



Conversational Chatbot Powered by Document Intelligence

Posted on September 7, 2025 by Admin



**A chat
bubble
asking:**

What's the payroll compliance rule for contractors?

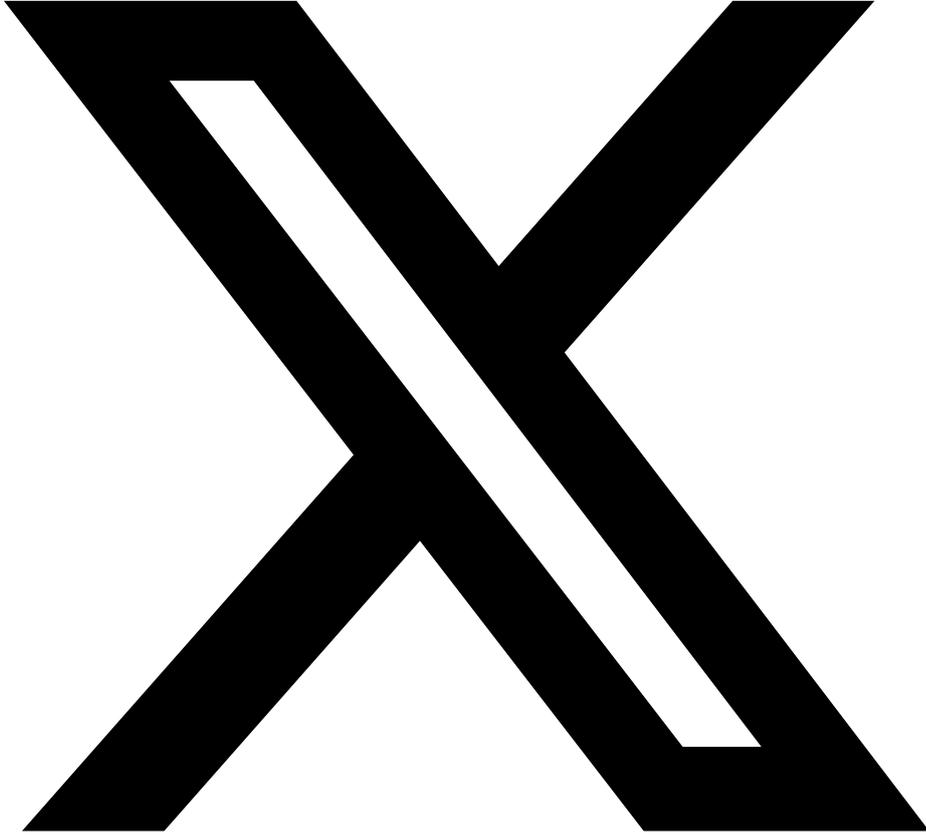
AI response appears instantly with a short, confident answer.

Case Study



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Conversational Chatbot Powered by Document Intelligence

Client

A mid-sized SaaS company specializing in HR and payroll management faced a growing barrier: their support and operations teams struggled to quickly extract key information from a maze of internal documents: policy PDFs, compliance guides, and technical manuals. Manual searching and frequent escalations to subject matter experts slowed down resolutions and increased workloads.

TechTez was brought in to develop an AI-powered chatbot that could extract context-aware answers from unstructured documents using natural language. The solution now powers internal support workflows across multiple departments.

The Challenge

Enterprise teams are often buried under static, unstructured documents in a variety of formats (PDF, DOCX, etc.). Retrieving accurate, contextual answers is slow, labor-intensive, and not scalable, especially when answers are scattered across numerous files.

Key obstacles included:



- **No Contextual Search:** Existing document systems lacked the intelligence for natural, context-driven queries.



- **Manual**
Reviews: Employees wasted valuable hours scanning lengthy documents.



- **Disconnected**
Answers: Traditional tools made it difficult to link user questions with the right portions of content.



