Institute of Interactive Systems and Data Science
Technische Universität Graz

Human-AI Interaction: Business Case Discussions with an LLM-powered Chatbot

Master thesis
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Studies: Software Engineering and Management, Computer Science, Computer Science Teach Education, Computational Social Systems

When learning new concepts, typical steps in the learning path are: to memorize a concept and its definition, to be able to explain in own words, and to be able to apply concepts to examples. Further mastery would mean to adapt concepts to be able to apply them in atypical or in any way more complex cases.

In prior work, it has been shown that a mixed web-based learning and chatbot-environment can facilitate these steps: Presenting concepts, and supporting memorisation, as well as students' self-explanation of concepts works in web-based environments. Further, a chatbot can scaffold the development of application of a concept towards an example. However, prior work (both own and that of others) only partially uses pre-trained large language models. Now that these are here, how can they help such tutorial conversations?

This master thesis is intended to develop and study a chatbot that asks, for a given business use case in the context of circular business models, which circular strategy is used in this business use case, and explain how. The chatbot should identify and give feedback both to structural and content-wise issues of the argumentative answer.

Required skills or interest in acquiring these:

- Programming: Java, Typescript.
- Basics of user interface design (even if this will be mostly a voice interface)
- User studies, including exploratory and experimental studies.
- Databases, e.g. MongoDB

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