

## Building an AI-Driven Supplemental Reporting Tool for Conversational Queries Based on Internal Documents

Tiger Analytics partnered with the client to build the solution by training models on financial documents. This approach provided a solid foundation for developing an AI-driven supplemental reporting tool tailored to handling conversational queries and generating insights from internal document.

# The Background

Our client is a Real Estate Investment Trust (REIT), with services in warehouse leasing, property management, & logistics facilities. The Data & Analytics division of the customer engaged Tiger Analytics to build the solution by training models on financial documents like 10K, 10Q, and supplemental reports.

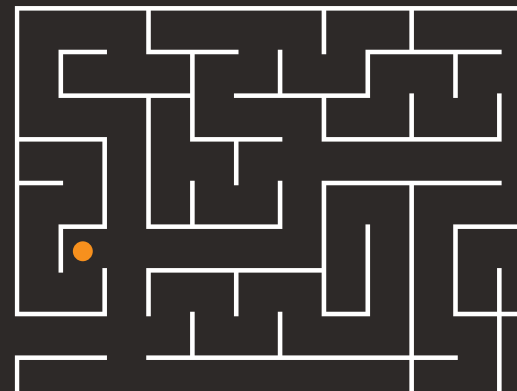
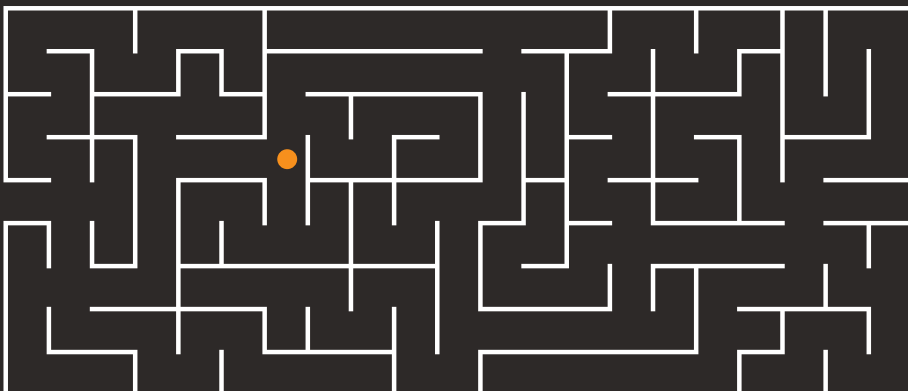
## Key Challenges

### / Implementation Challenges:

- **Manual Extraction from Multiple Files:** The need to manually select specific pages from various documents to create a consistent data extraction pipeline, a process that has to be repeated for every new document.

### / Operational Challenges:

- **Handling Comparison Queries:** Addressing complex questions that require comparing data across multiple supplemental documents.
- **Extracting Data from Image-based Charts:** Many charts embedded as images in presentations cannot be automatically extracted, necessitating manual data entry.



# Our Solutions

## / Data Handling:

- RAG Model Development: Built a Retrieval-Augmented Generation (RAG) model using supplemental PDFs, including 10-K and 10-Q documents, for each quarter starting from Q1-2021.

## / Data Extraction Techniques:

- AWS Textract Utilization: Employed AWS Textract to automate the extraction of text and tables from the supplemental PDFs.
- Manual Data Conversion: Converted data from charts embedded as images into tabular form manually to ensure all relevant information is captured.

## / Data Processing:

- Chunking and Embedding Storage: The extracted data is segmented into smaller, manageable chunks, and the embeddings for these chunks are stored in the Pinecone vector index for efficient retrieval and querying.

# Tech Stack

/ AWS Lambda

/ Amazon S3

/ AWS Textract

/ Pinecone Vector Database

/ Dataiku

/ Azure Open AI for LLM

# Value Delivered

/ Enhanced Data Accessibility: Streamlined Access to Key Information in Supplemental Reports.

/ Improved Query Handling: Ability to Answer Complex Questions Across Multiple Quarters.

/ Improved Decision Making: Ability to make decision based on enterprise data.

/ Operational Efficiency: Automation of Data Extraction and Pipeline Creation.

/ Accuracy in Data Interpretation: Reliable Extraction and Transformation of Tabular Data from PDFs and Images.



The top half of the image features a complex, abstract pattern of overlapping, rounded geometric shapes in various shades of blue and purple. The shapes are layered, creating a sense of depth and movement. The colors range from light, airy blues to deep, rich purples and dark blues. The overall effect is modern and tech-oriented.

## About Tiger Analytics

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to **provide certainty to shape a better tomorrow.**

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.

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