



# Contract Analytics leveraging Generative AI

(Multiple companies in Private Equity Firm Portfolio)

Developed a Contract Analytics tool leveraging OpenAI GPT models to extract key insights and clauses, offering an intuitive and user-friendly interface to query directly on the contractual repository. This substantially reduces the time and effort spent by legal professionals on contract scrutiny, enhancing efficiency and overall productivity

# Private Equity first needs to build a OpenAI based contract analytics tool

## Picture this...

You're looking to develop a contract analytics tool by leveraging OpenAI GPT models, capable of analyzing contracts and enabling users to have interactive conversations based on the information present in the contracts. Currently, your portfolio companies deal with a large variety of customer contracts and price variations and the sales, finance and legal teams spend substantial amount of time in reviewing and understanding key themes, risks and deriving insights from them.

## You turn to Accordion.

We partner with your team to develop a contract analytics tool leveraging OpenAI GPT models to extract key insights and clauses, offering an intuitive and user-friendly, including:

- 1) Designing and developing an intuitive and user-friendly interface allowing direct queries on key insights and clauses on ~1500 complex, multi-page contractual documents
- 2) Implementing OCR functionality leveraging Azure Document intelligence ensuring high-precision data extraction from scanned contracts
- 3) Deploying the platform securely on client's Azure environment, with ring-fencing measures implemented to ensure data integrity and confidentiality
- 4) Enhancing response accuracy by optimizing context window, chunking size and Dynamic Top-K Tuning based RAG methodology
- 5) Implementing various features to engage users of the platform including searchable chat history, custom instructions, prompt guides, user feedback (like/dislike) and functionality to review response

## Your value is enhanced.

- You have a contract analytics tool resulting in potential savings of ~\$10M by reducing time spent on manual data interpretation, validation and scrutiny of complex clauses and strengthening data security with ring-fencing measures
- You have achieved ~95% accuracy for contract related queries, streamlining decision making by providing reliable revenue and churn forecasting
- You have also safely harnessed the power of generative AI in the daily workflows without concerns of security and data privacy

### KEY RESULT

- ~\$10M potential saving
- ~965% accuracy for queries

### VALUE LEVERS PULLED

- App development
- Document chunking optimization
- Prompt engineering
- Retrieval Augmented Generation
- Data Extraction using OCR techniques

# Implementing Generative AI chatbot for contract analytics

## Situation

- Client's portfolio companies deal with a large variety of customer contracts and price variations. The Sales, Finance and Legal teams spend substantial amount of time in reviewing and understanding key themes, risks and deriving insights from the contracts
- Partnered with the client to develop a contract analytics tool by leveraging OpenAI GPT models, capable of analyzing contracts and enabling users to have interactive conversations based on the information present in the contracts.

