

ABSTRACT

Master dissertation: 149 p., 41 fig., 38 tables., 2 appendixes, 101 sources.

Actuality. Volume of information available to user is so great that it is difficult to distinguish something specific and necessary through a regular review. Therefore, systems that help analyze and orientate data are of great value.

Recommendations based on internal resource are common feature of social networks, but it uses only its own content for processing. There are also recommended systems of other structures that do not take into account the social component of the user and, therefore, use a narrow range of information to formulate recommendations. Such systems are limited either in the information about the objects of the recommendations or in the user data, which does not allow to create complete and satisfactory offers.

In connection with the desire to solve both problems of one area, it is relevant to develop a system based on social networks that help in personalizing the user and compiling his psychotype by his profile.

Relationship of work with scientific programs, plans, themes

The work was carried out at the Department of Automated Systems for Information Processing and Management of the National Technical University of Ukraine "Igor Sikorsky Kyiv Politechnic Institute" within the framework of the theme "Intellectual Data Analysis".

Goal and tasks of research. The goal of the dissertation is to increase the relevance of personified recommendations. To do this it is needed to accomplish the following tasks:

- to characterize the existing methods for defining recommendations and perform their comparative analysis;
- to formalize the task of providing personal recommendations;

- to implement and analyze selected algorithms for providing recommendations;
- to propose a method of increasing recommendations relevance;
- to develop a software implementation of the developed method;
- to perform results analysis.

Object of research: process of providing personalized recommendations.

Subject of research: methods of personified data analysis and recommendations provision on their basis.

The research methods used in this paper are based on machine learning and expert assessment methods.

Scientific novelty of the obtained results. The approach to solving the problem of clustering and categorical type data sets classification and providing recommendations by improving the k-means clustering algorithm has been developed, and the method of preliminary analysis of the input sample has been researched and improved.

Test results. The results of the research were tested on:

- 4th international scientific and practical conference "Actual problems of modern science", Kyiv;
- scientific-practical conference "Informatics and Computing IOT-2018", Kyiv;
- VI Sikorsky Challenge Startup Competition, October 11-12, 2017;
- Supervisory Board of Ukroboronprom, March 2018.

Publications. On the materials of the dissertation was published 4 scientific works:

- - article in the collection "Project Management, System Analysis and Logistics", Series "Technical Sciences" (ISSN: 2309-8635);
- abstract of the report at the 8th International Scientific and Technical Conference "Modern Directions in the Development of Information and Communication Technologies and Control Tools", Kharkiv;

- Abstracts of the report at the 4th International Scientific and Practical Conference "Actual Issues of Modern Science", Kyiv;
- Abstract of the report at the scientific-practical conference "Informatics and Computing IOT-2018", Kyiv.

RECOMMENDER SYSTEMS, CLUSTERING, CLASSIFICATION OF DATA, ANALYSIS OF SOCIAL NETWORKS, CONSTRUCTION OF PSYCHOTYPE, MACHINE LEARNING