

CHATGPT INFLUENCE IN WORK ENVIRONMENT OF IT COMPANIES IN MACEDONIA

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Abstract: The rapid integration of advanced artificial intelligence technologies is revolutionizing various industries, with the Information Technology field being at the forefront of this transformation. This paper examines the influence of ChatGPT, a state-of-the-art language model developed by OpenAI, on the work environment of IT companies in Macedonia. ChatGPT's applications in automating routine tasks, enhancing customer support, assisting with coding and debugging, and managing knowledge significantly boost productivity and foster innovation. By providing real-time solutions and improving communication, ChatGPT supports a more efficient and collaborative work environment.

To gain a deeper understanding of ChatGPT's impact, we conducted a comprehensive survey involving three IT companies in Macedonia. The survey explored the extent of ChatGPT's adoption, its perceived benefits, and the challenges encountered during its integration. The findings reveal that ChatGPT has been instrumental in automating repetitive tasks, thereby allowing employees to focus on strategic and creative endeavors. Furthermore, it has improved customer satisfaction by providing timely and accurate support.

However, the deployment of ChatGPT also presents challenges, including ethical considerations, integration complexities, and the need for employee adaptation. Through detailed analysis and case studies of the surveyed companies, this paper highlights the practical benefits and potential obstacles of integrating ChatGPT into existing workflows. The results underscore ChatGPT's transformative potential in enhancing operational efficiency and driving innovation while emphasizing the importance of addressing ethical and practical implementation challenges. This study provides valuable insights for IT companies considering the adoption of AI technologies like ChatGPT in their work environments.

Keywords: ChatGPT, AI, workflow.

1. INTRODUCTION

We live in a time when the possibilities of creating an artificial mind and machines that work and react like human beings are actualized, implemented, and significantly change the everyday life and the world around us. In recent decades, artificial intelligence (AI) (Nilsson, 2009) has advanced in great strides and what was once considered irrational and impossible, today is increasingly becoming commonplace. And it will rise again. With the introduction of new algorithms, techniques and models, AI experiences have become more and more important, and one of the most significant aspects is the development of conversational agents like ChatGPT (Wu et al., 2023). AI is a vast and important area of computer science that focuses on developing algorithms and models that enable computer systems to perform tasks that would normally be they were performed by intelligent people, professionals from the field of informatics and programming.

The concept of AI has a long history, with roots stretching back to the early days of manual data processing. The idea of creating machines that can think and perform logical operations is symbolically associated with the early 20th century, but the growth of AI became exponential with the advancement of handheld computers in the second half of the 20th century.

With the introduction of machine learning, AI has taken on a new dimension. Machine learning allows systems to learn and adapt based on data, without explicit programming. Deep learning, which is an enhanced form of machine learning, uses neural networks with many layers to analyze complex data and perform tasks such as image recognition and natural language processing.

AI is not only a technology, but also a field that deals with ethical and philosophical issues. As it develops, challenges arise related to privacy, security, and the impact of AI on society. It is important to consider the proper use and regulation of AI to avoid misuse and potential negative consequences.

Basically, Artificial Intelligence presents a fascinating discovery that continues to evolve as technology aids the development of intelligent systems that will not only improve our daily lives, but also change the way we understand and use technologies.

For this paper a research survey was conducted that is dedicated to the impact of ChatGPT in IT companies in Macedonia. The goal is to understand how this advanced technology affects daily work processes, communication and creativity in the work environment. ChatGPT is an advanced technology in the field of artificial intelligence, developed in order to generate text according to the input context. During the research, various aspects of the use of

ChatGPT will be investigated, such as efficiency in solving tasks, interpersonal communication and potential challenges that may arise. Considering the rapid adaptation of IT technologies in Macedonia, understanding the impact of Chat GPT on work processes is an important part of exploring the new opportunities and challenges that lie ahead of us in the field of the IT industry.

