GENERATIVE AI: BEYOND THE THEORY

Webinar 1

Real Time Insights

Real World Impacts

1ST FEBRUARY 2024

ADDLESHAW GODDARD

MORE IMAGINATION MORE IMPACT

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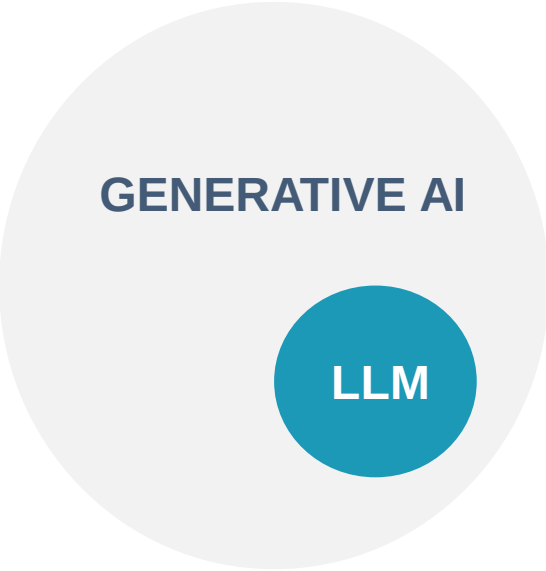
AGENDA

1. Intro
2. Understanding the Basics
   - How do LLMs work?
   - Why this matters to law
3. Overview of the Market
4. Common Questions and Concerns

WHAT IS GENERATIVE AI?

GENERATIVE AI is a type of machine learning that can be used to create new content. This can include audio, text, code, images, and videos.

This is made possible by **LARGE LANGUAGE MODELS** which are algorithms that have learnt how to predict the next word based on previous words in a sequence (the language pattern) and generate relevant and new conversational text in relation to a prompt or query.



Examples

OpenAI | ChatGPT | Claude | Bing | Bard | Lamda | Copilot

Have you used a Generative AI tool in your day-to-day life?

Have you used a Generative AI tool to deliver all or part of a work output?

Does your company plan to adopt Generative AI to enhance how work is performed?

SCAN ME

slido

GPT

GENERATIVE PRE-TRAINED TRANSFORMER

Generates new content in natural language	Pre-trained on extremely large datasets, including content from the Internet	Comprehends the query using the model (neural network)

GPT is a market leading language model using advanced deep learning techniques.

The transformer component is the significant AI breakthrough that has fuelled the explosion that we are all using today.

The most popular and first to mass market is the ChatGPT platform developed by OpenAI.

The technology has initially been focused on Natural Language Processing in the form of conversational chatbots.

HOW DOES AN LLM WORK: TRAINING

Large Language Models (LLMs) have been trained on extremely large amounts of content to give a foundational understanding of language.

Steps forward in Machine Learning Research have meant that LLMs can perform language related tasks to a high degree of competence.

BloombergGPT: A Large Language Model for Finance

Shijie Wu[1,*], Ozan İrsoy[1,*], Steven Lu[1,*], Vadim Dabravolski[1], Mark Dredze[1,3], Sebastian Gehrmann[1], Prabhanjan Kambadur[1], David Rosenberg[2], Gideon Mann[1]
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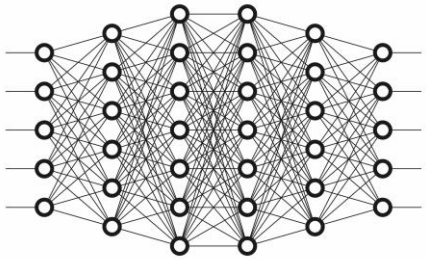
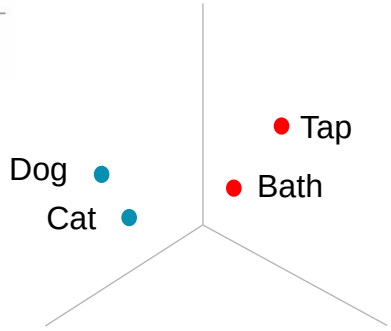
[3] Computer Science, Johns Hopkins University, Baltimore, MD USA

