ionidea AI
ENGAGE EXCELLENCE

Case Study | AI, NLP, RPA, DATA ENGINEERING

LLM-powered document management system for a Power Supply company

Problem

A major Indian power distributor was burdened by a slow and inefficient paper-based document management system.

Locating critical project information was time-consuming, hindering decision-making.

The reliance on physical documents led to high storage and management costs.

Solution

Developed a customized document management system powered by Large Language Models (LLMs) featuring:

- **Intelligent Document Digitization:** Conversion of paper documents into searchable digital formats.
- **Context-aware Search Engine:** LLM-powered search for rapid information retrieval based on natural language queries.
- **Table Extraction and Transformation:** Efficient extraction of data from tables and charts within documents.

Results

- Instantaneous access to critical project information, accelerating decision-making.
- Dramatically reduced search times for relevant documents.
- A massive 70% reduction in document management costs.

Technology Stack

- **Document Digitization:** OCR technologies (GCP, Tesseract, commercial solutions).
- **LLM:** Llama, Mistral, OpenAI, or other suitable language models.
- **Search Engine:** Elasticsearch, Solr, or similar, integrated with LLM capabilities.
- **Frontend:** Web-based interface with intuitive search capabilities.
- **Database:** Flexible structure to accommodate diverse document types (Redis, MongoDB, SQL or NoSQL).

Software Development

- **Methodology:** Agile development to incorporate user feedback.
- **Focus:** User-friendly search interface with natural language processing (NLP) capabilities.
- **Security:** Robust measures to protect sensitive project data.

Before Metrics

Lengthy delays in retrieving information from paper-based archives.

High overhead costs related to document storage and management.

After Metrics

Significant reduction in document search times (e.g., from hours to seconds).

70% decrease in document management costs.