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DEVELOPMENT OF AN INTELLIGENT WEB SYSTEM FOR AUTOMATED RESUME FORMATION BASED ON GENERATIVE MODELS

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In the context of society's ongoing digital transformation, the automation of text processing has become increasingly important. One of the key tasks in the employment domain is creating a high-quality professional resume, which serves as a primary tool for candidate self-presentation. At the same time, a significant number of candidates lack the skills necessary for effective self-presentation, leading to low-quality resumes and reduced employment prospects. Existing resume-building services are predominantly template-driven and do not provide adequate personalization [1, 2].

In this context, the use of generative artificial intelligence is particularly relevant, as it enables automated text creation, improves its quality, and enables adaptation to specific labor market requirements. Therefore, the development of intelligent systems for resume generation represents an important and promising direction in modern information technology.

The aim of this study is to develop an intelligent software module that automates the generation of personalized resumes from a brief textual description provided by the user, leveraging modern natural language processing techniques and generative artificial intelligence.

The object of research is web-oriented intelligent systems for text content generation, while the subject of research is the methods and tools for implementing a software module for automated resume creation.

The developed module is an intelligent software component designed to automatically generate professional resumes from a user's textual input. Unlike existing solutions, the proposed module provides not only template-based resume generation via predefined fields but also context-oriented text generation that considers the user's individual characteristics, professional experience, skills, and career goals. This approach enables the creation of more informative, adaptive, and personalized documents.

The module is implemented as part of a web application and uses a client-server architecture. Its main function is to generate a structured resume from a brief user description. The user provides basic information about their experience, skills, education, and career objectives, after which the system automatically generates a complete document that meets modern standards.

The module consists of several interconnected components:

A data processing module, which performs initial validation, normalization, and preparation of the input text for further generation.

A content generation module, responsible for generating the resume text, and integrated with a generative language model via API [3].

A structuring module that organizes content into logical sections such as summary, experience, education, and skills, ensuring textual coherence.

A data storage module, which interacts with the database and enables saving, editing, and reusing generated resumes.

An export module that generates the final document in PDF format.

The interface for previewing the generated resume, including download options, explanations of processing stages, and the resume generation sequence diagram, is presented in Figures 1 and 2.

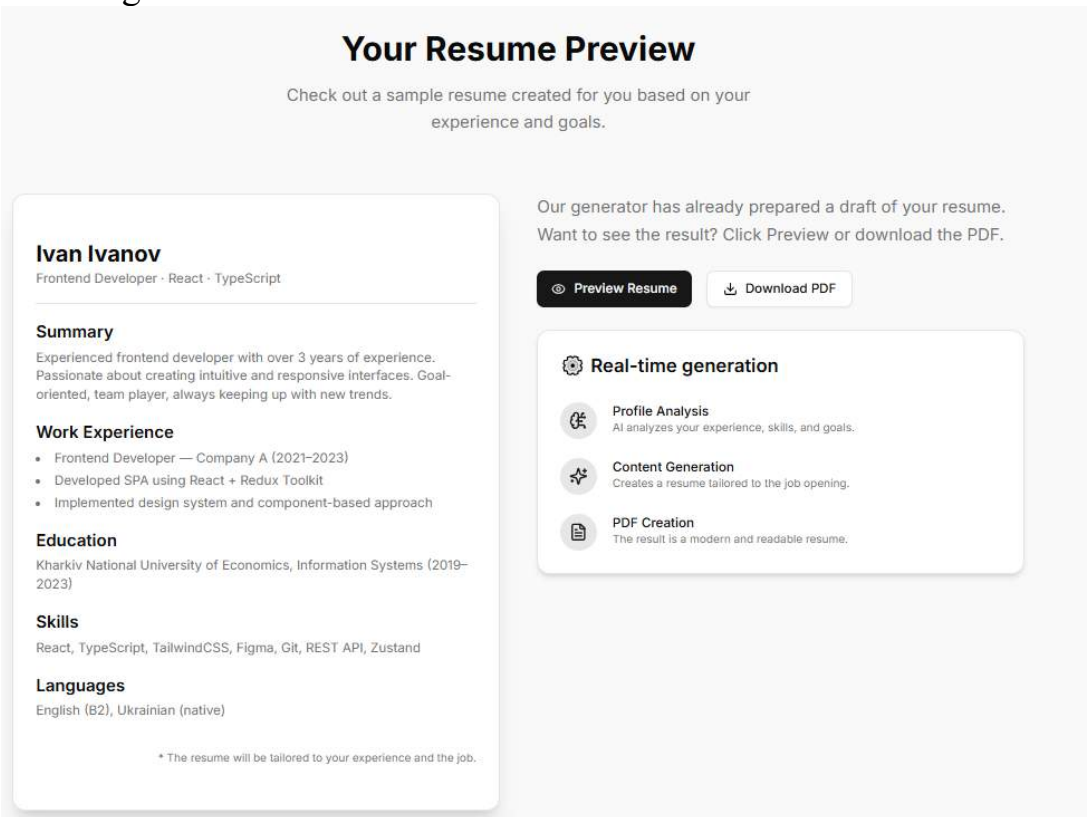

Figure 1. Preview interface of the generated resume with download options and an explanation of the processing steps.