Abstract

The use of NLP in the realm of financial technology is broad and complex, with applications ranging from sentiment analysis and named entity recognition to question answering. Large Language Models (LLMs) have been shown to be effective on a variety of tasks; however, no LLM specialized for the financial domain has been reported in literature. In this work, we present BloombergGPT, a 50 billion parameter language model that is trained on a wide range of financial data. We construct a 363 billion token dataset based on Bloomberg's extensive data sources, perhaps the largest domain-specific dataset yet, augmented with 345 billion tokens from general purpose datasets. We validate BloombergGPT on standard LLM benchmarks, open financial benchmarks, and a suite of internal benchmarks that most accurately reflect our intended usage. Our mixed dataset training leads to a model that outperforms existing models on financial tasks by significant margins without sacrificing performance on general LLM benchmarks. Additionally, we explain our modeling choices, training process, and evaluation methodology. We release Training Chronicles ence in training BloombergGPT.

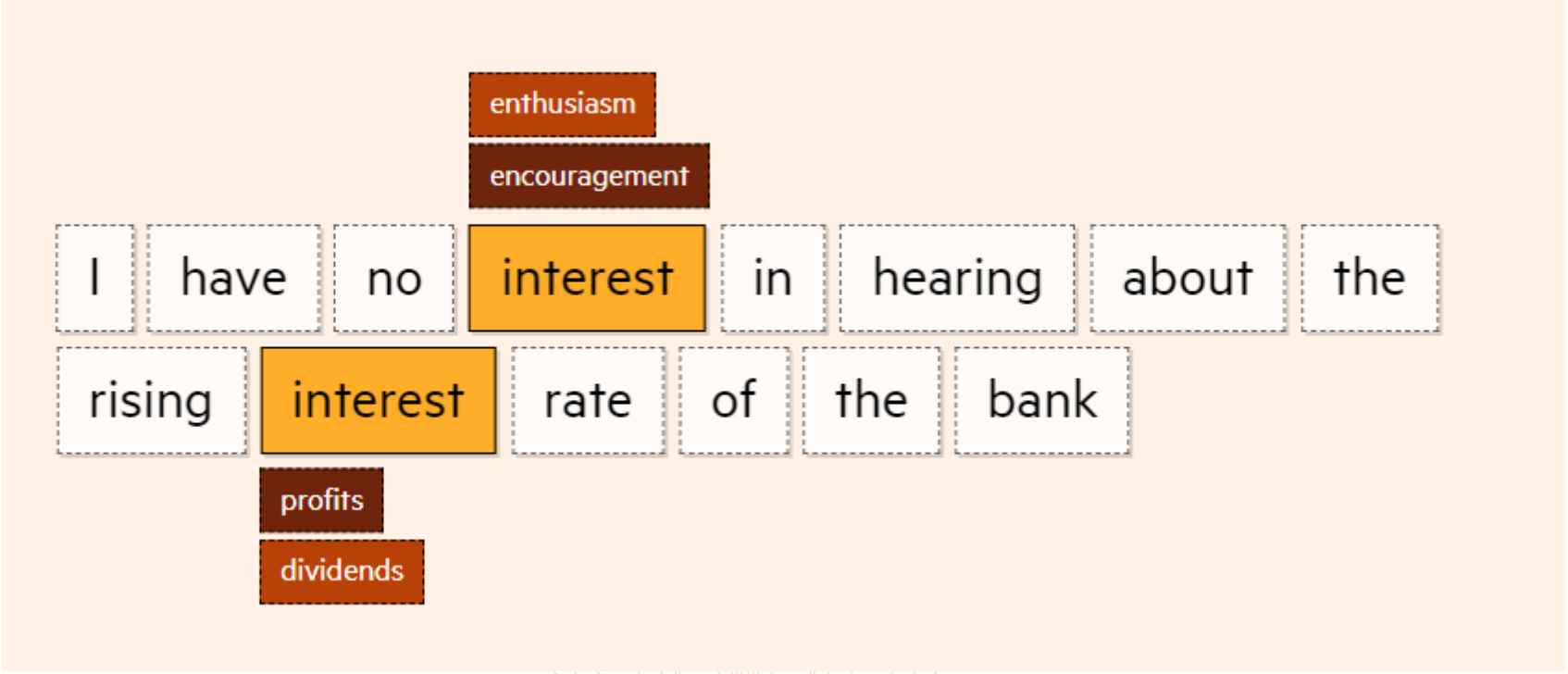




Benchmark	GPT-4 Evaluated few-shot	GPT-3.5 Evaluated few-shot	LM SOTA Best external LM evaluated few-shot	SOTA Best external model (includes benchmark-specific training)
MMLU Multiple-choice questions in 57 subjects (professional & academic)	86.4% 5-shot	70.0% 5-shot	70.7% 5-shot U-PaLM	75.2% 5-shot Flan-PaLM
HellaSwag Commonsense reasoning around everyday events	95.3% 10-shot	85.5% 10-shot	84.2% LLAMA (validation set)	85.6% ALUM
AI2 Reasoning Challenge (ARC) Grade-school multiple choice science questions. Challenge-set.	96.3% 25-shot	85.2% 25-shot	84.2% 8-shot PaLM	85.6% ST-MOE
WinoGrande Commonsense reasoning around pronoun resolution	87.5% 5-shot	81.6% 5-shot	84.2% 5-shot PALM	85.6% 5-shot PALM
HumanEval Python coding tasks	67.0% 0-shot	48.1% 0-shot	26.2% 0-shot PaLM	65.8% CodeT + GPT-3.5
DROP (f1 score) Reading comprehension & arithmetic.	80.9 3-shot	64.1 3-shot	70.8 1-shot PaLM	88.4 QDGAT

HOW DOES AN LLM WORK: PRODUCING TEXT

The learned patterns from the model's training, is used to **predict the next word** in response to a prompt or query



Trained on enough data, this can **mimic language understanding and reasoning capability**