This paper is organized as follows: Section 2 provides an overview of ChatGPT, basic architecture and typical use cases. Section 3 offers an examination of use of ChatGPT in an work environment in IT companies. Section 4 addresses the methodology of the survey to assess the use case in IT companies in Macedonia. In Section 5, the results of the empirical analysis of the survey are presented and discussed. Finally, we conclude in the last section, summarizing our findings.

2. WHAT IS CHATGPT?

ChatGPT, developed by OpenAI (Roumeliotis, 2023), is a state-of-the-art language model that utilizes the Generative Pre-trained Transformer (GPT) architecture (Yenduri, 2024). The model is designed to generate human-like text based on the input it receives, making it a powerful tool for various natural language processing (NLP) applications (Kang et al., 2020). This section delves into the intricacies of ChatGPT, its underlying technology, and its potential uses.

The GPT architecture is a type of deep learning model known for its capability in understanding and generating human language. The "pre-trained" aspect of GPT signifies that the model has undergone extensive training on a diverse corpus of text before being fine-tuned for specific tasks. This pre-training enables the model to grasp a wide range of language patterns, idioms, and contextual nuances.

The development and deployment of advanced language models like ChatGPT hinge critically on the use of high-performance hardware (HPC) (Ding et al., 2023), particularly Graphics Processing Units (GPUs) (Wang et al., 2023). GPUs play a fundamental role in both the training and inference stages of ChatGPT, enabling the handling of complex computations efficiently and at scale. This section explores the intersection of ChatGPT and GPUs, detailing their significance, the technological synergy, and the advancements in GPU technology that have propelled the capabilities of ChatGPT.

ChatGPT represents a significant advancement in the field of artificial intelligence and natural language processing.

3. CHATGPT IMPLEMENTATION IN THE WORKFLOW

ChatGPT opens up new possibilities for improving communication, content creation and task automation (Raj, 2023). In work processes in IT companies, ChatGPT can be used for:

1. Improving Communication - ChatGPT can be involved in communication between teams, users and customers. Automated responses and text generation can speed up and improve communication.
2. Content Creation - ChatGPT can help create content for websites, blogs, forums, advertisements, and more. This greatly facilitates the process of creating text for IT projects.
3. Task Automation: ChatGPT can be integrated into systems for automating certain tasks, which can lead to greater efficiency within work processes.
4. Customer Support Systems - In the field of IT support, ChatGPT can provide quick and accurate responses to customers, which improves the user experience.
5. Testing and Debugging - ChatGPT can be used to simulate user interactions and to test applications, as well as to predict and debug errors.
6. Data Analysis - ChatGPT can analyze text and comments from a variety of sources, providing easy-to-view information for analyzing data and finding patterns and trends.
7. Training and Education - ChatGPT can be used for educational purposes, to create educational materials, questionnaires and online training content.

4. METHODOLOGY

Within this research, we tried to find out more about the percentage of ChatGPT usage and the level of satisfaction with using ChatGPT among IT employees in a financial consulting company. For this purpose, in order to collect data on the percentage of use and the level of satisfaction with using ChatGPT, an online questionnaire/survey, was conducted which includes 10 questions for three IT companies. The obtained feedback was used as statistical data. The purpose of the research was to find out how widespread the use of ChatGPT is, as well as to assess the general satisfaction when using it. These are the questions and answers used for the survey:

1. How would you describe your experience using ChatGPT in your interactions with it? Answers: excellent, very good, good, satisfactory, bad.

