

# The Application of ChatGPT in the Field of International Arbitration —Opportunities & Challenges

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# Outline

1. AlphaGo: A Starting Point for SCIA to Develop AI
2. ChatGPT: Opening the AIGC Era
3. The Development of ChatGPT
4. The Landscape of Generative AI Firms in the US
5. The Technical Framework of ChatGPT
6. What is ChatGPT and How It Works?
7. Newly Released Legal AI Tools in US and China
8. How to use ChatGPT in International Arbitration?
9. Benefits and Challenges
10. Guidelines for Using ChatGPT in International Arbitration
11. Conclusion



**一个影响人类社会的颠覆性技术，一场已到来的前所未有的变革。**

**A Disruptive Technology and An Unprecedented AI Revolution**

# 1. AlphaGo: A Starting Point for SCIA to Develop AI

- The ancient Greeks once envisioned creating machine that could think.
- In 2016, AlphaGo defeated the world Go champion Lee Sedol.
- Artificial intelligence enters the realm of human thinking.
- It helps humans with analysis, reasoning, and judgment.
- It has already entered the traditional field of law.
- However, AlphaGo can only perform specific tasks, while ChatGPT is a general AI language model.



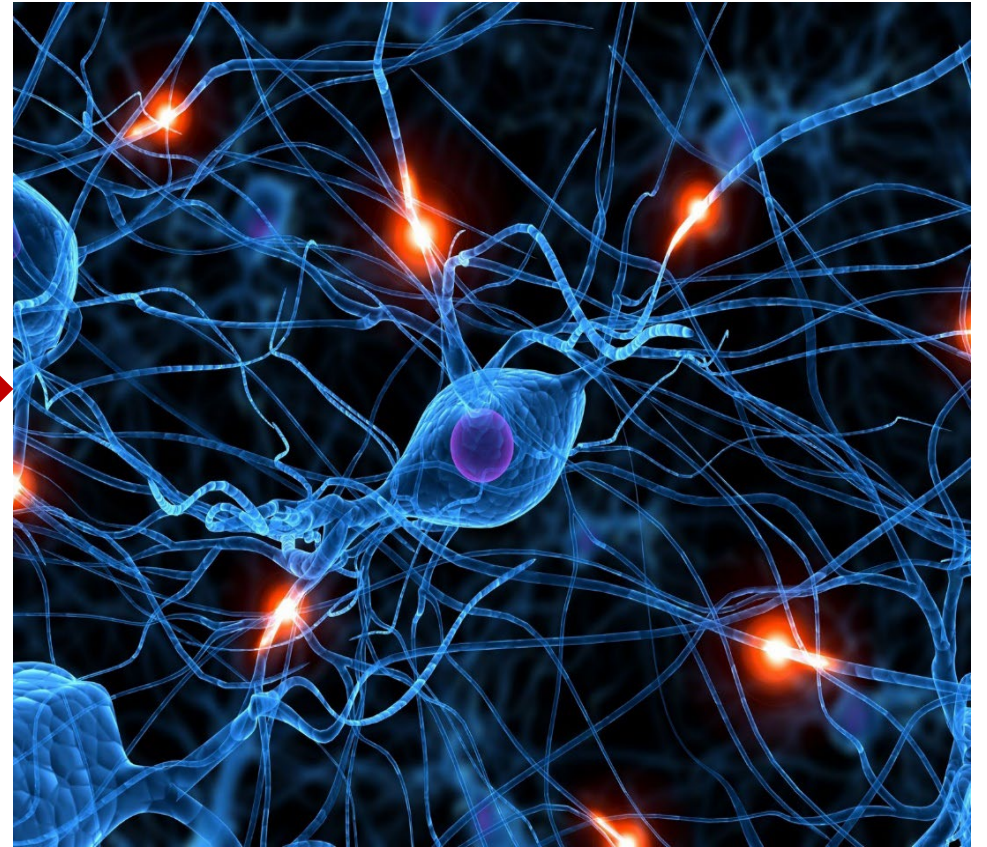
## 2. ChatGPT: Opening the AIGC Era

1. OpenAI released ChatGPT in November 30, 2022
2. Hundred million users globally in 2 months' time
3. ChatGPT is a conversational robot approaching human intelligence
4. Another industrial revolution for knowledge workers
5. Bill Gates: ChatGPT surpasses Internet and iPhone
6. Kissinger: ChatGPT is another scientific enlightenment in human history



## Structure of the human brain

1. The human brain has about 100 billion neurons
2. ChatGPT imitating the human brain
3. ChatGPT has 175 billion parameters
4. This means that it is almost like the human brain



### 3. The Development of ChatGPT



left: CEO Sam Altman; CTO Mira Murati; Chairman Gren Brockman; Chief scientist Ilya Sutskever

