Contribution ID: **166** Type: **Workshop or Hackathon**

Breaking the Chat Barrier: A Workshop on Dynamic LLM Interfaces

Tuesday 25 February 2025 16:00 (1 hour)

Large Language Models (LLMs) have revolutionized the field of artificial intelligence, offering numerous new applications in natural language processing, such as text generation, translation, sentiment analysis and conversational interfaces. Early studies show that LLMs have not only been utilized in everyday life but have also found their way in daily work of researchers, for example, in assisting with writing code and data analysis [1,2]. This integration in the daily work of researchers has boosted workflows by outsourcing mundane tasks, allowing scientists to focus on complex problem-solving and creative endeavors.

However, the conversational interfaces widely used to interact with these models come with inherent limitations in context management. The design of chat-based interfaces, with their linear and chronological structure, constrains users' ability to refine, reorder, or selectively manage the interaction history. This often leads to bloated contexts and diminished response quality, especially in complex scenarios where LLMs are used for tasks like programming, iterative analysis, or text revision that require more nuanced and dynamic interactions.

With support from AI-Hub@LMU, we aim to develop a novel, user-friendly interface for Large Language Models that overcomes the limitations of traditional chat-based systems. Our goal is to create a dynamic user interface that empowers users with fine-grained context management, providing greater flexibility and control over structuring the LLM's input during interactions. Our development process follows the User-Centered Design (UCD) methodology, in accordance with DIN EN ISO 9241-210, encompassing four phases: understanding the context of use, determining user requirements, drafting design solutions, and evaluating these solutions.

In this workshop, we want to gather previous experiences of using LLMs with the participants, particularly in the context of scientific work, and to identify the challenges and barriers they face. Based on these insights, we identify collaboratively with the attendees requirements for a dynamic chat interface and discuss different visualization concepts. The workshop will include exercises such as persona creation and journey mapping to better understand user needs and explore different design solutions.

The outcomes of this workshop will directly inform the development of the dynamic chat interface, which we plan to release as open-source software. As this project is still in its early stages, the workshop will focus primarily on conceptual discussions rather than hands-on coding. We welcome all deRSE participants, regardless of prior programming experience or familiarity with LLMs.

This workshop aligns with the deRSE25 topic of "AI and ML in research contexts", by addressing the intersection of AI and usability in research software, fostering collaborative engagement to gather insights on how to enhance the practical integration of LLMs in the daily work of researchers.

[1] Nejjar, M., Zacharias, L., Stiehle, F., & Weber, I. (2023). Llms for science: Usage for code generation and data analysis. Journal of Software: Evolution and Process, e2723. https://doi.org/10.1002/smr.2723
[2] Le, F. (2023). How ChatGPT is transforming the postdoc experience. Nature, 622, 655.https://doi.org/10.1038/d41586-023-03235-8

I want to participate in the youngRSE prize

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Track Classification: Research Software: AI and ML in a research context