

## **Abstract**

of attestation master's degree work

on subject:

"Research of features of the hybrid method for constructing macromodels of non-electrical components of MEMS"

by

Shumeyko Yuri Dmitrovych

### **Actuality of the work**

To date technical facilities allow people to store and process large volumes of information. Electronic information is widely used by all spheres of public life: in banks, libraries, research institutions, etc. The possibility of finding relevant information in the shortest possible time has become an important and nontrivial task. To solve such problems information retrieval systems are applied. Typically, these systems work according to the assumption of mutual independence of the words of the text containing in document, making it difficult to find relevant documents. Multiple meaning of words, a large number of synonyms, homonyms, etc lead to the fact that irrelevant documents may be found to be the result of the system's work. The solution of the problem may be an information retrieval system that can recognize the semantic meaning of the analyzed document. Therefore, the search for ways to improve the efficiency of information retrieval systems is an important task in our time.

### **The purpose of the work**

The purpose of this work is to identify the shortcomings of models of information search, and devising ways to eliminate them. The development of the information retrieval system based on the vector model of information retrieval, enhanced by semantic model using ontologies to work in a single search engine.

## **Tasks solved in work**

1. Investigation of the features of existing models of information retrieval.
2. Determination of deficiencies of information retrieval models and searching ways to eliminate them.
3. Developing a model of information retrieval using ontologies.
4. The development of an information retrieval system based on the proposed searching model using ontologies.

## **The achieved results**

Solving the tasks put in-process, an author protects:

- the results of the analysis of features of existing models of information retrieval systems;
- developed model of information retrieval using ontologies;
- development of an information retrieval system based on the proposed model of information retrieval.

## **Scientific novelty**

The scientific novelty of the work consists of the following:

- A model of information retrieval system using domain ontologies:
  - to determine the relevance of the document the system takes into account the meaning of the text document, which is achieved through the use of domain ontologies;
  - the use of domain ontologies makes it possible to included in the proposed information retrieval system module which automatically finds answer to a question;
  - the use of domain ontologies allows thematic structuring of the found documents.

## **Practical value**

The practical value of the work is to obtain systematic theoretical information about the organization of information retrieval in arrays of unstructured information, using the developed model of information retrieval.

## **Conclusions**

1. Models of information retrieval systems were analyzed. Their main advantages and disadvantages were investigated.
2. A model of information retrieval system using domain ontologies to determine the relevance of the document was proposed.
3. An information retrieval system based on the proposed model of information retrieval was elaborated.

The work contains 86 p., 22 images, 35 sources.

**Keywords:** SEARCH ENGINES, SEMANTIC SEARCH, ONTOLOGY.