Chair of Computational Modeling and Simulation
TUM School of Engineering and Design
Technical University of Munich

Modeling:
Mathematics:
Programming:
Science:

Software Lab:

Construction Document Parser for LLM-based AI assistants.

Description

While Large Language Models (LLMs) have shown remarkable capabilities in processing and understanding text, they currently lack the ability to directly interpret specialized construction documents like GANTT diagrams, drawings, cash-flow reports, etc. Current generic parsers cannot effectively handle these industry-specific documents, limiting the potential of LLM applications in construction.

This project aims to develop specialized parsers to transform various types of construction documentation into structured, LLM-friendly formats, enabling sophisticated analysis and intelligent interaction with these documents.

Deliverables

Parsers

Three specialized parsers will be developed:

- Program Parser: Processing GANTT diagrams

- Drawing Parser: Processing floor plans and section views

- Financial Parser: Processing Bills of Quantities, claims, and cash-flow models

Applications

The parser system will be delivered in two required components and one optional enhancement:

1. Required Components:

- REST API Service

- Provides endpoints for document parsing and retrieval

- Returns standardized, serialized text-based document representations

2. Web Application

- User-friendly GUI for document upload and management

- Secure document storage with database integration

3. Optional Enhancement:

- LLM-Based AI Assistant

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- Interactive chat interface for document queries

- Context-aware responses based on document content

Supervisors

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