

Digitizing Implicit Employee Knowledge in Intralogistics using LLM-Driven Interviews

1 Background

In the highly specialized field of intralogistics, companies heavily depend on the implicit, experience-based knowledge of their employees. Often, this valuable “know-how” concerning complex processes, troubleshooting, and system integrations is not formally documented. When experienced employees retire or change roles, a significant knowledge gap occurs, as traditional documentation methods are frequently time-consuming and rigid. However, the rapid advancement of Large Language Models (LLMs) presents a novel opportunity: using conversational AI to naturally extract and digitize tacit knowledge through dynamic, interview-style interactions.

2 Objective

The primary objective of this thesis is to design, implement, and evaluate an LLM-based conversational system tailored to digitize the implicit knowledge of employees. By simulating an expert interviewer, the AI system should be able to ask contextual questions, dig deeper into specific intralogistics workflows, and structure the extracted information into a digital knowledge base for long-term corporate use.

3 Task Description

To achieve the objective, the following tasks must be completed:

- **Literature Review:** Analyze existing frameworks for tacit knowledge extraction and state-of-the-art applications of LLMs in knowledge management
- **Requirement Analysis:** Identify the specific knowledge domains, interview strategies and documentation needs at the company
- **System Design & Implementation:** Develop a prototype of an LLM-driven interview agent capable of dynamically guiding a conversation to elicit expert knowledge effectively
- **Data Collection:** Conduct test sessions in which employees from the company interact with the LLM
- **Data Processing:** Design a pipeline to automatically process the interview transcripts and store the extracted information in a structured, searchable format (e.g., a vector database)
- **Evaluation:** Evaluate the system with respect to dialogue quality and the accuracy of the extracted knowledge

4 Expected Results

- A comprehensive analysis of LLM-assisted knowledge management possibilities in an industrial context
- A functional software prototype of the interview agent tailored to intralogistics
- A conceptual framework for a data pipeline for transforming conversational transcripts into structured company knowledge

5 Framework Conditions

- **Industry Partner:** The thesis will be conducted in close cooperation with the intralogistics company SITLog GmbH
- **Resources:** Access to domain experts for pilot interviews and necessary infrastructure for software development

- **Language:** The thesis should be written in English
- **Prerequisites:**
 - Basic understanding of Artificial Intelligence, Natural Language Processing (particularly LLMs, embeddings, vector databases, fine-tuning), and Python
 - Interest in knowledge management and research
 - Ability to work independently and communicate effectively with industry
- **Start Date:** As soon as possible
- **Working Mode:** Hybrid (combination of remote and on-site work at the company)

6 Contact

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