Introduction of Contractly:

A Legal AI Platform

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THE HONG KONG UNIVERSITY OF
SCIENCE AND TECHNOLOGY

Background and Motivation

"Most lawyers run out of time before they can produce their best writing."

Chris Jensen, Founder, Legal Writing Coach
August 2014, The Official Journal of The Law Society of Hong Kong

84% litigators agreed that **drafting motions and briefs** is one of the most time-consuming tasks

75% litigators have chosen **reviewing and analyzing opposing party's motions and briefs** to be one of the most time-consuming tasks

Source: Bloomberg Law Survey of 400+ litigation partners and associates in 2019

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Background and Motivation

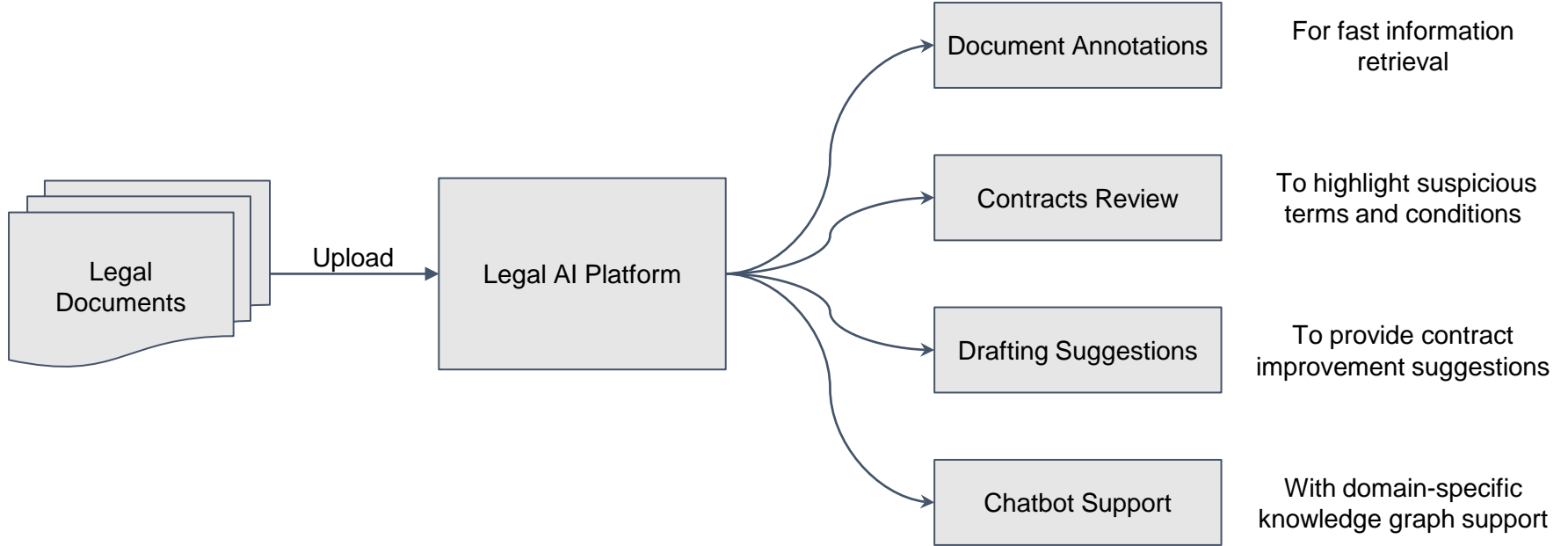Legal documents are exhaustive yet lengthy and complicated

It requires extensive working hours to review, draft and finalize legal documents

Speeding up the reviewing and drafting process by our NLP technologies, from days to minutes

Build Intelligence

Legal Documents → Upload → Legal AI Platform

- Document Annotations — For fast information retrieval
- Contracts Review — To highlight suspicious terms and conditions
- Drafting Suggestions — To provide contract improvement suggestions
- Chatbot Support — With domain-specific knowledge graph support

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Function example: Entity Linking

● Legal Assistant supports Entity Linking functionality to allow users to quickly recognize named entities with domain-specific jargons