**The Core team of OpenAI that made history in AGI.**

### 3. The Development of ChatGPT

**June, 2018**

OpenAI released GPT-1, 100 million parameters, based on Transformer Decoder

**May, 2020**

OpenAI released GPT-3, 1750 billion parameters

**December, 2022**

OpenAI released ChatGPT

**February, 2019**

OpenAI released GPT-2, 1.5 billion parameters

**March, 2022**

OpenAI released InstructGPT, using Instruction Tuning and RLHF



## 4. The Landscape of Generative AI Firms in the US

| 公司名                       | 赛道          | 最新融资                    | 融资时间    | 轮次   | 估值         | 投资机构                                |
|---------------------------|-------------|-------------------------|---------|------|------------|-------------------------------------|
| OpenAI                    | 大模型LLM      | \$3亿                    | 2023.04 | -    | \$270~290亿 | SEQUOIA 13<br>andressen<br>horowitz |
| Anthropic                 |             | \$4.5亿                  | 2023.05 | C轮   | \$50亿      | SPARK CAPITAL Google                |
| ADEPT                     |             | \$3.5亿                  | 2023.03 | B轮   | \$10亿      | SPARK CAPITAL                       |
| Cohere                    |             | \$2.7亿                  | 2023.06 | C轮   | \$21亿      | ORACLE                              |
| Inflection AI             |             | \$13亿                   | 2023.06 | -    | \$40亿      | greylock                            |
| Mid-journey               |             | -                       | -       | -    | -          | -                                   |
| Stability AI              | 多模态AI       | \$1亿                    | 2022.10 | Seed | \$10亿      |                                     |
| Runway ML                 |             | \$1.41亿                 | 2023.06 | C+轮  | \$15亿      | Google                              |
| Tavus                     |             | \$610万                  | 2023.03 | Seed | -          |                                     |
| PromptBase                |             | -                       | -       | -    | -          | -                                   |
| CoreWeave                 |             | \$2.21亿                 | 2023.06 | B轮   | \$20亿      |                                     |
| LangChain                 | 大模型工具       | \$3000万                 | 2023.03 | Seed | >\$2亿      | Benchmark SEQUOIA 13                |
| LlamaIndex                |             | \$850万                  | 2023.06 | Seed | -          | greylock                            |
| MosaicML                  |             | 6月Databricks宣布将以13亿美元收购 |         |      |            |                                     |
| OmniML                    |             | 2月被英伟达收购                |         |      |            |                                     |
| Casetext                  |             | 6月汤森路透宣布将以6.5亿美元收购      |         |      |            |                                     |
| Harvey                    | 多领域<br>垂直应用 | \$2100万                 | 2023.04 | A轮   | -          | -                                   |
| Recursion Pharmaceuticals |             | \$5000万                 | 2023.07 | 已上市  | -          |                                     |
| Unity                     |             | -                       | -       | 已上市  | -          | -                                   |
| Luma AI                   |             | \$2000万                 | 2023.03 | A轮   | -          | Amplify                             |
| Character.ai              |             | \$1.5亿                  | 2023.03 | A轮   | \$10亿      | andressen<br>horowitz               |
| Replit                    |             | \$1亿                    | 2023.04 | B轮   | \$11.6亿    | andressen<br>horowitz kv            |
| Hugging Face              |             | \$1亿                    | 2023.05 | C轮   | \$20亿      |                                     |



## 5. The Technical Framework of ChatGPT

Step 1

**Collect demonstration data and train a supervised policy.**

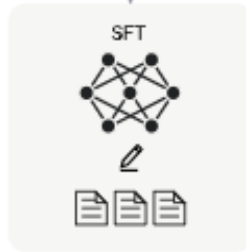
A prompt is sampled from our prompt dataset.



A labeler demonstrates the desired output behavior.



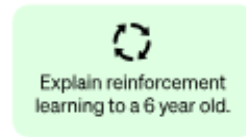
This data is used to fine-tune GPT-3.5 with supervised learning.



Step 2

**Collect comparison data and train a reward model.**

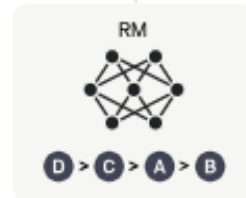
A prompt and several model outputs are sampled.



A labeler ranks the outputs from best to worst.



This data is used to train our reward model.



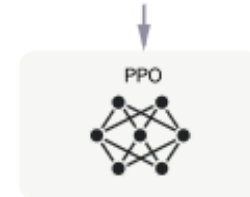
Step 3

**Optimize a policy against the reward model using the PPO reinforcement learning algorithm.**

A new prompt is sampled from the dataset.



The PPO model is initialized from the supervised policy.



The policy generates an output.



The reward model calculates a reward for the output.



The reward is used to update the policy using PPO.