source - https://ig.ft.com/generative-ai/

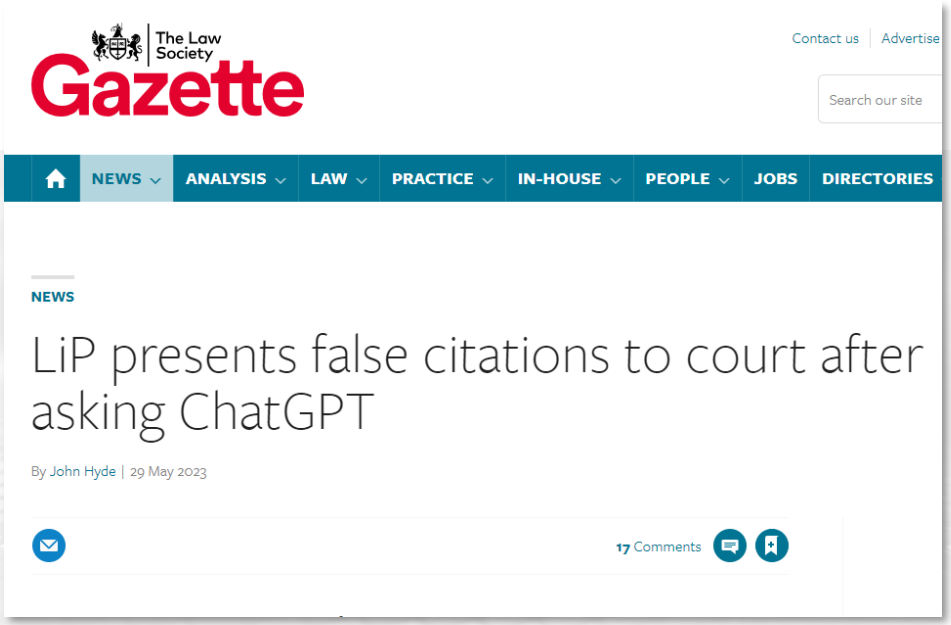
HOW DOES AN LLM WORK: HALLUCINATIONS

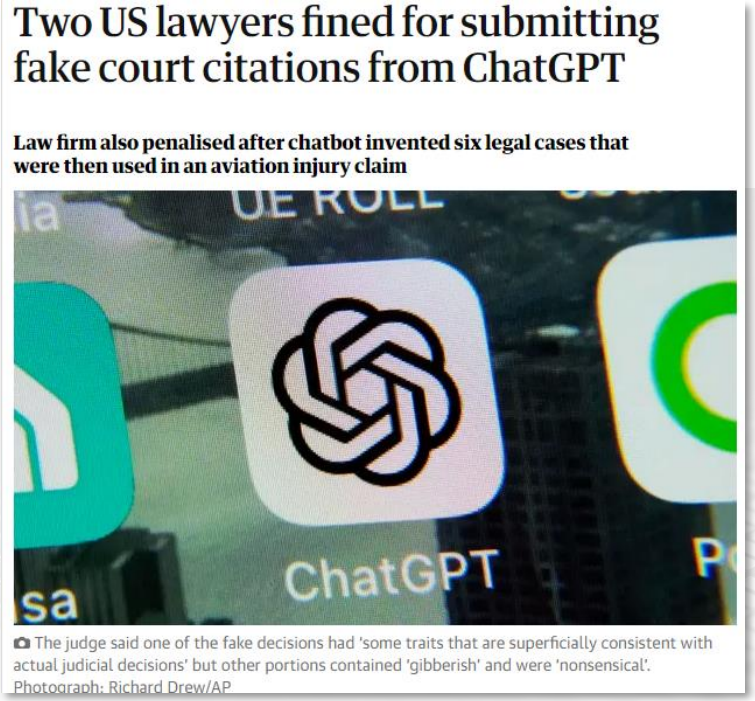
A ‘Hallucination’ is content generated by an LLM that is presented as accurate but is made-up, or inconsistent with the input data

The large language model creates text based on its understanding of the prompt and the broader context within it

Not a search tool, it relies on the content provided or the source it has been specifically connected to

The creativity is a consequence of the model and how it creates sentences





WHY THIS MATTERS TO LAW?

ADOPTING AI: BUSINESS