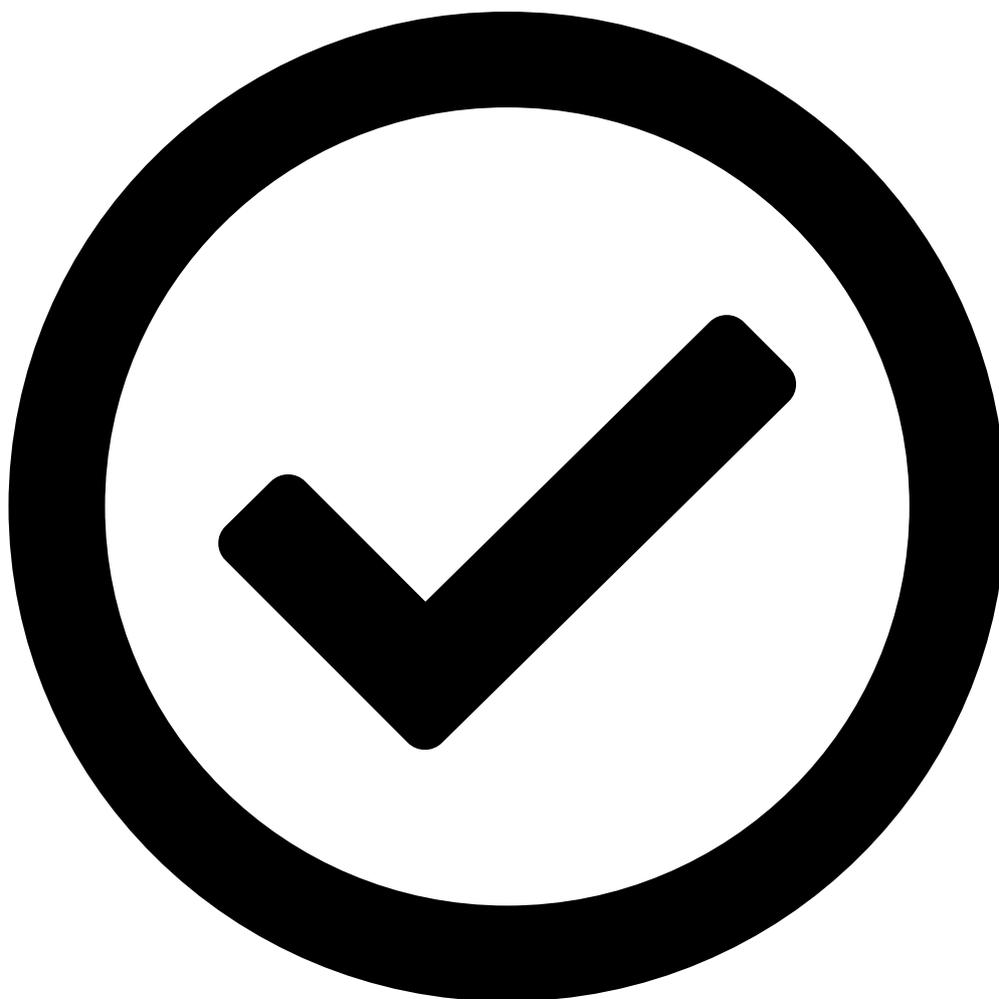
- **Limited Accessibility:** No intuitive interface for asking plain-language questions; only tech-savvy users could dig deep.

Our Strategy

TechTez developed an advanced Conversational AI Chatbot using Retrieval-Augmented Generation (RAG) to transform how teams interact with company knowledge.

Architecture & Workflow

Solution Highlights:



- **Document Ingestion & Structuring:** All internal documents (PDF, DOCX) are automatically divided into logical, searchable blocks for optimal retrieval.



- **Vectorization & Storage:** Each content block is embedded and stored in a lightweight vector database (SQLite) for high-speed, accurate semantic search.



- **Semantic Matching:** When users ask a question, the chatbot semantically matches the query to the most relevant sections of content—regardless of wording.



- **AI-Powered Answer Generation:** Relevant sections are passed to a Large Language Model (ChatGPT or Ollama Mistral) to generate clear, human-like responses.