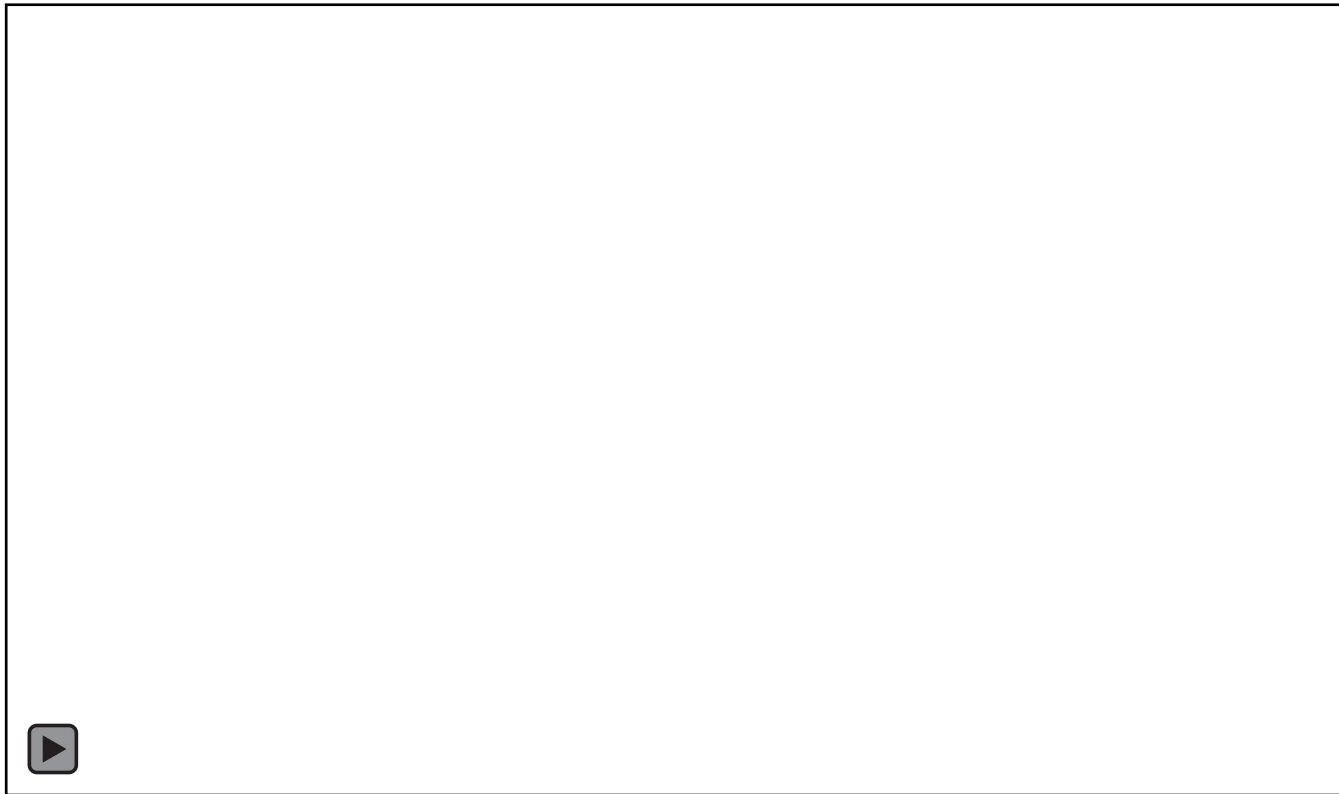


## 6. What is ChatGPT and How it Works?

- ChatGPT is a powerful language model developed by OpenAI, and it represents a significant advancement in the field of NLP.
- ChatGPT utilizes a deep neural network architecture known as a transformer.
- This architecture allows it to understand and generate human language with remarkable accuracy.
- ChatGPT reduces the marginal cost of generating legal documents to zero.
- **ChatGPT can be trained with legal knowledge, including relevant laws, cases, and legal precedents.**
- **This makes it an invaluable tool in the legal profession, including international arbitration.**
- **It's not just a text generator; it's a tool that can understand complex legal language and assist legal professionals in their work.**
- By comprehending its capabilities and limitations, we can harness its power effectively to enhance the arbitration process.

