

ABSTRACT

Master's dissertation: 105 pp., 16 figs., 27 tables, 81 sources, 1 appendix.

Topicality. An important issue today is the issue of waste management in general and sorting in particular [1], due to the negative impact of mankind on the environment and the environment, measured in quantitative terms. According to the State Statistics Service of Ukraine, in 2019 Ukraine generated 441.5 million tons of waste, which is 25.3% more than in 2018. As for the dynamics of waste disposal, it dropped to 40% [2].

Moreover, according to Article 32 of the Law of Ukraine from January 1, 2018, the disposal of unprocessed household waste is prohibited [3], so de jure all waste in the country must be disposed of separately, in particular, divided into hazardous, suitable for reuse, as well as those to be buried.

This raises questions about how to teach Ukrainians to sort and form a habit of doing so. Ukrainians should also be encouraged to avoid processes such as the use of inorganic products that cannot be processed.

The main problem that arises in those who are just beginning to sort - the lack of understanding of how to separate waste, to which points to deliver sorted and how to handle hazardous waste. working name "Sortui" [3].

The project is also relevant due to the development of the segment of social responsibility in Ukraine, when large companies and individuals do not wait for help from the state, but implement changes today in an unstable political, economic and epidemiological situation.

Connection of work with scientific programs, plans, themes. The work was completed at the Department of Automated Information Processing and Control Systems of the National Technical University of Ukraine "Kyiv Polytechnic Institute. Igor Sikorsky", as well as V.M.Glushkov Institute of Cybernetics of the NAS of Ukraine within the curriculum "Development of methods for pattern recognition" (№ DR 0117U0009100).

The purpose of the study is to facilitate the process of waste sorting by the user by recognizing the types of garbage by image, providing information on current sorting rules and collection points for recyclables.

The tasks of the study are to create a system that will recognize the type of waste by image and provide the user with current sorting rules and data on the location of recycling points according to waste type and region, as well as retaining existing and attracting new users.

The object of research is the process of selecting rules for waste management.

The subject of research are the differential games and methods of recognizing types of the recyclables.

The research methods. The following methods were used to to perform the tasks: theory of differential games; system analysis (during the design of the system of recommendations); computer simulation (during the development and experimental study of efficiency).

The scientific novelty of the obtained results lies in the study of differential game with information delay, integration of research results into the recommendation system.

The practical significance of the obtained results is the social orientation of the system of recommendations for waste management, which meets the cognitive needs of the Ukrainians.

Publications. The work materials were published in the journals "Scientific Review" and "Cybernetics and Systems Analysis" (2021), as well as in the VI All-Ukrainian Scientific and Practical Conference of Young Scientists and Students "Management and Technology" Information.

WASTE SORTING, DIFFERENTIAL GAMES, DELAYED INFORMATION, SOCIAL INITIATIVES, IOS, ANDROID, WASTE MANAGEMENT.