ABSTRACT

Explanatory note size – 104 pages, contains 34 illustrations, 22 tables, 6 applications, 10 references.

Topicality. Examines the problem of processing requests in support services, shows the main features of existing solutions to the problem, their advantages and disadvantages. The need to develop a software tool for load balancing of the support service portal has been identified.

The aim of the study. The main target is to improve the efficiency of the IT department's support service by developing software that automates the processes of classifying and distributing text requests based on adapted text analysis models. Achieving this goal involves partially automating the processing of requests to speed up their handling. The criterion for effectiveness is the speed of processing requests.

The object of research: load distribution software for a support service portal.

The subject of research: methods and means of automating the process of processing requests and determining the urgency of a request based on its text.

To achieve this goal, the **following tasks** were formulated:

− analyse existing approaches and software tools for automating request processing in IT support services;

− develop a hierarchical model for classifying text requests that filters relevant requests and identifies the specific type of IT problem;

− develop an algorithm for the automatic distribution of requests among employees based on the defined type of task;

− implement a software tool in the form of a web portal that integrates the developed hierarchical model and task distribution algorithm.

− evaluate the effectiveness of the proposed solution.

The scientific novelty of the results of the master's dissertation lies in the further development of the application of NLP models for the automation of IT support processes. The result was achieved by integrating hierarchical

classification with a task distribution algorithm that takes into account the competencies and workload of performers.

The practical value of the obtained results is lies in the fact that a load distribution software tool has been developed that will reduce the time required to process requests, thereby increasing the speed of response to problems and improving the efficiency of the organisation. The developed module can be used in the work of IT support services of various companies.

Relationship with working with scientific programs, plans, topics. Work was performed at the Department of Informatics and Software Engineering of the National Technical University of Ukraine «Kyiv Polytechnic Institute. Igor Sikorsky».

Approbation. The scientific provisions of the dissertation were tested at the Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2025).

Publications. The scientific provisions of the dissertation were published in:

1) Tsukanova M.S., Likhouzova T.A. Software tool for distributing the load of a support service portal based on a model for text summarisation // IX International Scientific and Practical Conference of Young Scientists and Students ‘Software Engineering and Advanced Information Technologies’ (SoftTech-2025). Conference materials. 26-28 November 2025. Kyiv.

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