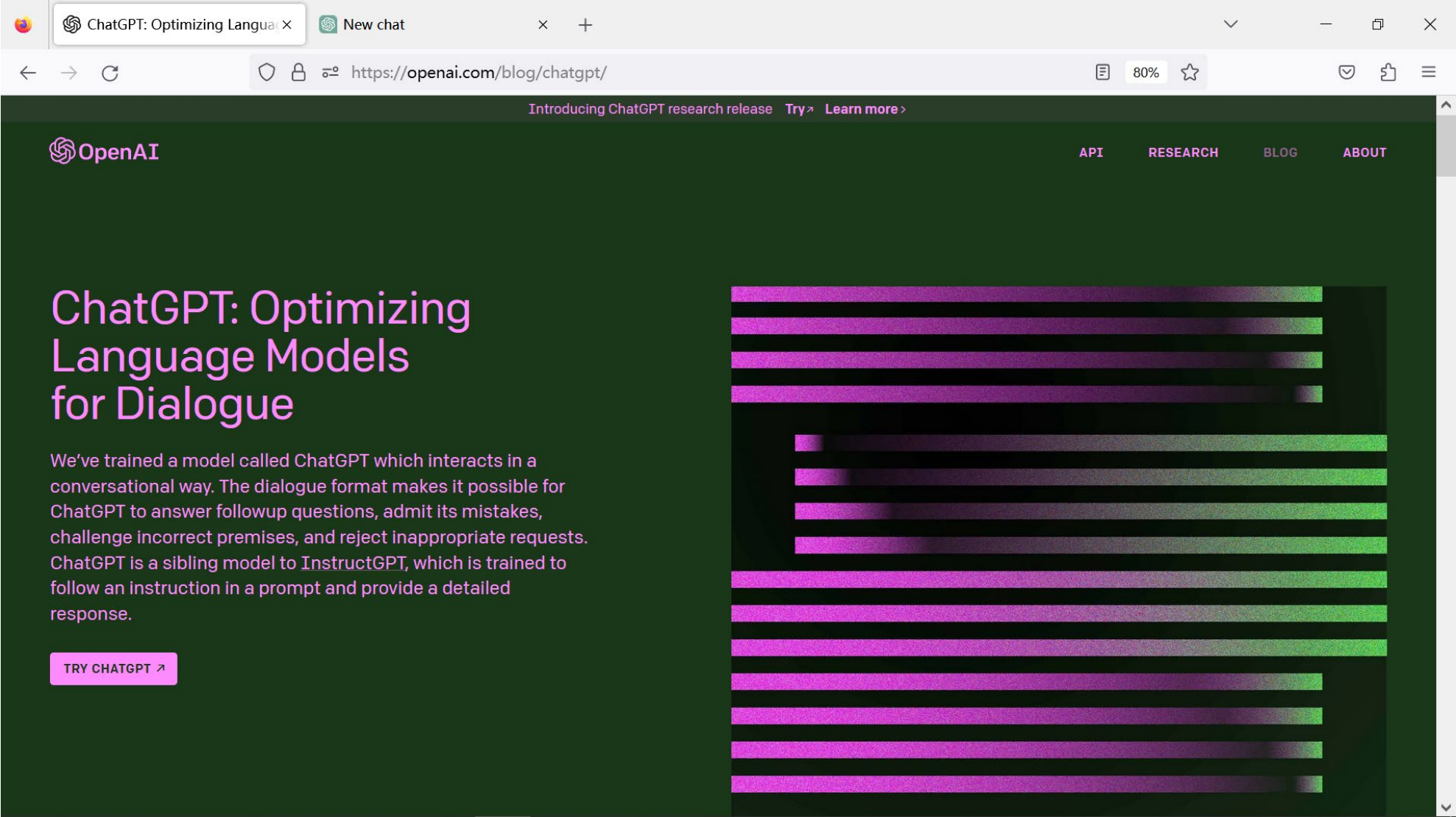
## 6. What is ChatGPT and How it Works?

- In order to show you how powerful ChatGPT it is, I've collected some short videos. Due to time constraints, I've chosen only the most interesting one to show you all. The reasoning and chain of thought of ChatGPT are very useful for legal professionals.



# 6. What is ChatGPT and How It Works?

<https://openai.com/blog/chatgpt/>



## 6. What is ChatGPT and How It Works?

<https://chat.openai.com/chat/>

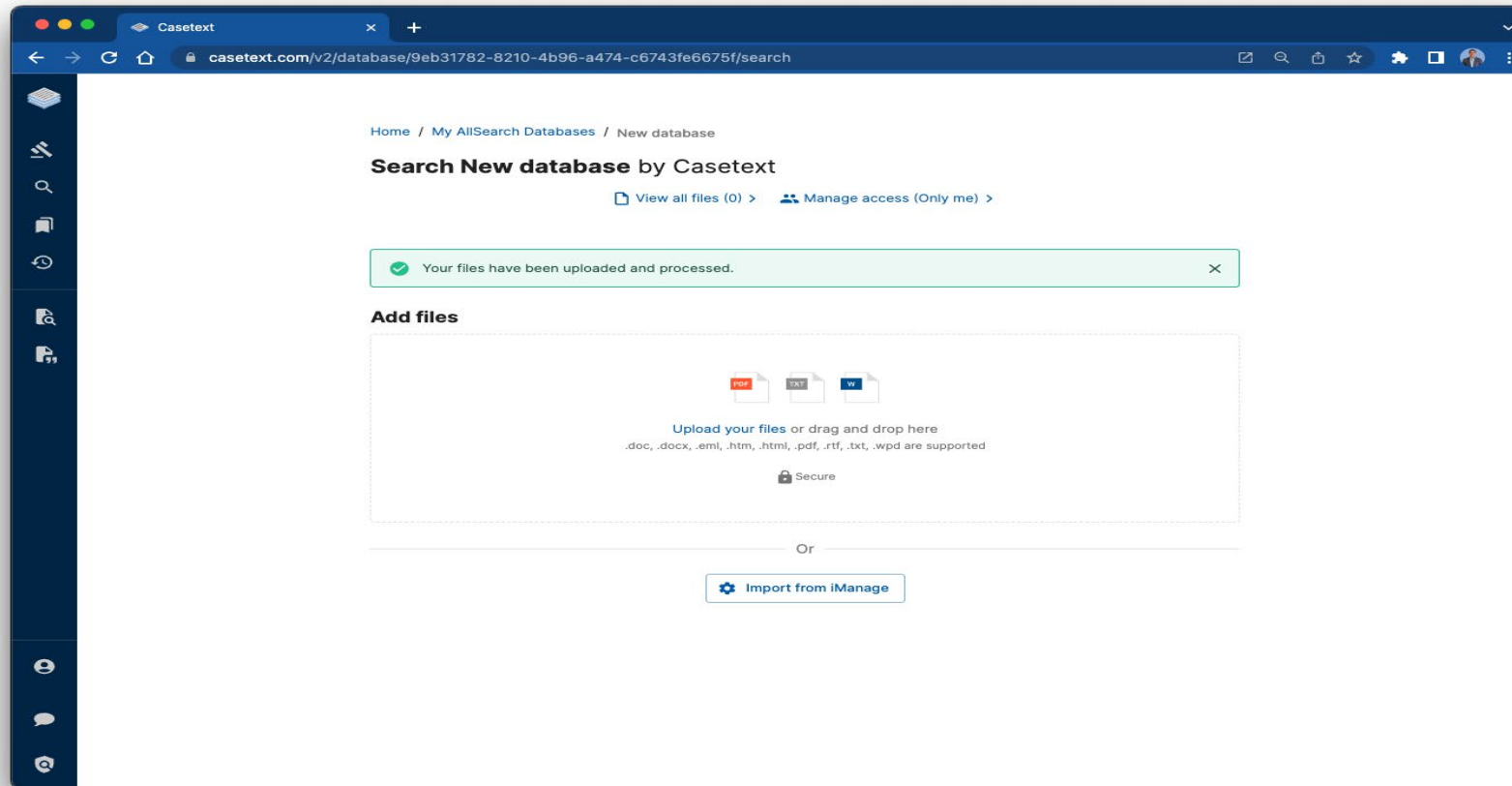
The screenshot shows the ChatGPT web interface. The browser window has two tabs: 'ChatGPT: Optimizing Language' and 'New chat'. The address bar shows 'https://chat.openai.com/chat'. The main content area features the 'ChatGPT' logo at the top. Below the logo, there are three columns: 'Examples', 'Capabilities', and 'Limitations'. Each column contains three items in light gray boxes. At the bottom, there is a text input field with a send button (paper plane icon) and a footer with the text: 'ChatGPT Feb 13 Version. Free Research Preview. Our goal is to make AI systems more natural and safe to interact with. Your feedback will help us improve.'