People **will** use this technology.

Business will look to legal for guidance on how to use and deploy Generative AI tools within current workflows.

32%

of marketers say their organisation is already using generative AI tools and 43% are actively considering doing so

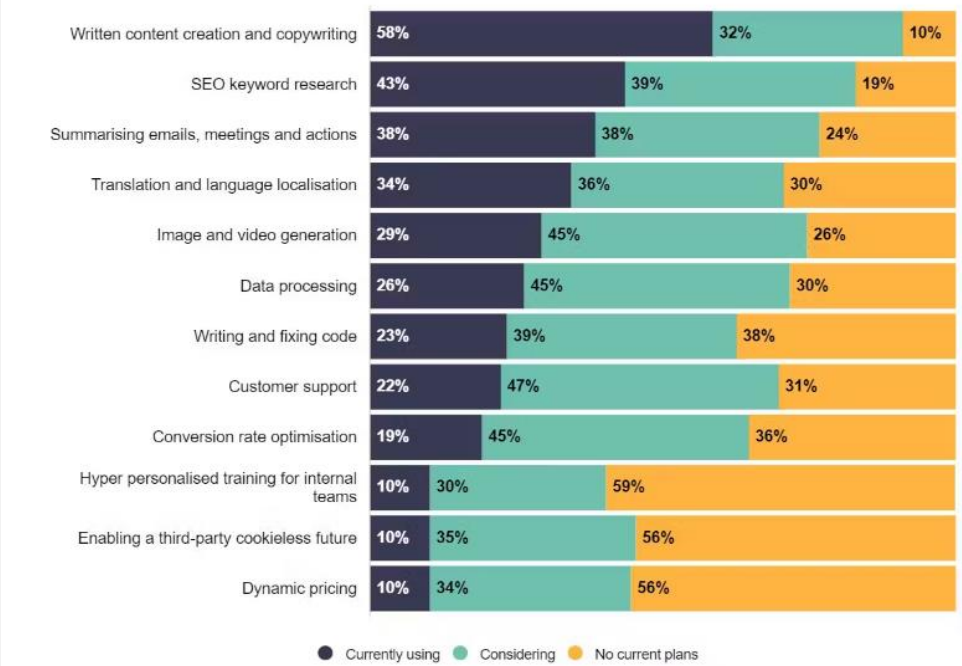
Econsultancy Future of Marketing survey

75%

of the value that generative AI use cases could potentially deliver fall across four areas: customer operations, marketing and sales, software engineering, and R&D

McKinsey & Company

Figure 2: What use cases for generative AI is your organisation already either pursuing or considering?



