

Thesis
B.Sc.

Thesis
M.Sc.

IDP

LLM Based Research and Evaluation Pipeline

Motivation

Large language models (LLMs) have the potential to generate running code, queries or snippets to visualize data. They can be used to support researchers in their daily tasks and reduce the efforts to evaluate research data, answer research questions and visualize results.

However, data is often given in a specific schema and stored in different systems. Therefore, it is important to interact with an LLM to make it aware of the given data and contained information to improve resulting queries and analyses. This can potentially be done during training (as an extension of existing models) or using prompts.

The goal of this thesis is to evaluate the use of LLMs as a tool during research. By developing a pipeline, LLMs should be used to create working queries on existing data to answer research queries and to properly visualize results. The effectiveness of the approach will be evaluated by reproducing previous findings and results, e.g., to analyze QUIC deployments [3].

Your Task

- Setup an LLM based pipeline to process research data
- Analyze whether LLMs can effectively generate queries on given data structures
- Analyze whether LLMs can be used to create figures
- Compare different LLMs [1,2]

Requirements

- Basic programming knowledge in Python
- Basic knowledge in SQL, data processing and visualization
- Familiarity with GIYF-Based work approaches

Bibliography

[1] <https://openai.com/chatgpt>

[2] <https://ai.meta.com/blog/large-language-model-llama-meta-ai/>

[3] Zirngibl, Johannes, et al. "It's over 9000: Analyzing early QUIC Deployments with the Standardization on the Horizon" IMC. 2021.

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