| Examples   | Capabilities   | Limitations   |
|--|--|---|
| "Explain quantum computing in simple terms" →            | Remembers what user said earlier in the conversation | May occasionally generate incorrect information                 |
| "Got any creative ideas for a 10 year old's birthday?" → | Allows user to provide follow-up corrections         | May occasionally produce harmful instructions or biased content |
| "How do I make an HTTP request in Javascript?" →         | Trained to decline inappropriate requests            | Limited knowledge of world and events after 2021                |

ChatGPT Feb 13 Version. Free Research Preview. Our goal is to make AI systems more natural and safe to interact with. Your feedback will help us improve.

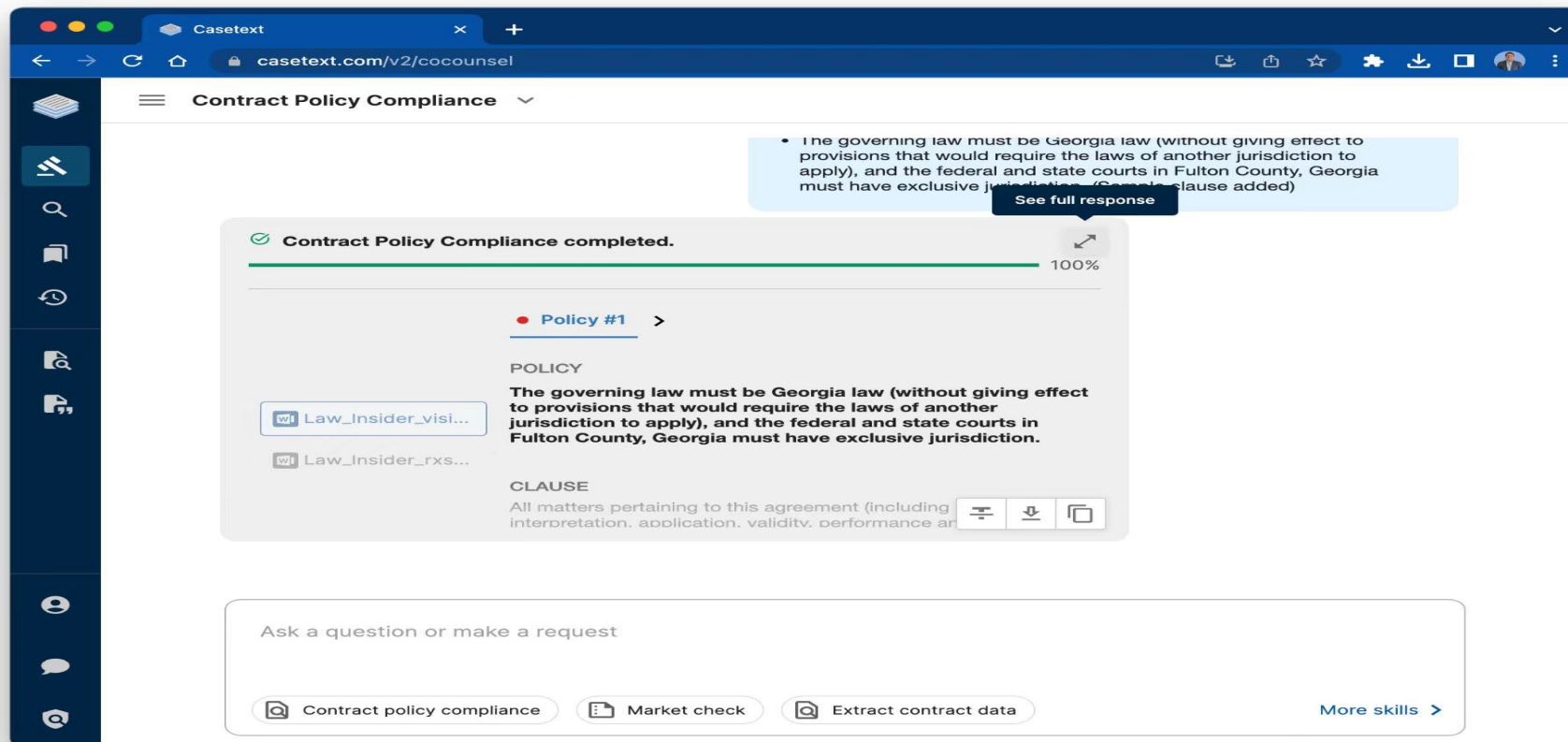
## 7. Newly Released Legal AI Tools in US and China