2. How often do you use ChatGPT to solve tasks or get information? Answers: very often, often, rarely, very rarely, never
3. What would prompt you to use ChatGPT often or in specific situations? Answers: lack of time for research, lack of information, curiosity
4. How would you describe your experience with the quality of responses provided by ChatGPT? Answers: excellent, very good, good, satisfactory, bad
5. Have you encountered situations where ChatGPT did not give you a satisfactory answer? Answers: very often, often, rarely, very rarely, never
6. How successful would you say ChatGPT is in understanding and interpreting your questions or commands? Answers: very often successful, often successful, rarely successful, very rarely successful, never successful
7. How would you describe the level of accuracy of the information you receive from ChatGPT compared to other sources of information? Answers: it is streamed from other sources of information, just as accurate as other sources, other sources are streamed
8. Do you think ChatGPT has the potential to help you solve tasks or problems you are facing? Answers: yes, no, I don't know, not always
9. Have you had positive or negative experiences interacting with ChatGPT? Answers: positive experiences, negative experiences, and both positive and negative experiences
10. Do you feel safe about security and privacy while using ChatGPT to chat or process information? Answers: I feel safe, I feel relatively safe, I don't feel safe, I haven't thought

5. RESULTS

The summary of the performed survey is presented in the following table:

Table 1: Results from the survey

Q1	Excellent 70%, very good 25%, good 5%, satisfactory 0%, bad 0%
Q2	very often 65%, often 30%, rarely 5%, very rarely 0%, never 0%
Q3	lack of time for research 55%, lack of information 40%, curiosity 5%
Q4	Excellent 55%, very good 30%, good 10%, satisfactory 5%, bad 0%
Q5	very often 0%, often 5%, rarely 15%, very rarely 35%, never 45%
Q6	very often successful 60%, often successful 35%, rarely successful 5%, very rarely successful 0%, never successful 0%
Q7	it is streamed from other sources of information 55%, just as accurate as other sources 40%, other sources are streamed 5%
Q8	Yes 85%, no 0%, I don't know 0%, not always 15%
Q9	positive experiences 90%, negative experiences 0%, and both positive and negative experiences 10%
Q10	I feel safe 40%, I feel relatively safe 50%, I don't feel safe 10%, I haven't thought 0%

As a discussion of the survey, the impact of ChatGPT in IT companies in Macedonia is of great importance, because it opens the way to new ways to optimize work processes and improve efficiency. ChatGPT's ability to generate text according to context can bring significant advantages to IT companies, contributing to improved communication and task automation. With this research, we analyzed the specific application of ChatGPT in an IT company in Macedonia and came to the conclusion that this technology can be integrated into the work processes.

The concrete results of this survey/research indicate that the use of ChatGPT and the level of satisfaction with the quality of responses is significant among respondents. The large percentage of participants confirmed the use of this technology and in general these chat-based systems are accepted in everyday life. This growing trend is a result of their easy availability, functionality, and the capabilities they offer. From this research we can conclude that ChatGPT has a significant positive effect on communication and interaction with users.

6. CONCLUSION

Using artificial intelligence (AI) and models like ChatGPT open new perspectives and challenges in technology and in society. AI's ability to analyze and generate text in natural language creates opportunities for automation, personalization and improvement of user experiences.

The influence of ChatGPT in the work processes of IT companies in Macedonia reveals that this advanced technology has a profound and significant effect on the way of working in the IT industry. ChatGPT's ability to

generate text according to the context of work demands not only improves communication, but also creates new ways to automate tasks and improve efficiency.

The results show that ChatGPT is successfully integrated into work processes, contributing to the improvement of creativity, speed and accuracy in various aspects of IT activities. Customer support, creation of content, communication and task automation are just some of the areas where ChatGPT takes a leading role.

This research not only identifies opportunities, but also expresses the need to constantly monitor and adapt to rapidly growing technology. In the world of innovation, ChatGPT proves to be an essential instrument for IT companies in Macedonia to secure their positions in the market and to strengthen their capacities for creativity and efficiency.

By understanding these impacts, IT companies in Macedonia can establish and form paths for successfully using ChatGPT, integrating this technology into their strategies and processes, in order to enrich their experience and stay at the top of the industry in the age of artificial intelligence. intelligence, because these technologies can be powerful tools to improve everyday life, the economy and society as a whole.

LITERATURE

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