Oelrich Insights: Their Personal ChatGPT

Team : [1] Asad Kharodia, [1] Anany Sharma, [1]Ankith Subhanpuram, [2]Poonam Pawar, [2]Sainath Chettupally, [1]Shreejit Cheela
[1] Artificial Intelligent Systems, [2] Applied Data Science – Department of Engineering Education
Coach : Dr. Sanethia V. Thomas **Liaison** : Ashley Oelrich, Paloma Gutierrez

BACKGROUND

1. Construction management faces irresistible amounts of complex, unstructured data.
2. Manual document searches and other repetitive tasks waste valuable time.
3. These inefficiencies pull focus from strategic work and hinder organizational growth.

KNOWLEDGE BASE

PDF
Text Based Documents

Tabular/Structured Data

Statistical Charts and Graphs

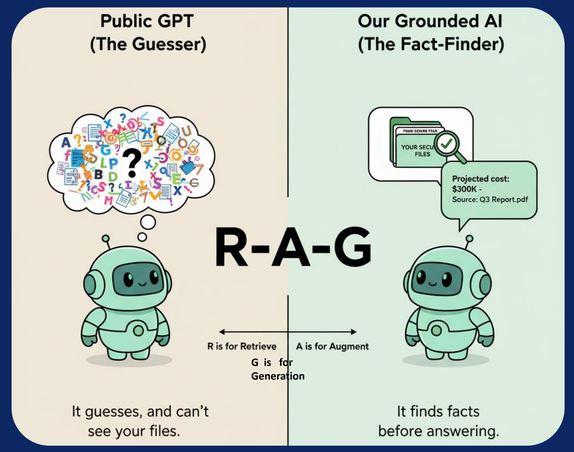
OUR SOLUTION

1. We propose an intelligent information retrieval system using custom RAG pipeline to transform passive documents into an active knowledge resource.
2. The solution acts as a custom ChatGPT for Oelrich Construction, built to retrieve company specific documents, and workflows.
3. Core Idea is the contextual retrieval. The AI won't search by keywords alone, but by semantic meaning, dramatically improving relevance and reducing search time.
4. This fundamentally shifts employee focus from searching to analyzing.

Check out our blog!

Contact Team Cemantics

RETRIEVAL AUGMENTED GENERATION



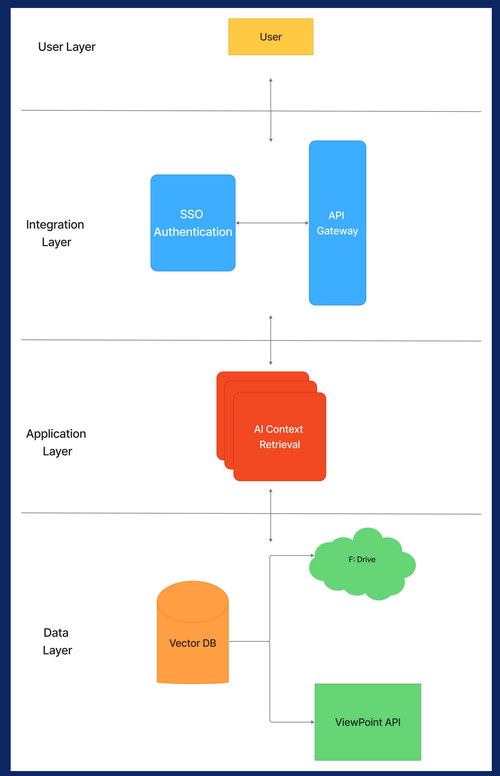
Retrieval Augmented Generation (RAG) is a system that forces the AI to check its facts against a trusted knowledge source before answering.

The Problem with Public Chatbots is that general models rely on broad, old data, leading to vague guesses or misinformation. They have zero knowledge of the company's specifics.

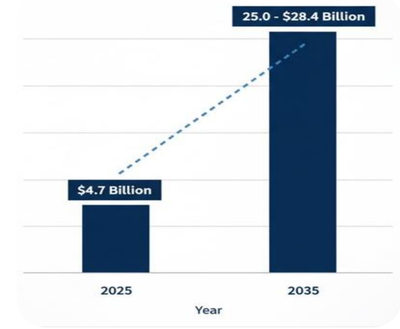
RAG pipeline can act as the company's dedicated researcher and turning passive documents into an active, accurate resource.

The Result we get is that every answer is grounded, verifiable, and relevant to Oelrich Construction's workflows.

DATA FLOW DIAGRAM



MARKET ANALYSIS



[2] clearly says the AI in construction market is expected to grow from 4.7 billion USD in 2025 to about 25–28 billion USD by 2035, with a 22% CAGR, showing rapid global adoption and digital transformation in the industry.

CHALLENGES

1. Integration Legacy System – Vista ViewPoint
2. High engineering workload, like maintenance
3. LLM and hosting costs
4. Edge cases might need manual intervention

FUTURE SCOPE AND IMPACT

1. Develop a mobile-friendly interface
2. Implement continuous model learning
3. Integrating beyond F: Drive and Vista ViewPoint

REFERENCES

[1] Retrieval augmented generation-driven information retrieval and question answering in construction management.
https://www.sciencedirect.com/science/article/pii/S1474034625000515

[2] Artificial Intelligence in Construction Market:
https://www.futuremarketinsights.com/reports/artificial-intelligence-in-construction-market

ACKNOWLEDGEMENT

IPPD Director: Dr. Edward Latorre
IPPD Course Assistant: Hritik Das