Exploring User Prompting Behavior in LLM Interactions

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ABSTRACT

Artificial Intelligence (AI) plays an increasingly important role in the daily lives of millions of people. Large Language Models (LLMs) are the most prominent implementation of AI that is used not only by experts, but equally by ordinary users as well. LLMs can respond to any textual input (prompts) with human-like answers, leveraging the training data that was used to implement the model. Even though prompting LLMs seems very straightforward, the question arises if it is possible to streamline the interactions with said models in order to optimize outputs. We explore the behavior of a randomized trial of 100 interactions of users with LLMs that are publicly available on ShareGPT. The goal of this investigation is the discovery of recurring patterns in behavior and the evaluation of human tendencies as well as biases of users when interacting with AI models in order to understand current behaviors and propose optimization opportunities.

1 INTRODUCTION

2 BACKGROUND AND RELATED WORK

2.1 Large Language Models (LLMs)

○ General information on LLMs, such as their workings, training data, text generation, real world usage, and current limitations

2.2 User Interaction with LLMs

○ Description of LLM use cases and related work, primarily paying attention to ordinary frequent users as we lay a particular focus on daily, and not only expert usage

3 STUDY ON USAGE PATTERNS OF LLM USERS

3.1 Intro and Research Objective

○ Overview of the study goal, the methodology, and the individual steps that will be taken during its course

3.2 Research Method: ShareGPT

○ Information on the ShareGPT platform, its user base, its suitability for the study, and which data we are going to use

3.3 Study Results

3.3.1 Findings. ○ Listing of the results of the study, potentially segregated into categories that can be defined in advance

3.3.2 Observable Trends. ○ Objective analysis of results with a particular focus on observable trends in user behavior and data patterns

4 DISCUSSION

4.1 Observed Behaviour (Synthesis)

○ Subjective evaluation of findings

4.1.1 Why do users interact with LLMs the way they do? ○ Reasoning and informed assumptions on the causes of observed behavior

4.1.2 Prompt Improvement Possibilities. ○ Proposition of ways to enhance prompts as well as associated results, incorporating findings from related research

4.2 Outlook and Future Developments

4.2.1 Auto-GPT. ○ Introduction to future developments in the realm of LLM interaction, such as AI-based agents which may execute prompts autonomously in the future

4.2.2 Prompt Engineering. ○ Focus on the newly emerging discipline of prompt engineering which is a direct result of the increased significance of LLMs and required competencies for successful interaction

5 CONCLUSION

Introduction

Test Intro

With the exponential growth of network traffic and the fast emergence of technological evolutions like the Web 4.0, demand for adapted concepts to cope with associated challenges arises inevitably. One of the main challenges is the efficient storing, persisting, and querying of increasing amounts of data. Today, connectivity is ever prevalent, which is reflected in the fact that countless devices can communicate via the internet, such as refrigerators, vending machines, or even toothbrushes. This ongoing evolution, often referred to as the iot, is one of the fastest expanding fields of modern technology and is characterized by fast accumulation of short-lived, frequently varying network data. Due to this characteristic, monitoring of changes and developments is particularly challenging, especially if attempted in retrospect.

To represent networks in the realm of iot, as well as interconnected systems in general, graph databases are an increasingly popular solution. Their widespread adaption can be mainly attributed to their innovative possibilities to store data in an unstructured and flexible way, as well as their accurate representation of certain real world scenarios, such as sensor networks.

Data persistence is a prerequisite for the analysis of historical records. It centers around the longterm storage, accessibility and usability of former states of information. Achieving persistence of information is particularly challenging due to the diverse set of requirements attached to it, such as immutability and comprehensibility of past data to enable auditability and traceability of the past.

What needs to be established is a concept that allows efficient management of the entire lifecycle of network data, beginning with the capturing of new information, to storing it in the longterm, and finally being able to query and access historical records. Data overhead should be minimized at the same time. Research has been conducted already to achieve persistence of data structures in general, as well as of key-value stores or hierarchically structured information. We will investigate these approaches and propose a conceptual approach that integrates existing knowledge, while simultaneously leveraging new technologies in the form of graph databases in order to achieve a scalable and reliable time-based concept for persisting and querying network data.