



OPPONENT'S EVALUATION OF THE MASTER'S THESIS

Student: Bossman Mickson Bonsu

Opponent: Mgr. Marek Malina, Ph.D.

Study program: Information Technologies

Specialization: Software Engineering

Academic year: 2024/2025

Master's Thesis topic: Enabling SQL Server as a Vector Database for the Embedding Storage in the RAG Pattern

Evaluation of the thesis:

The master's thesis explores the use of SQL Server as a vector database for storing embeddings. The text is well-structured and contains only a small number of grammatical errors. Some figures contain text that is too small, and the font size in the figures is not consistent. The findings of this thesis are interesting and have strong publication potential.

The theoretical part is good, but it could benefit from a more detailed explanation of how embeddings and tokenization work.

The practical part is very well done. I commend the author for integrating the necessary calculations for the RAG system directly into the SQL database.

However, I would have preferred a comparison that also included a local SQL Server instance and a local vector database. Using Azure AI introduces potential differences in latency due to internet connectivity and other factors. Additionally, it would be useful to see how the scalability of the SQL-based vector database performs with increasingly large documents.

Questions for the thesis defence:

1. Did you try using the system with different types of documents? If so, how did it perform?
2. Do you plan to release the script or provide documentation so that the internet community can adapt existing databases to store embeddings and use them for the RAG system?

Overall evaluation of the thesis:

The Opponent shall grant a mark according to the ECTS classification scale:

A – Excellent, B – Very Good, C – Good, D – Satisfactory, E – Sufficient, F – Insufficient

An "F" grade also means "I do not recommend the thesis for defence."

I recommend this thesis to be defended and suggest the following evaluation:

A - Excellent

In the case of an evaluation grade of "F – Insufficient", please supply the main shortages and reasons for this assessment.

Date: 6. 6. 2025

Thesis Opponent's Signature: