

SECTION XXII. PEDAGOGY AND EDUCATION

DOI 10.36074/logos-18.08.2023.53

ABOUT CHATBOTS, THEIR RELEVANCE AND IMPORTANCE FOR IT STUDENTS

ORCID ID: 0000-0003-2228-9389

Bazhan Stanislav

Teacher of computer and mathematical disciplines
*Separate structural unit "Technological Professional College
of Dniprovsky State Technical University"*

UKRAINE

The rapid development of the IT industry in recent years has brought about revolutionary advancements and transformative changes across various sectors of society, impacting how we live, work, and interact with technology. In light of these profound shifts, it becomes increasingly imperative for individuals and organizations to recognize the significance of aligning with these emerging trends and embracing the ever-evolving landscape of the IT field to stay competitive and foster innovation.

Acquiring practical skills is of paramount importance for students pursuing IT specialties, as it ensures their preparedness for the challenges of the modern technological industry. The demand for professionals with up-to-date knowledge and experience creates a highly competitive job market that is constantly evolving. Gaining practical skills enables students to assimilate theoretical knowledge with ease and empowers them to translate their ideas into innovative products. This fosters entrepreneurship and creativity, while also fostering the ability to collaborate with professional teams to address real-world technological challenges.

Example of acquiring relevant practical skills for IT students is the study of chatbot development technologies. The relevance of chatbots in the modern world is increasing due to their ability to revolutionize the way people interact with technology and access information. With the continuous advancement of artificial intelligence, chatbots can provide personalized and efficient customer support, answer queries, solve problems, and offer an interactive experience. They have found applications in various fields, from business and healthcare to education and tourism, enhancing the facilitation and optimization of daily tasks and processes. Chatbots' learning capabilities to adapt to changing user needs and ensure secure information exchange make them a powerful tool for improving user experience and enhancing business efficiency. Thus, the significance of chatbots in the contemporary world is growing, and their impact on various aspects of life continues to expand, making them incredibly valuable for further technological advancements and optimizing human-machine communication.

Chatbots can be categorized into several types based on their capabilities and purposes. Rule-based chatbots operate on predefined sets of rules and responses, limiting their adaptability but making them suitable for handling specific tasks with a clear structure. On the other hand, AI-powered chatbots, equipped with advanced NLP and Machine Learning algorithms, can engage in more natural and context-

aware conversations, allowing for a higher degree of personalization and responsiveness. Furthermore, there are task-specific chatbots tailored for particular domains like customer support, healthcare, or e-commerce, optimizing their efficiency in addressing specialized queries and concerns.

As the field of chatbot technology continues to evolve, incorporating cutting-edge AI advancements and innovative programming approaches, the potential for creating sophisticated and seamless conversational experiences is bound to expand further, leading to an increasingly transformative impact on various industries and human-machine interactions.

To embark on creating their own basic chatbots and successfully implement real chatbots for clients, students need to grasp several key aspects. Firstly, they must possess knowledge of programming fundamentals, including programming languages such as Python, JavaScript, and others commonly used in chatbot development. Additionally, understanding the workings of APIs and web services is essential to facilitate interaction with external data sources. Moreover, to effectively realize chatbots, students should explore various frameworks and platforms that offer convenient tools for development and functionality integration. Safety and ethics are paramount considerations that cannot be overlooked, and students should familiarize themselves with principles governing data security and ethical standards in chatbot creation. Lastly, mastering testing and refinement methods becomes a crucial step to ensure the quality and efficacy of chatbots before deployment in real-world business or customer-oriented settings. Overall, proficiency in these areas will empower students to develop rudimentary chatbots and undertake professional endeavors to meet the demands of the contemporary technological market.

Chatbots can be created using web-platform constructors, offering a convenient and accessible development approach for a wide range of users, even those without extensive programming knowledge. These web-platforms typically provide interfaces that facilitate easy configuration of bot functionality, utilizing ready-made modules and templates. Users are offered the flexibility to choose conversation structures, handle typical queries, and integrate with external systems through APIs.

Such web-platform empower the development of bots for customer support, productivity enhancement, and automation of routine tasks, greatly facilitating the integration of chatbots into business processes. However, it is essential to acknowledge that constructors may have their limitations compared to specialized developments, and in some cases, low-level programming may be necessary to achieve specific functional requirements. Nonetheless, building chatbots using web-platform constructors opens possibilities for quick and convenient realization of chatbot ideas without significant investments in custom software development. Chatbots can be created by writing program code, as well as using web platforms, which gives a wide range of opportunities for students.

The study of chatbot development is a crucial competence for students in computer-related disciplines. The relevance of this topic stems from the increasing popularity and widespread application of chatbots across various domains of life. Learning chatbot development fosters programming skills, natural language processing (NLP), interaction with APIs and web services, while also contributing to a deeper understanding of artificial intelligence and practical implementation of innovative projects in diverse fields. For aspiring engineers and programmers, this represents a valuable addition to their professional portfolios and provides a competitive edge in the job market.