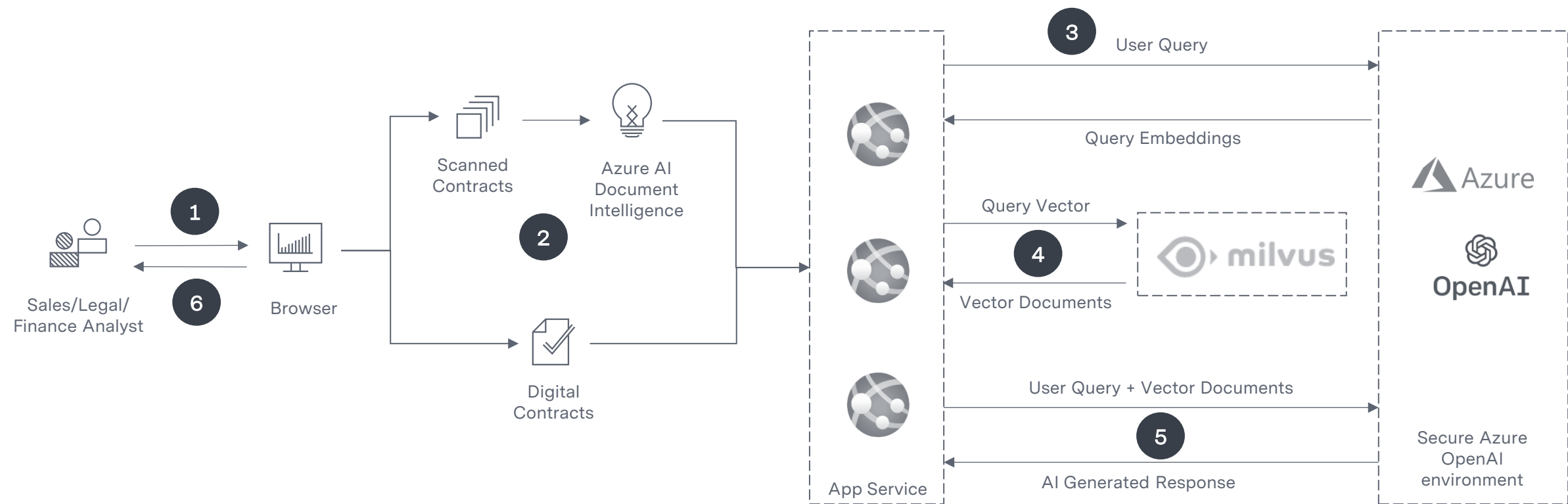
## Accordion Value Add

- Designed and developed an intuitive and user-friendly interface allowing direct queries on key insights and clauses on ~1500 complex, multi-page contractual documents
- Implemented OCR functionality leveraging Azure Document intelligence ensuring high-precision data extraction from scanned contracts
- Deployed the platform securely on client's Azure environment, with ring-fencing measures implemented to ensure data integrity and confidentiality
- Enhanced response accuracy by optimizing context window, chunking size and Dynamic Top-K Tuning based RAG methodology
- Implemented various features to engage users of the platform including searchable chat history, custom instructions, prompt guides, user feedback (like/dislike) and functionality to review response

## Impact

- Contract Analytics tool resulted in potential savings of ~\$10M by reducing time spent on manual data interpretation, validation and scrutiny of complex clauses and strengthening data security with ring-fencing measures
- Achieved ~95% accuracy for contract related queries, streamlining decision making by providing reliable revenue and churn forecasting
- Enabled the organization to safely harness the power of generative AI in their daily workflows without concerns of security and data privacy

# Information flow - Contract analytics solution



- 1 Legal Analyst uploads contracts and send queries related to contracts for information retrieval into the web browser
- 2 Uploaded **scanned contracts** are sent to Azure AI Document Intelligence for text extraction
- 3 Query is sent to **Azure OpenAI** where they are vectorized based on LLM embeddings

- 4 **Vectorized** query is passed to **Milvus DB** for vector search and returns relevant documents
- 5 **Vectorized** query along with **documents** are then sent to Azure OpenAI for generating response
- 6 **AI generated** response with the required information is returned to the user on the browser

# Sample queries & AI generated response

USER ASKS QUESTION	GEN-AI GENERATED RESPONSE
<ul style="list-style-type: none"> <li>Does the renewal option for Company A specify that they can reduce the number of units in subsequent subscription?</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, the renewal option for Company A does specify that they can renew the subscription for any number of units of the Licensor Software set forth in the Order Form for an additional annual Subscription Term.</li> </ul>
<ul style="list-style-type: none"> <li>Does the renewal option for Company A specify that they can cut down on number of units from the current subscription while renewing their subscription at the end of renewal term?</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, Company A has the option to renew the subscription for any number of units of the Licensor Software set forth in the Order Form for an additional annual Subscription Term, regardless of the number of Named Users deployed prior to the renewal.</li> </ul>
<ul style="list-style-type: none"> <li>What are the charges if Company B wants to renew their subscription with additional number of units at the end of subscription term?</li> </ul>	<ul style="list-style-type: none"> <li>✓ If Company B wants to renew their subscription with additional number of units at the end of the subscription term, the annual Subscription Fee for each such renewal will be the result of multiplying (i) the Annual Renewal Fee per Unit set forth in Exhibit A of this Order Form for the Licensor Software being renewed by (ii) the corresponding Number of Units. The Annual Renewal Fee per Unit will increase by 2% per year over the prior year's Annual Renewal Fee per Unit regardless of the Number of Units renewed.</li> </ul>
<ul style="list-style-type: none"> <li>Does the renewal option for Company B specify that they can cut down on number of units from the current subscription while renewing their subscription at the end of renewal term</li> </ul>	<ul style="list-style-type: none"> <li>✓ Yes, Company B has the option to renew the subscription for any number of units of the Licensor Software set forth in the order form for up to 3 additional and consecutive annual Subscription Terms. If Veritas elects to renew a number of units of Licensor Software less than the number of units of Licensor Software set forth in Section 1 of the order form, then the annual renewal Subscription fee will be reduced.</li> </ul>
<ul style="list-style-type: none"> <li>is there an automatic renewal of cloud services for Company B ?</li> </ul>	<ul style="list-style-type: none"> <li>✓ No, there is no automatic renewal of cloud services for Company B . Following the end of the initial Term for the Subscription Software and Cloud Service, the Term will not renew unless renewed or extended by agreement in writing between the parties.</li> </ul>

# Contract analytics : Comparison & research questions

Chat session

Contract

NewTec Inc.

+ New Chat

Search...

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Clear Conversations

Client GPT

Mode: Contract Analytics | Model: gpt-3.5-turbo-4k | Directory: Undefined | Temp: 0.2

Upload Documents KPIs Settings John Jacobs

Compare term length of Customer A and Customer B?

The term length for X customers typically starts with an initial term of one year and includes automatic renewals for successive one-year periods unless cancelled with notice. On the other hand, Y customers have a term length that is only as long as necessary for product evaluation, not exceeding 60 days from the effective date.