Technology Architecture



- Ollama Mistral

LLMs: ChatGPT,



- SQLite

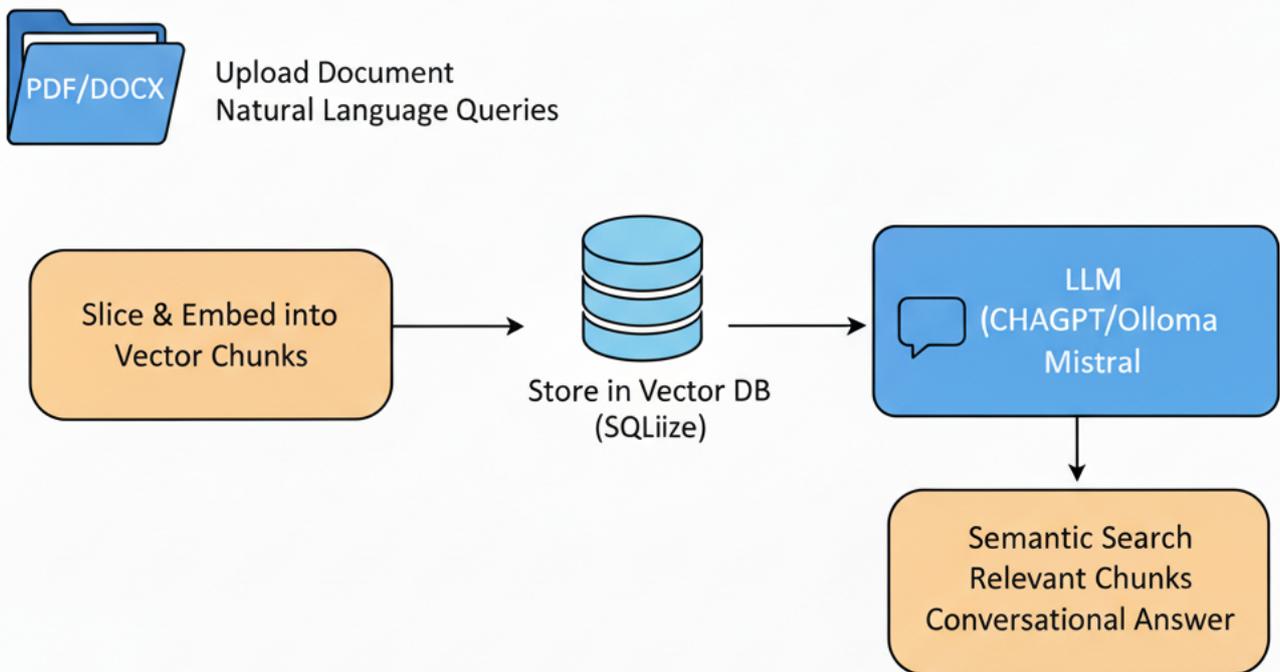
Vector Storage:



- Python, LangChain, Retrieval-Augmented Generation (RAG)

Programming:

AI-Powered Document Intelligence - System Workflow



From Frustration to Conversation – Impact of the AI Chatbot

Before

- ✗ Manual document scanning
- ✗ Static keyword search
- ✗ Hard for non-technical users
- ✗ Slow response time
- ✗ No semantic context

After

- ✓ Conversational querying
- ✓ LLM-backed context answers
- ✓ Fast & dynamic info access
- ✓ Minimal manual effort
- ✓ Works across formats

Results & Impact



- conversational access to any internal document

Instant,



- reduced from minutes to seconds

Search time



- manual tagging or indexing

No need for



- usable by non-technical staff

User-friendly:



- support (PDF, DOCX, etc.)

Multi-format



- agnostic deployment

Scalable, model-

Outcomes:



- **40-50%**
reduction in average document lookup time within the first two weeks



