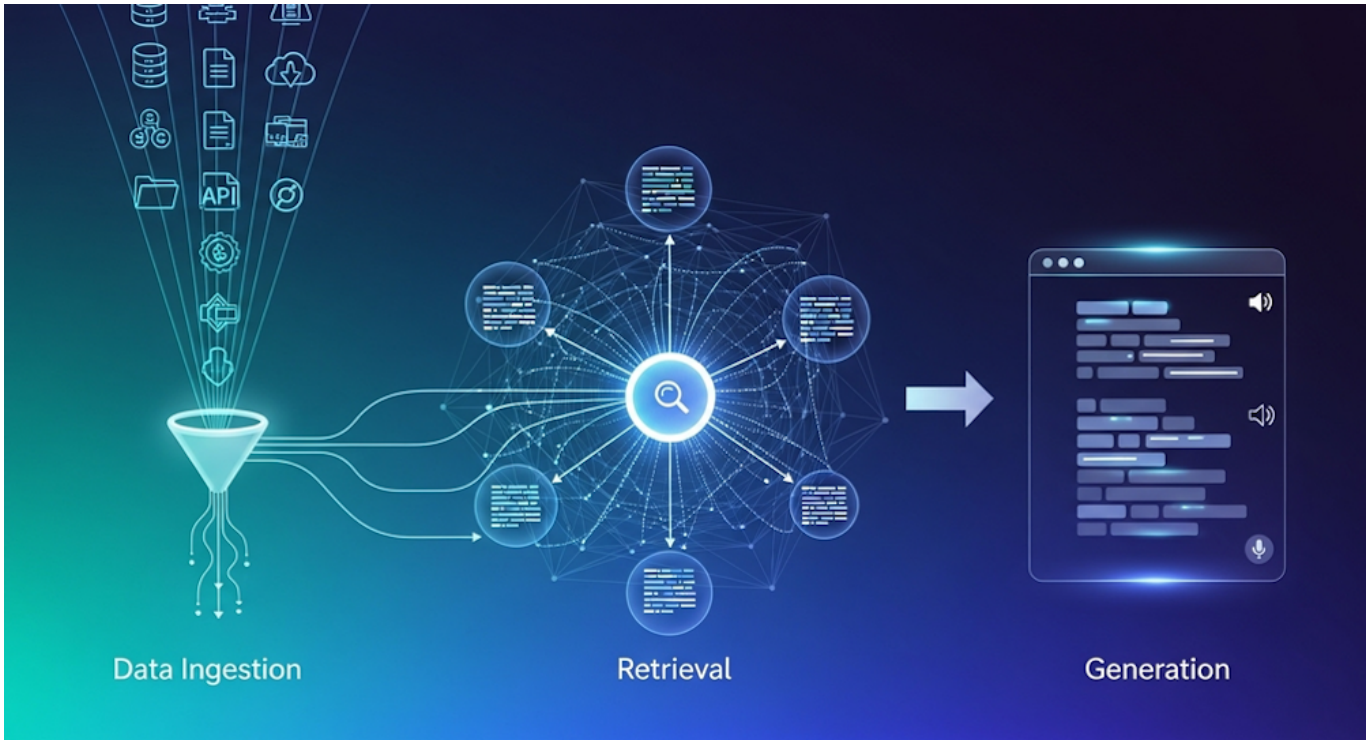
TECH OFFER

Accelerated Retrieval-Augmented Generation System Design for Complex Document Search



KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Artificial Intelligence

TECHNOLOGY READINESS LEVEL (TRL): TRL7
COUNTRY: FINLAND
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OVERVIEW

In today's data-driven world, companies manage vast volumes of information scattered across multiple systems, formats, and repositories. However, these data assets often remain underutilized due to inconsistency, fragmentation, and lack of accessibility, especially when traditional document retrieval system setups cannot keep up with growing data complexity.

This Accelerated Retrieval-Augmented Generation (RAG) System Design enables organisations to rapidly develop customised Generative AI (GenAI) solutions that securely retrieve and process information from complex document sets. Built on a retrieval augmented generation system, the solution facilitates seamless knowledge access while ensuring data privacy and eliminating the risk of data leakage.

Built for flexibility, the system can be adapted across industries and document types — from legal and financial records to technical documentation and enterprise resource planning (ERP) data — allowing organisations to unlock insights from their internal data faster and more accurately than ever before. This also strengthens any existing document retrieval system by

adding more context-aware intelligence and precision.

TECHNOLOGY FEATURES & SPECIFICATIONS

The RAG System Design comprises three main components:

- Data Ingestion: Transforms fragmented and unstructured data into a standardized, query-ready format.
- Information Retrieval: Employs advanced retrieval algorithms to ensure accurate and contextually relevant responses.
- Answer Generation: Utilizes a Large Language Model (LLM) of the client's choice, constrained to verified internal sources for reliable, hallucination-free results.

The solution supports secure deployment in enterprise environments and can integrate with existing databases, document management systems, and cloud infrastructures.

POTENTIAL APPLICATIONS

This technology can be applied across multiple sectors and use cases, including:

- Legal & Administrative: Rapid search through contracts, compliance documents, and case archives.
- Finance & Insurance: Extraction of key insights from policy, transaction, and audit documents.
- Technical & Engineering: Quick access to design documents, manuals, and test reports.
- Customer Support: Efficient retrieval of knowledge base information for helpdesk automation.
- Enterprise Operations: Integration with ERP and CRM systems to enhance operational decision-making.

UNIQUE VALUE PROPOSITION

This solution empowers organizations to harness the full potential of their internal knowledge safely and efficiently. The system accelerates deployment timelines compared to traditional AI solutions, while ensuring that all outputs remain based solely on verified corporate data.

Its high adaptability allows for industry-specific customization, and built-in security protocols safeguard sensitive information. By eliminating the risk of hallucinations and ensuring transparency in information retrieval, the technology enables better-informed decisions, higher productivity, and improved organizational performance.