- casetext released CoCounsel this year in US
- Uploaded files, drag and drop here (all kind of formats) and let CoCounsel work



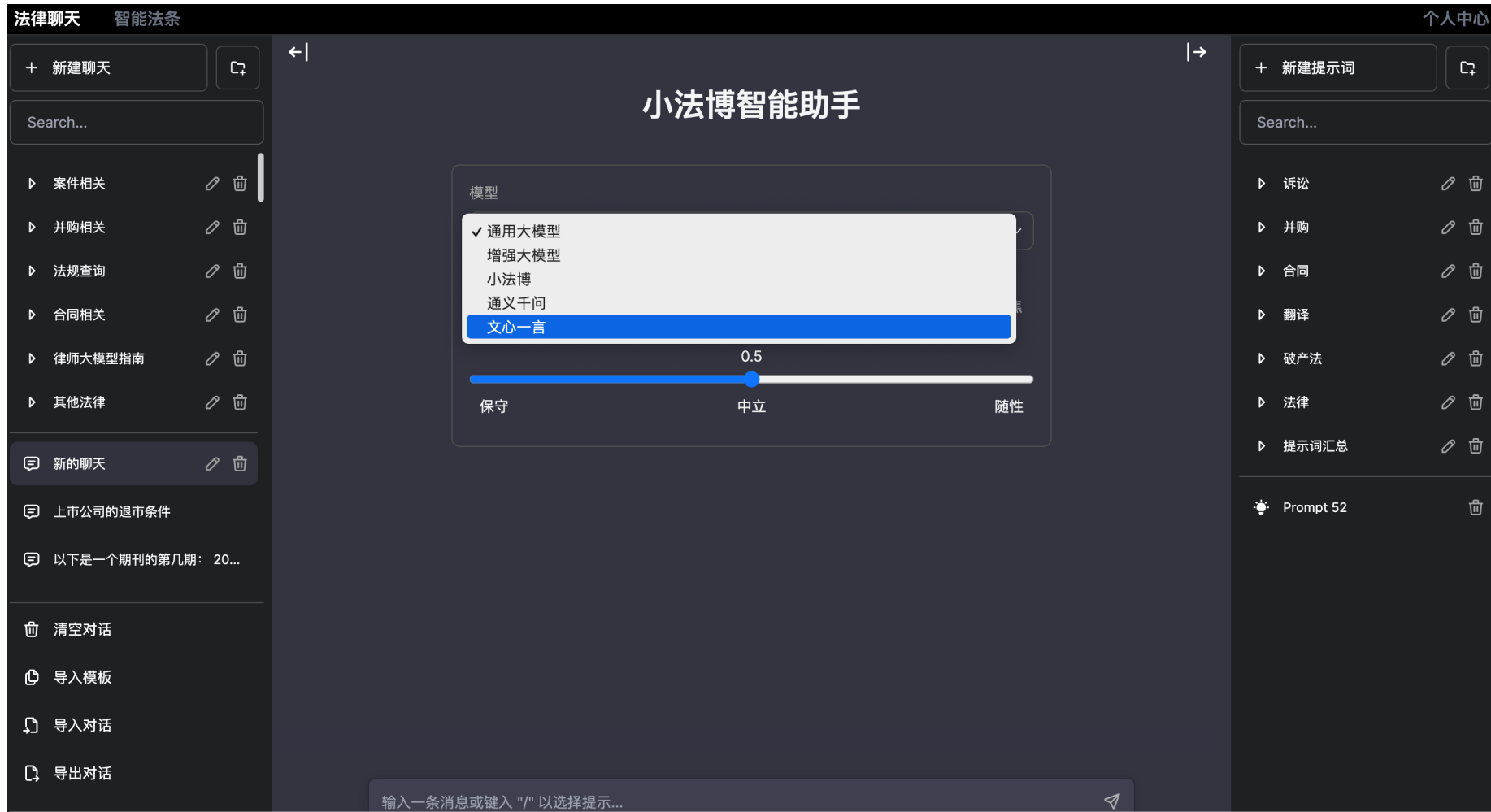
## 7. Newly Released Legal AI Tools in US and China

