NEXER

LEKSANDS KOMMUN

TRANSFORMING GOVERNANCE WITH AI

BACKGROUND

Nestled in the heart of Dalarna County, central Sweden, Leksand Municipality spans 1,412 square kilometers and serves a population of approximately 16,000 residents. Managing numerous governing documents, including regulations, policies, and procedures, posed a formidable challenge for the municipality.

With over 150 documents in circulation, maintaining their accuracy and coherence proved an uphill battle. The manual document management process, plagued by inefficiencies and errors, resulted in unnoticed changes, discrepancies, and ambiguities. Recognizing the need for innovative solutions, Leksand embarked on an exploration of AI technology. The goal was clear: leverage AI to interact with and compare documents within the semantic context of the entire document base, thereby enhancing efficiency and accuracy in document management.

AT A GLANCE

Company: Leksand Municipality

Industry: Government Administration

Employees: 1,000+

Objectives:

- Utilize AI for document comparison within the entire document base.
- Ensure alignment and coherence of over 150 governing documents.
- Enhance efficiency and accuracy in document management.
- Streamline document comparison processes for user simplicity.
- Validate the effectiveness of AI-powered document management.

Products:

- Azure Solutions
- Azure GPT4 (LLM)
- Azure Blob Storage
- Azure OpenAI

CHALLENGE

Implementing advanced retrieval methods was crucial to streamline the document comparison process while ensuring simplicity for end-users. By integrating a vector database with Azure GPT4 (LLM), precise answers within the document base were guaranteed.

During the project, two primary challenges arose. First, the team encountered the task of conducting elaborate document comparisons without prior experience, which required innovative solutions. Second, validating results posed a challenge due to the nature of the problem. However, the team addressed these obstacles by conducting detailed manual reviews of document information and engaging in iterative collaboration with the customer to address questions and corner cases.

Despite the intricate landscape of governmental regulations and the need for compliance with legal and ethical standards, the project received substantial support from Microsoft and Nexer. This collaborative effort underscored a shared commitment to advancing AI initiatives within the public sector.

SOLUTION

In collaboration with Microsoft, Nexer's technical team tailored AI technology to the municipality's needs. Leveraging Azure solutions provided a robust framework that seamlessly aligned with the municipality's IT environment, emphasizing transparency and interpretability in AI decision-making processes to ensure accountability and regulatory compliance.

The technical solution comprised three containerized components: a frontend for user interaction and administrative tasks, a backend for processing, and a vector database for document storage. The user-friendly web application interface allowed users to query documents and perform comparisons, while the admin interface facilitated the upload and processing of records stored in Azure blob storage. The backend, implemented as a REST API, managed all logic for both frontends.

Utilizing the retrieval-augmented generation (RAG) approach with the Azure OpenAI GPT4 model, the AI solution seamlessly integrates into the municipality's Azure environment, ensuring smooth deployment.

BENEFITS

Implementing AI yielded significant benefits, enhancing decision-making, document accessibility, and workflows. AI-powered document management enabled the swift identification of discrepancies and contradictions within documents, ensuring heightened consistency and accuracy. This newfound accessibility empowered employees to access pertinent information efficiently, fostering informed decision-making and bolstering quality assurance protocols.

Furthermore, the project served as a valuable learning opportunity, equipping the IT department with essential AI expertise and laying the foundation for future initiatives within the municipality. From a technical standpoint, the primary benefit lies in efficacy, facilitating the attainment of desired outcomes such as collated and validated documents. Additionally, the solution streamlined the production and collation of documents, enhancing overall efficiency.

The AI solution facilitated rapid interaction with hundreds of documents, significantly reducing the time and cognitive load required for manual document review. Thus, time was saved, and the organization's knowledge loss risk was mitigated.

RESULTS

The successful implementation of the AI project sparked widespread interest and enthusiasm within the municipality, leading to further exploration and adoption of AI technologies. This momentum facilitated a strategic shift towards digitalization and innovation across departments. To ensure AI's ethical and responsible implementation, the municipality established an AI Council and a structured approach for evaluating AI initiatives.

The municipality plans to leverage technology for governance efficiency and effectiveness using AI for procurement document generation. The Proof of Concept (PoC) was evaluated based on two key performance indicators: groundedness and relevancy, measuring the alignment of answers with the facts in the document base and the pertinence of the answers to the provided questions.

CONCLUSION

The AI project in Leksand Municipality exemplifies a proactive approach to overcoming operational challenges through technology-driven solutions. Through the implementation of AI, the municipality has revolutionized its document management processes, setting the stage for future digitalization endeavors. As the municipality continues to explore AI's capabilities across diverse domains, its collaborative ethos and dedication to ethical AI principles will continue to be pivotal in leveraging technology to advance its community and stakeholders.

"This collaboration with Microsoft and Leksand Municipality is a testament to the power of AI in transforming public sector operations. By integrating Azure GPT4 and our expertise at Nexer, we've created a system that enhances document management efficiency and sets a precedent for future AI applications in governance. Leksand's success is a stepping stone towards our commitment to innovative, responsible AI solutions in the public sector.

This project underscores Nexer's dedication to leveraging technology for societal advancement and efficient governance."

- Carl Tönseth, Business Manager, AI, Cloud & IoT, Sweden

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