

ABSTRACT

Explanatory note size – 75 pages, contains 43 illustrations, 25 tables, 3 applications, 38 references.

Topicality. Examines the problem of text generation in Ukrainian, highlighting the main features of existing natural language generation tools, their advantages and disadvantages. Identifies the need to develop a generation method that integrates a morphological analysis tool, a large language model, an LDA model, and a tool for detecting and correcting grammatical mistakes.

The aim of the study. The main target is to improve the quality of generated Ukrainian texts given a specific topic and set of keywords.

The object of research: software for Ukrainian text generation using large language models (LLM) and morphological analyzers.

The subject of research: methods, software architecture, and mechanisms of integrating morphological analysis with large language models to improve the quality of generated Ukrainian texts.

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

- analysis of existing solutions;
- research on morphological features of the Ukrainian language;
- development of a method for Ukrainian text generation;
- integration of LLM with morphological analyzer;
- software prototype development;
- experimental research and analysis of results;
- assessment of the effectiveness of the proposed solution.

The scientific novelty of the results of the master's dissertation is that a method for generating Ukrainian texts was developed by integrating large language models with a morphological analyzer, applying the LDA categorization method, and using LanguageTool error correction technology, which results in improvement of the quality for the generated texts.

The practical value of the obtained results is the development of software that combines large language models with morphological analyzers, contributing to the improvement of the quality of automatically generated Ukrainian texts on a given topic and set of keywords. This expands the potential applications of such software in various domains (education, science, media, etc.).

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 Sixth Internationale Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2024) - Kyiv.

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

1) Dovhopoliuk R. R. Method for text generation in Ukrainian / R. R. Dovhopoliuk, Y. O. Oliinyk // Proceedings of the Sixth International Scientific and Practical Conference of Young Scientists and Students "Software Engineering and Advanced Information Technologies" (SoftTech-2024) - Kyiv: NTUU "KPI them. Igor Sikorsky", May 19-21, 2024.

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