DBpedia ● Browse using ▾ 📄 Formats ▾ 　 ⬈ Faceted Browser ⬈ Sparql Endpoint

About: Consumer price index

An Entity of Type: Thing, from Named Graph: http://dbpedia.org, within Data Space: dbpedia.org

A consumer price index is a price index, the price of a weighted average market basket of consumer goods and services purchased by households. Changes in measured CPI track changes in prices over time. It is calculated and reported on a per region or country basis on a monthly and annual basis. International organizations like the Organisation for Economic Co-operation and Development (OECD) report statistical figures like the consumer price index for many of its member countries. In the US the CPI is usually reported by the Bureau of Labor Statistics.

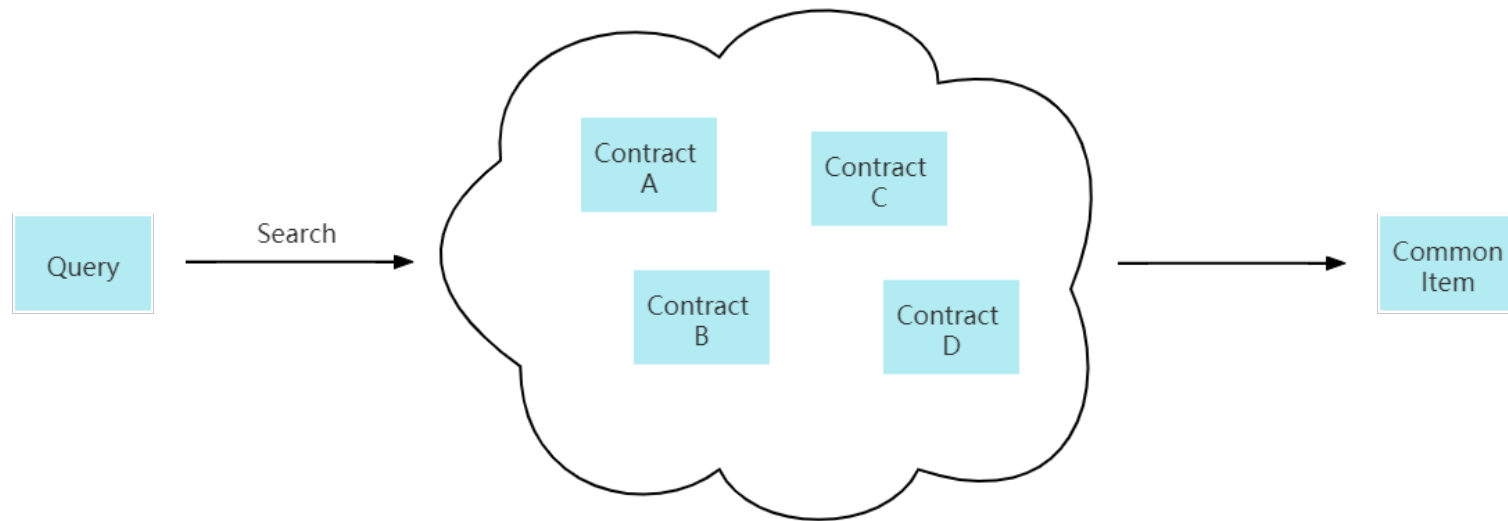| Property	Value
dbo:abstract	• A consumer price index is a price index, the price of a weighted average market basket of consumer goods and services purchased by households. Changes in measured CPI track changes in prices over time. A CPI is a statistical estimate constructed using the prices of a sample of representative items whose prices are collected periodically. Sub-indices and sub-sub-indices can be computed for different categories and sub-categories of goods and services, being

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Function example: Contract Similarity Search

- Legal Assistant encodes queries with SentenceBERT and retrieve the most relevant candidates (among 7.5M candidates) to effectively provide revision suggestions, such as wordings improvement suggestions and supplement item recommendation.

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Function example: Contract Summarization
- Legal Assistant utilizes SOTA models (e.g. T5 text-to-text transformers model) to provide quick summaries.

