

Evaluating ChatGPT as a Recommendation System: A Comprehensive Study

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1 Introduction

- **Problem Description:** This project is inspired by "Is ChatGPT a Good Recommender? A Preliminary Study". We aim to expand upon this initial inquiry, exploring ChatGPT's capabilities in five recommendation tasks: rating prediction, sequential recommendation, direct recommendation, explanation generation, and review summarization.
- **Project Objective:** To critically evaluate ChatGPT's effectiveness and versatility in these diverse recommendation scenarios.
- **Importance:** This research is crucial for advancing AI-driven recommendation systems, offering insights into both the capabilities and limitations of current AI models.

2 Related work

- **Literature Review:** An extensive review of prior research on Large Language Models in recommendation systems, building upon insights from the mentioned study and additional related literature.
- **Contextual Analysis:** The study aims to fill the research gap by providing a detailed analysis of ChatGPT in varied recommendation tasks, informed by insights from various key publications.

3 approach

- **Methodology:** Employing prompt engineering and few-shot learning with ChatGPT to conduct experiments in the five recommendation tasks.
- **Evaluation Criteria:** Performance will be measured based on accuracy, relevance, user

satisfaction, and the ability to generate contextually appropriate recommendations.

3.1 Schedule

- **Initial Phase (Weeks 1-2):** Comprehensive literature review and methodology development.
- **Experimentation Phase (Weeks 3-4):** Setting up experiments for each of the five tasks and beginning data collection.
- **Analysis Phase (Weeks 5-6):** In-depth data analysis, identifying patterns, strengths, and limitations in ChatGPT's performance.
- **Reporting Phase (Week 7):** Synthesizing findings into a detailed report, discussing implications and future research directions.

4 Data

- **Dataset:** Utilizing the Amazon Beauty dataset for its relevance in testing recommendation tasks.

5 Tools

- **Primary Tool:** ChatGPT for recommendation tasks.
- **Computational Resources:** Google Colab Pro for enhanced processing capabilities.
- **Supporting Tools:** Data analysis and visualization tools, and LaTeX for report preparation.

References

- [1] Is ChatGPT a Good Recommender? A Preliminary Study. Available at: <https://arxiv.org/abs/2304.10149>.

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- [3] Evaluating ChatGPT as a Recommender System: A Rigorous Approach. *Available at:* <https://arxiv.org/abs/2309.03613>.
- [4] Uncovering ChatGPT's Capabilities in Recommender Systems. *Available at:* <https://arxiv.org/abs/2305.02182>.
- [5] Large Language Models for Generative Recommendation: A Survey and Visionary Discussions. *Available at:* <https://arxiv.org/abs/2309.01157>.
- [6] Leveraging Large Language Models for Sequential Recommendation. *Available at:* <https://arxiv.org/abs/2309.09261>.
- [7] Recommendation as Instruction Following: A Large Language Model Empowered Recommendation Approach. *Available at:* <https://arxiv.org/abs/2305.07001>.