- Searching, reviewing and drafting contracts and legal documents by asking questions



## 7. Newly Released Legal AI Tools in US and China

- Legal Lab released Legal AI tool this year in China
- It can answer questions, doing research, drafting legal documents





## 7. Newly Released LegalAI Tools in US and China

- It can drafting the application and the statement of defence
- It can also predicting the possible result of the arbitration cases

The screenshot displays a web-based interface for a LegalAI tool. The main content area shows a template for an arbitration application (仲裁申请书) from the Shenzhen International Arbitration Court (深圳国际仲裁院). The template includes fields for the applicant's name, registration address, legal representative, contact information, and postal code. A '重新生成回应' (Regenerate response) button is visible at the bottom of the form.

Model: 增强大模型 | Temp: 0.7

请给我一个深圳国际仲裁院的仲裁申请书的模板

请注意，下面提供的模板只是一个样本，具体的格式和内容可能会根据具体的情况和仲裁规则有所不同。强烈建议在提交任何法律文件之前，寻求专业法律咨询。

### 仲裁申请书

深圳国际仲裁院

尊敬的主任：

我/我们，以下简称申请人：

申请人名称（全称）： \_\_\_\_\_

注册地或常住地： \_\_\_\_\_

法定代表人或主要负责人： \_\_\_\_\_

联系人： \_\_\_\_\_

联系电话： \_\_\_\_\_

电子邮箱： \_\_\_\_\_

邮寄地址： \_\_\_\_\_

邮政编码： \_\_\_\_\_

重新生成回应

输入一条消息或输入 "/" 以选择提示...

Left sidebar (新建聊天):

- 案件相关
- 并购相关
- 法规查询
- 合同相关
- 律师大模型指南
- 其他法律

Right sidebar (新建提示词):

- 诉讼
- 并购
- 合同
- 翻译
- 破产法
- 法律
- 提示词汇总

## 8. How to Use ChatGPT in International Arbitration

- Doing legal research for arbitration cases
- Answering questions on arbitration rules and procedures
- Choosing suitable arbitrators from the arbitrator panel
- Drafting the application and the statement of defence
- **Extracting key facts and dispute issues from the involved arbitration case**
- **Summarizing and analyzing dispute issues in the involved arbitration case**
- **Predicting possible result of cases submitted for arbitration from historical cases**
- Making arbitration decision automatically
- Reviewing arbitration decisions and related documents
- Translating arbitration documents

## 8. How to Use ChatGPT in International Arbitration

- SCIA's AI Practice
- Arbitrators can upload or drag the files and let ChatGPT work
- Reviewing, analyzing the case, and drafting decision



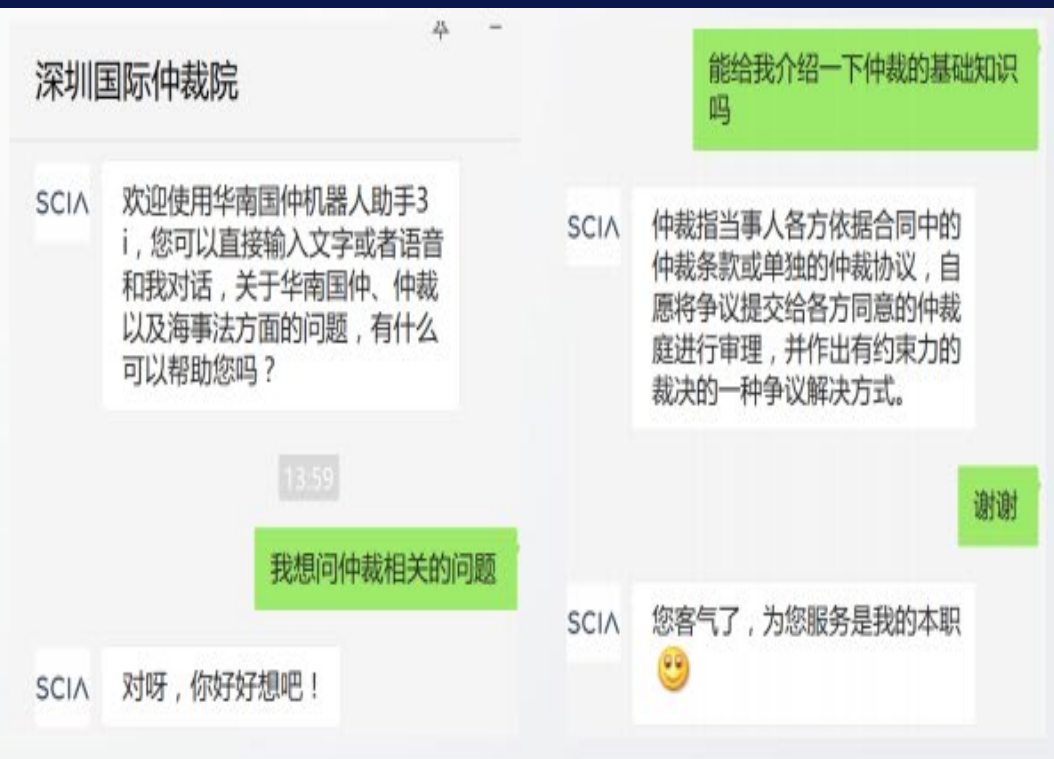
## 8. How to Use ChatGPT in International Arbitration