Excerpted from a contract:
"by using our services you are agreeing to these terms our trainer guidelines and our privacy policy. if you are the parent or legal guardian of a child under the age of 13 the parent you are agreeing to these terms on behalf of yourself and your children who are authorized to use the services pursuant to these terms and in our privacy policy. if you don't agree to these terms our trainer guidelines and our privacy policy do not use the services."

Summary written by human:
"by playing this game you agree to these terms. if you re under 13 and playing your parent guardian agrees on your behalf."

Summary generated by our model:
"if you are the parent or legal guardian of child under 13 you agree to these terms on behalf yourself and your children who are authorized use services pursuant hereto."

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Function example: Legal Q&A Chatbot

- Legal Assistant explains technical language to non-professional users in simple words with the help of a massive knowledge base, where it consists of 1.3M contract related QA pairs and 0.7M general legal QA pairs
- The system is capable of answering
  - Contract-related concepts
    - e.g. "What is regulatory responsibility?"
  - Explanation of behaviors
    - e.g. "What does it mean to waive rights?"

What is regulatory responsibility?

😎 User

Regulatory Responsibility means a duty or responsibility, assigned to an individual by management, that involves direct responsibility either for determinations of whether or not a person is in compliance with Department rules, permits or orders.
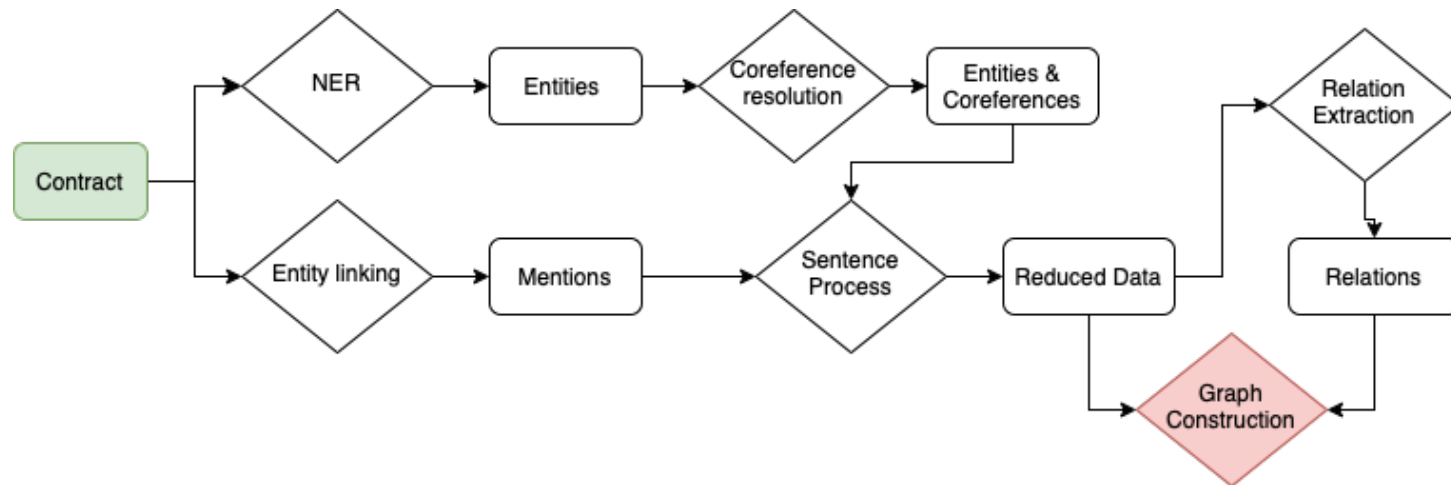
(An excerpt from the QA system interactions)

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Function example: Knowledge Graph

- ● Legal Assistant deploys SOTA models trained on over 30K contracts to extract entities and relations, resolve coreference and visualizing the results with a easy understanding graph.

Summary of Contractly System

Contract - Assisted Reading

1. Entity Linking
2. Contract Summarization
3. Contract Review
4. Knowledge Graph

Contract - Assisted Drafting

1. Contract Similarity Search
2. Supplement Contract Item Recommendation

Contract - Assisted Chatbot

1. Contract Question Answering System

Thank you for your attention!