Source: https://econsultancy.com/generative-ai-adoption-marketing/

ADOPTING AI: LEGAL

Generative AI is proving useful across a range of legal use cases.

How do lawyers use this to increase delivery and match expectations?

60%

of in-house counsel expect law firms to use Generative AI

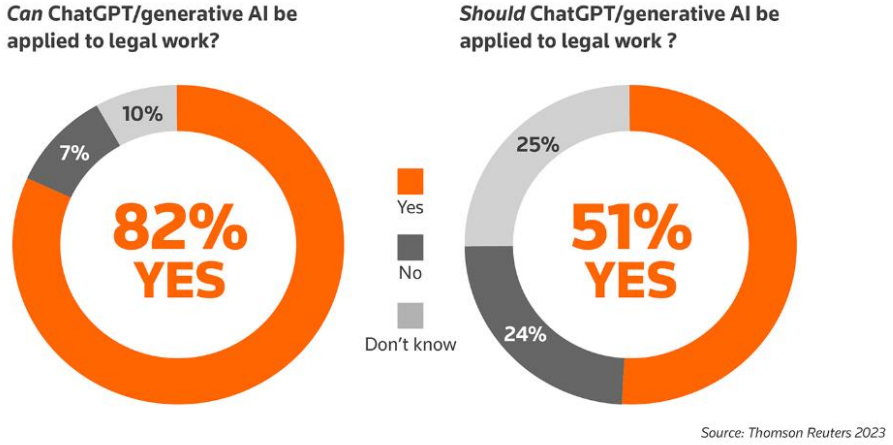
LexisNexis Legal Generative AI survey

73%

Nearly 3 in 4 lawyers (73%) say they plan to utilise generative AI in their legal work

Wolters Kluwer

Figure 1: **Attitudes towards ChatGPT and Generative AI for legal work**



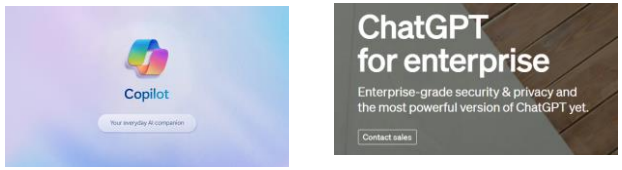
Source: Thomson Reuters 2023

[SLIDO POLL RESPONSES]