- SCIA's AI Practice
- 3i Arbitration Chatbot

### 3i 仲裁问答机器人

小3i：深圳国际仲裁院微信号内的咨询机器人，由张力行的“法律实验室”与深圳国际仲裁院合作开发。小3i可以以自然语言对话的形式，回答仲裁相关问题，是目前国内外第一个，也是回答仲裁和海事法律问题最多的法律机器人。

自然语言处理、语义理解、机器学习



# 深圳国际仲裁院智慧仲裁实验室

## SCIA's Arbitration AI Lab



## 智慧仲裁实验室ChatGPT研讨会



## 8. How to Use ChatGPT in International Arbitration

In order to use ChatGPT in international arbitration, we have a lot of work to do like pre-training, fine-tuning, data processing and private deployment of LLM.

- **ChatGPT undergoes two critical phases: pre-training and fine-tuning.**

1. Pre-training involves exposing the model to massive amounts of text from the SCIA helping it learn grammar, facts, and some reasoning abilities.
2. Fine-tuning is the process of training the model on specific datasets to make it more useful and safe for applications like arbitration.

- **Data processing**

1. High quality data is necessary because ChatGPT's output rely on the quality of inputing data.
2. Data processing is time-consuming and costly work.

- **Private deployment of LLM**

1. Due to security reasons, Arbitration institutions normally need privately deploying its own of LLM.
2. Private deployment is very expensive.

## **9. Benefits and Challenges**

### **• Efficiency and Time-Saving**

1. ChatGPT accelerates legal research and document review, saving significant time for arbitrators.
2. Its ability to process vast amounts of information swiftly enhances arbitration efficiency.

### **• Accuracy and Consistency**

1. ChatGPT offers a high level of accuracy in document summarization and drafting.
2. It ensures consistency in legal documents, reducing the risk of errors.

### **• Cost-Effective**

1. ChatGPT can reduce the overall cost of arbitration.
2. They streamline tasks that would otherwise require extensive human resources.

### **• Enhanced Legal Research**

1. ChatGPT can quickly search through extensive legal databases to retrieve relevant case law.
2. It identifies key legal principles and precedents, aiding in case preparation.

### **• Predicting and Judging**

1. Predicting and judging arbitration cases from historical cases helping anticipate the likely results.



## **9. Benefits and Challenges**

- Millions of arbitration decisions have been made by 250 arbitration institutions in China. However, for ChatGPT to assist us in arbitration and benefit, we are also facing serious challenges.

### **1. Confidentiality**

### **2. Data privacy**

### **3. Accuracy**

### **4. Algorithmic and data discrimination**

### **5. Professional liability**

### **6. Ethical concerns**

### **7. Funding and talents**

- Due to confidentiality and privacy reasons, the arbitration decisions and related files can't be released publicly even if they are redacted.
- ChatGPT can't reach 100% of accuracy which could lead to liability issues for arbitrators using it to handle cases.
- Ethical concerns raise questions about the extent to which we should allow arbitrators to use ChatGPT and not allow ChatGPT to replace human arbitrators.

## 10. Guidelines for Using ChatGPT in International Arbitration

- **Data Privacy and Confidentiality**

It's paramount to protect client data from unauthorized access when AI is used in arbitration.

- **Bias and Fairness**

It's crucial to address and mitigate biases arising from algorithmic and data discrimination.

- **Transparency and Accountability**

Knowing how the model generates results and who is responsible for AI-generated arbitration documents.

- **Informed Consent**

Clients and parties involved in arbitration should be informed about the use of AI.

- **Ethics and Human Oversight**

- **Regulatory Compliance**

Staying informed about regulatory requirements and observe relevant laws when AI is used in arbitration.

## 11. Conclusion

- The application of ChatGPT in international arbitration is not just about technology; it's about safeguarding the principles of justice and fairness of international arbitration.
- We've explored how ChatGPT can streamline legal research, document review, and drafting, significantly reducing the time and cost involved in international arbitration.
- But we are also facing serious challenges, such as confidentiality, privacy, ethics and hallucination of ChatGPT.
- As we move forward, it's essential to strike a balance between the benefits and challenges ensuring that technology augments human expertise rather than replace it.
- **Finally, I hope SCIA can become a pilot for the application of ChatGPT in international arbitration, and promote the successful experience in China and internationally.**

**Thank You**