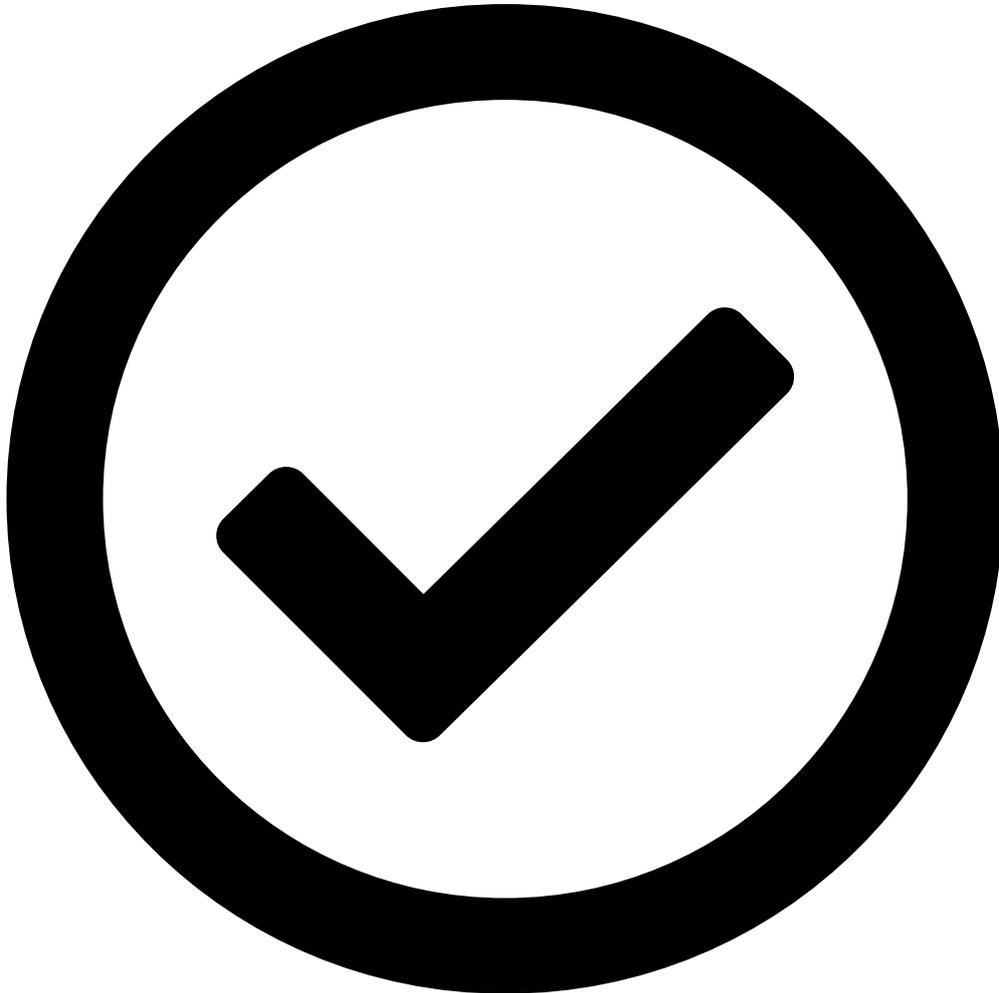
- support case resolution times

30% decrease in



- in escalations to SMEs, freeing experts for higher-value work

Significant drop



- response accuracy, reducing follow-up queries

Improved

Our Thought Leadership Guides

- Case Study

[AWS vs Azure Cost Benchmarking: Architecture-Driven Cloud Cost Optimization in 2026](#)

Compare AWS and Azure cloud costs and learn why architecture, automation, and governance matter more than pricing for long-term efficiency.



AWS vs Azure

Cost Benchmarking

Architecture-Driven Cloud Cost Optimization in **2025**



- Case Study

[Agentic AI Assistant Framework for Autonomous Task Execution](#)

An agentic, multi-agent AI assistant that plans, executes, and completes tasks via secure tool orchestration and live APIs turning user prompts into real outcomes like bookings and itineraries.



Agentic AI for **Autonomous Workflow Automation**

From natural language to automated restaurant discovery and table reservations end-to-end, without manual steps.

- Case Study

[AI-Driven Dermatology Platform for Accurate Diagnosis and Secure Digital Care](#)

A mid-sized SaaS company specializing in HR and payroll management faced a growing barrier:



Building an Intelligent AI-Driven Dermatology Platform for Accurate Diagnosis and Digital Care

Secure, AI-Powered Skin Analysis with Human-in-the-Loop Clinical Validation