over the years, and use machine learning to provide the most relevant answers to the user requests. Despite its complexity today, in the beginning, semantic search has emerged from the semantic web. The semantic web is built on ontologies. And the ontologies are usually used to form knowledge systems. Unlike the semantic search that uses machine learning, the ontologies use manually declared links and relations between terms. Such an approach allows engineers to extract hidden knowledge from the data set but it also requires a lot of input work (ontology formation) before the system can spot anything useful [1].

**Conclusions.** There are 2 basic search approaches. The semantic search is commonly used in modern search engines. Such a search requires a lot of data to analyze in order to provide the most relevant results. The semantic search had its origin in the semantic web that is built on ontologies. And the ontologies can still be used to form knowledge bases and search in them. Having considered these properties of different searches, the data engineer can choose the most suitable for the task.

**References:**

1. Yu, B. *Research on information retrieval model based on ontology*. J Wireless Com Network 2019, 30 (2019). https://doi.org/10.1186/s13638-019-1354-z

2) Bhagdev R., Chapman S., Ciravegna F., Lanfranchi V., Petrelli D. (2008) *Hybrid Search: Effectively Combining Keywords and Semantic Searches*. In: Bechhofer S., Hauswirth M., Hoffmann J., Koubarakis M. (eds) The Semantic Web: Research and Applications. ESWC 2008. Lecture Notes in Computer Science, vol 5021. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-68234-9\_41