MSc Computer Science & Big Data Analytics

ChatGPT: The advancement of knowledge and incorporation for its users. - Introduction

29/07/2023

Word Count –

# Introduction

ChatGPT, a revolutionary conversational AI developed by OpenAI, has swiftly gained popularity among the public, corporations, and academia, raising a fundamental question: how valuable is ChatGPT for its users? Introduced on 30th November 2022 [1], ChatGPT utilises Natural Language Processing (NLP) to provide comprehensive response to user queries in a conversational manner [2]. This cutting-edge technology has found to be used in diverse applications, from resolving user uncertainties to enhancing comprehension of complex topics and even generating creative content like stories or poems based on given keywords [3].

Regardless of extensive media coverage and academic interest in ChatGPT's capabilities, research focusing on a user perspective remains limited potentially due to its recent release. This area of research appears to hold significant importance, as despite the extensive discussions and numerous applications described for this tool, there seems to be limited exploration of the user's perspective regarding ChatGPT's role beyond its functionalities. Understanding not just its capabilities but also how users perceive ChatGPT's performance in meeting their specific needs remains an understudied aspect.

Despite research discovered on ChatGPT on its applicational use, such as solving programming bugs [4, 5, 6], providing education [7, 8, 10, 11], and democratising knowledge [9], there is limited research on user perception of how ChatGPT handles such applications. However, there was some notable studies from Tlili et al. [10], as well as Haque et al. [31] to begin addressing this, but due to ChatGPT’s novelty and scope of research at the time, this study aims to expand further; aimed at users from the public to gain insights into their interactions and found usefulness.

This study endeavours to bridge the existing research gap by investigating two crucial aspects: firstly, the extent to which ChatGPT contributes to knowledge enhancement for its users, and secondly, its incorporation into their daily practices of knowledge acquisition. To achieve this, a series of research questions and hypotheses have been formulated.

This study will be conducted by way of a quantitative survey to test volunteer participants whether they have used ChatGPT previously, if the use of it has improved their knowledge, and if they now incorporate ChatGPT into their knowledge-seeking process. This study has the potential to provide benefit to academics, corporations, and the public by providing insights on the usefulness of ChatGPT and could also inspire further research in this area.

The research questions aim to ascertain whether users are actively utilising ChatGPT, whether its usage results in improved knowledge, and if users have adopted ChatGPT as a regular tool for knowledge acquisition. The hypotheses, on the other hand, aim to test the following: firstly, whether the utilization of ChatGPT increases the likelihood of users enhancing their knowledge on a specific topic; and secondly, whether users who experience knowledge enhancement through ChatGPT are more likely to integrate it into their routine for knowledge acquisition. By systematically exploring these research questions and hypotheses, this study seeks to shed light on the role of ChatGPT in empowering users with knowledge and shaping their knowledge-seeking behaviours.

Due to limited time and resources, only one survey will be conducted with mostly closed questions to gather prompt and enriching feedback. Additionally, the analysis will be limited to the collected data without comparison to other datasets, due to the lack of research in this area. It is important to note that bias may be introduced in this study as participants interested in the topic may be the only ones who choose to participate.

When the survey was conducted, informed consent was provided from each participant, clarifying requirements, expectations, and the option to opt out. Participant data was anonymised to protect identity, with characteristics (occupational status, and course studied where applicable) used for research purposes only. The study allowed participants of any gender, sexual orientation, race, or belief and beyond. No conflicts of interest were anticipated, and there is no expected exposure to risks or dangers for participants.

This study is organised into distinct chapters, each contributing to the exploration of ChatGPT user knowledge enhancement and incorporation. The following is an outline of the structure and content of each chapter:

1. Introduction: The first chapter serves as a gateway to the research, providing an overview of the selected topic and addressing the identified knowledge gap. It outlines the specific aims and objectives of the study, which are designed to bridge the existing gap in understanding. Additionally, this chapter elucidates the relevance of the research and provides insights into the research methodology employed to conduct the investigation.
2. Related Work: The second chapter reviews and evaluates relevant literature related to ChatGPT, with a specific focus on its applications in enhancing user knowledge, incorporation into daily routines, and user perceptions. By analysing existing research, this chapter sets the context for the subsequent empirical investigation.
3. Research Methodology: The third chapter explains in detail the research hypotheses and questions formulated for the study. It provides clarity on the research design, data collection methods, and data analysis techniques used to gather and interpret the survey responses. This chapter ensures the methodological robustness of the research.
4. Result Analysis: The fourth chapter presents the results obtained from the analysis conducted on the collected survey response data. Graphical and tabular representations of the findings are provided to facilitate a clear understanding of the results. Additionally, this chapter offers contextual information about the survey and its participants.
5. Discussion of Results: The fifth chapter interprets the results found in the previous chapter, comparing them against the original research hypotheses and questions. Furthermore, it explores unexpected insights discovered during the analysis and relates the findings to the existing literature. This comprehensive discussion adds depth to the interpretation of results.
6. Conclusion: The final chapter synthesises the key findings, revisiting the research objectives to summarise the main outcomes. It emphasizes the most significant recommendations for future research that could expand upon the current work presented in the study. The conclusion highlights the implications of the study and reinforces the contribution of this research to the broader field of ChatGPT and user-centric AI applications.