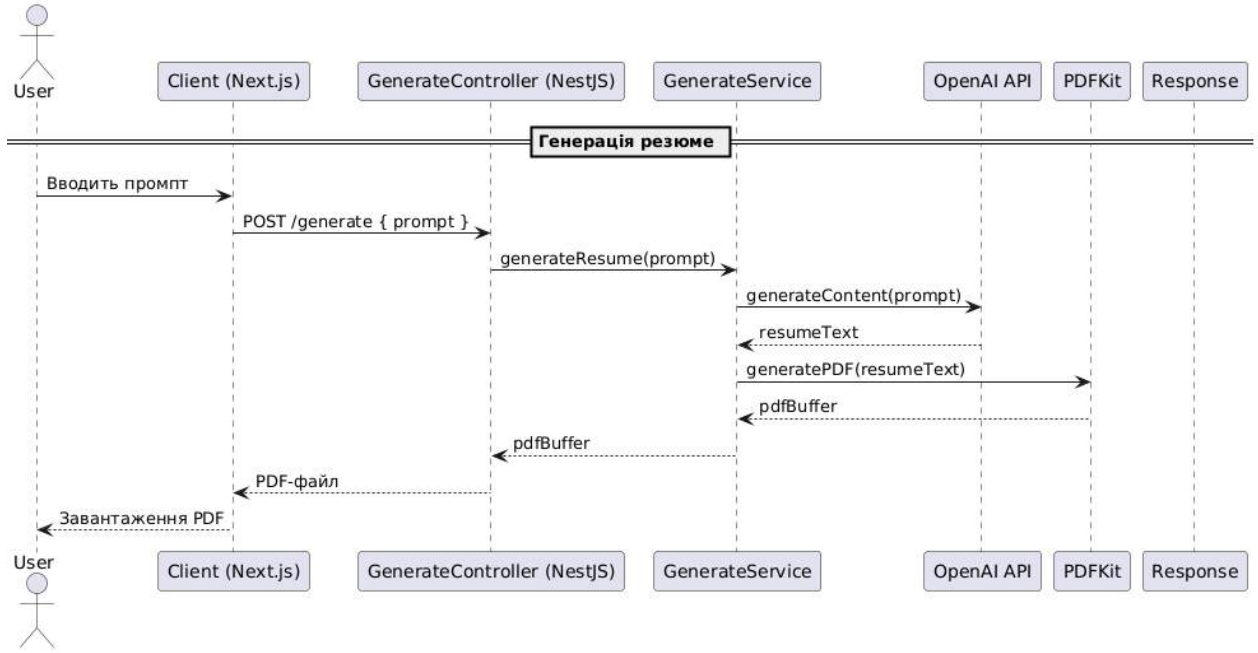

Figure 2. Sequence diagram of resume generation.

An additional advantage of the module is the possibility of further functional expansion. In particular, the system can be enhanced with mechanisms for adapting resumes to specific job vacancies, multilingual support, integration with job search platforms, or automatic analysis of candidate suitability against employer requirements.

Within the scope of this work, the following practical results were obtained, namely:

A system architecture based on a client-server model was developed, ensuring modularity, scalability, and ease of further functional expansion.

The server-side was implemented using NestJS and TypeScript, enabling the development of a structured, reliable backend for processing user requests [4, 5].

A client interface was built with Next.js, providing intuitive user interaction with the system and convenient data input.

A generative language model was integrated, enabling automatic resume text generation based on context, style, and specified parameters.

Functionality for generating PDF documents was implemented, allowing users to obtain a ready-to-use resume in a standard format.

User data was stored in a PostgreSQL database, enabling the editing and reuse of created resumes.

An authentication and authorization system was implemented to ensure secure access to users' personal data.

During testing, it was established that the system operates stably and correctly performs all intended functions. Evaluation of the generated resumes showed that they have a logical, clear structure; comply with modern formatting requirements; contain relevant formulations of professional experience and skills; and can be adapted to different job vacancies.

Furthermore, it was found that the use of generative artificial intelligence significantly reduces resume creation time compared to the traditional approach, while also improving the quality of textual content even for users without experience in writing business documents.

The conducted testing of the software module confirmed its functionality and effectiveness. The results demonstrated that the system could generate logically structured, grammatically correct, and meaningful resumes that meet modern labor market requirements. The use of generative artificial intelligence significantly reduces document creation time and improves its quality.

The practical significance of the results lies in the possibility of using the developed module in recruitment systems, job search platforms, and companies' internal HR systems. The proposed solution can be scaled and integrated into more complex information systems.

Thus, the work implemented an intelligent module for automated resume generation that combines modern web application development approaches with the capabilities of generative artificial intelligence. The results obtained confirm the feasibility of using such technologies to improve the efficiency of text content creation processes and open the door to further development of systems of this class.

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QUANTITATIVE EVALUATION OF BLOCKCHAIN CONSENSUS MECHANISMS: THE CONSENSUS EFFICIENCY INDEX (CEI) APPROACH

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Abstract

This study introduces a formalized framework for the comparative evaluation of blockchain consensus algorithms, addressing the critical challenge of balancing security, scalability, and energy efficiency. We propose a novel quantitative metric, the Consensus Efficiency Index (CEI), designed to objectively rank algorithms across diverse application domains. By formalizing consensus operations as a tuple C = (S, P,

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