Confidence: 85% Answer Relevance: 100% Context Relevance: 89% Groundness Score: 0%

Source Documents: 202255\_File\_special\_v2.doc 202273\_File\_special\_v2.doc 202283\_Doc\_special\_v1.pdf

Rate the response: 🟢 🟡 🟠

How many customers have the audit clause mentioned?

There are four customers with an audit clause mentioned in their contract. These customers are:

1. Customer A

2. Customer B

3. Customer C

4. Customer D

Confidence: 85% Answer Relevance: 100% Context Relevance: 89% Groundness Score: 0%

Source Documents: 2022819\_File\_special\_v1.pdf 2022816\_File\_special\_v1.doc 2022109\_File\_accounts\_v1.doc

Rate the response: 🟢 🟡 🟠

What is liability clause for the Customer A?

The liability clause for the "Customer A" specifies that the entire liability of Client (and its third-party licensors) under the agreement shall not exceed the amount actually paid by the reseller to client during the twelve (12) month period immediately prior to the event giving rise to such damages. This limitation is intended to survive even if any limited remedy specified in the agreement is found to have failed of its essential purpose.

Confidence: 85% Answer Relevance: 100% Context Relevance: 89% Groundness Score: 0%

Source Documents: 2022524\_File\_special\_v2.doc 202225\_File\_accounts\_v1.pdf 2022724\_Doc\_business\_v1.pdf

Regenerate

Send a message ➤

The responses provided by Client GPT may not always be perfectly accurate. Use the information as a reference and verify critical details from sources.

Relevance Score

202283\_Doc\_special\_v1.pdf

Score 80%

202283\_Doc\_special\_v1.pdf

Score 80%

Location: Main Documents > August > 202283\_Doc\_special\_v1.pdf

Understanding the unique requirements of its diverse clientele, Tech Innovations Inc. meticulously crafts tailored contractual arrangements to accommodate varying needs and circumstances. The term length for X customers typically starts with an initial term of one year and includes automatic renewals for successive one-year periods unless cancelled with notice. On the other hand, Y customers have a term length that is only as long as necessary for product evaluation, not exceeding 60 days from the effective date. In adherence to sound financial practices, Tech Innovations Inc. stipulated uniform payment terms for both Customer A and Customer B. According to these terms, all payments must be tendered in U.S. dollars within a timeframe of thirty (30) days from the date of invoice issuance.

202283\_Doc\_special\_v1.pdf

Score 80%

User query

AI response

Confidence Metrics

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# Contract analytics : Deep dive into clauses

NewTec Inc.

+ New Chat

Search...

All Favorites

Today

What is the li...

What is the current st...

Yesterday

Are there any recent succ...

What is the expected...

Last Ten Days

What risk mitigation s...

What macroeconomic an...

How can the private equi...

How sensitive is the indu...

Clear Conversations

Client GPT

Mode: Contract Analytics | Model: gpt-3.5-turbo-4k | Directory: Undefined | Temp: 0.2

Upload Documents KPIs Settings John Jacobs

Compare the downtime penalty clauses mentioned for Customer A and Customer B?

Both Customer A and Customer B have similar downtime penalty clauses in their contracts with Client. For monthly availability between 98% and 99.5%, both are entitled to a 5% credit of the monthly fee, and for availability between 97% and 98%, the credit is 10%. Credits are not provided for availability above 99.5%. Exclusions apply, such as breaches of agreement, including payment obligations, and issues outside of Client's control. Customer A must file a claim within fifteen days following the event, and they have the option to terminate the agreement under chronic problems conditions. The information for Customer B was provided in the context of Client and it is assumed that similar conditions for claiming credits and exclusions apply.

Confidence: 85% Answer Relevance: 100% Context Relevance: 89% Groundness Score: 0%

Source Documents: 2022310\_File\_accounts\_v2.pdf 2022810\_Doc\_accounts\_v1.pdf 2022114\_Doc\_fin\_v1.pdf

Rate the response:

How many customers are up for renewal after May 2023?

The table lists the following customers with contract renewals after May 2023:

Customer Name	Note
Customer 01	Contract renewal after May 2023.
Customer 02	Customers with an effective date after May 2022 will have their renewals after May 2023.
Customer 03	Customers with a contract started after May 2022 will renew after May 2023.
Customer 04	Customers who started around or after 23/03/2023 will renew after May 2023.
Customer 05	Customers with an Effective Date after May 2022 will have their renewals after May 2023.
Customer 08	Customers with an Effective Date after May 2022 will have their renewals after May 2023.

Regenerate

Send a message

The responses provided by Client GPT may not always be perfectly accurate. Use the information as a reference and verify critical details from sources.

Relevance Score

2022810\_Doc\_accounts\_v1.pdf 80%

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Main Documents > August > 2022810\_Doc\_accounts\_v1.pdf

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2022810\_Doc\_accounts\_v1.pdf 80%

Comparative question to compare the penalty clauses for 2 customers

AI responded with the comparison between the downtime penalty clauses for Customer A and Customer B