GENERATIVE AI MARKET

AI LANDSCAPE IN-HOUSE

Businesses starting with enterprise tools

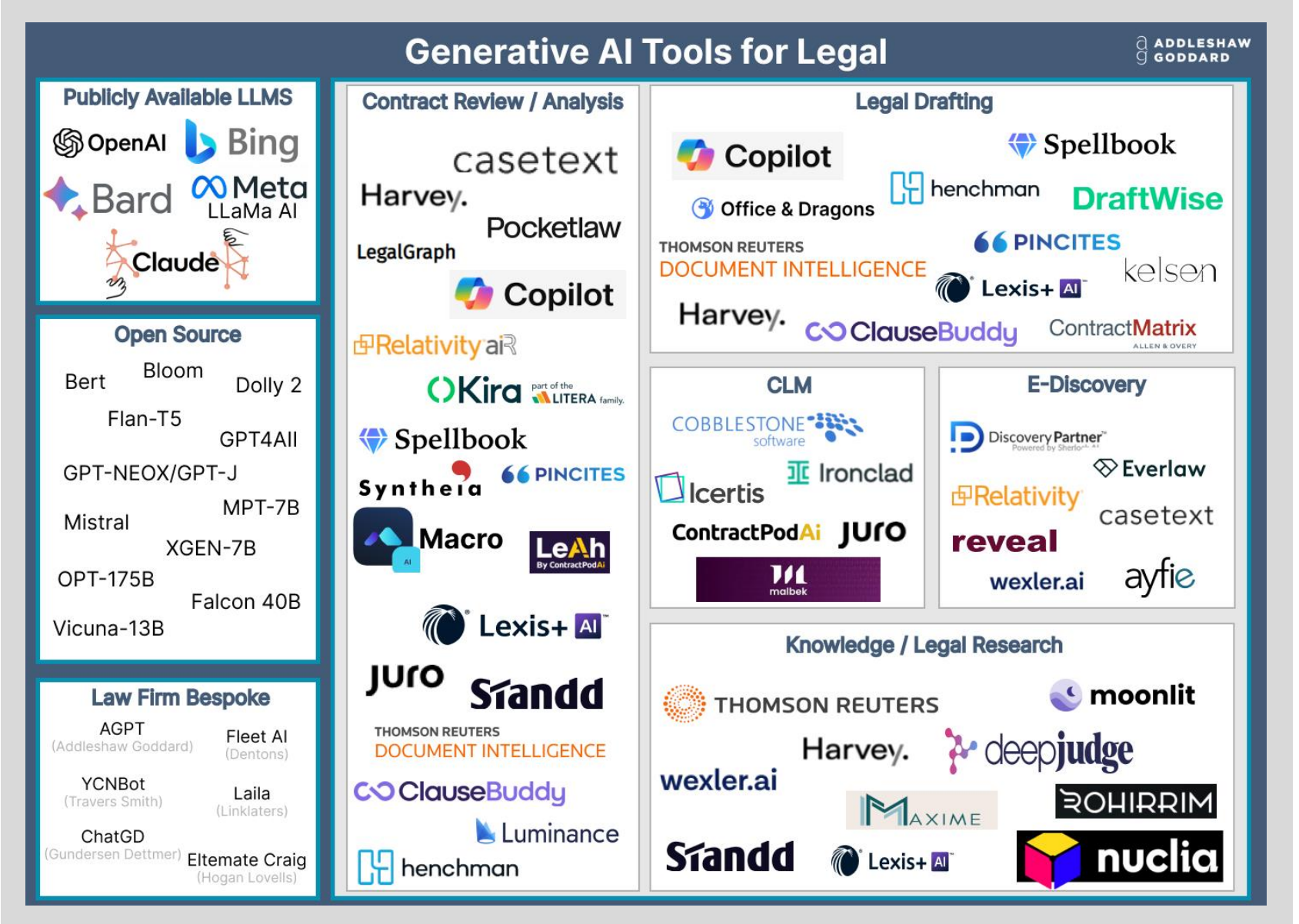


Leveraging public tools

Claude Bard ChatGPT

Legal specific toolkits

LexisNexis® THOMSON REUTERS


Generative AI Tools for Legal
ADDLESHAW GODDARD
Publicly Available LLMS
OpenAI
Bing
Bard
Meta LLaMa AI
Claude
Open Source
Bert
Bloom
Dolly 2
Flan-T5
GPT4All
GPT-NEOX/GPT-J
MPT-7B
Mistral
XGEN-7B
OPT-175B
Falcon 40B
Vicuna-13B
Law Firm Bespoke
AGPT (Addleshaw Goddard)
Fleet AI (Dentons)
YCNBot (Travers Smith)
Laila (Linklaters)
ChatGD (Gundersen Dettmer)
Eltemate Craig (Hogan Lovells)
Contract Review / Analysis
casetext
Harvey.
Pocketlaw
LegalGraph
Copilot
Relativity aiR
Kira
part of the LITERA family.
Spellbook
Syntheia
PINCITES
Macro
LeAh By ContractPodAi
Lexis+ AI
Juro
Standd
THOMSON REUTERS DOCUMENT INTELLIGENCE
ClauseBuddy
Luminance
henchman
Legal Drafting
Copilot
Spellbook
Office & Dragons
henchman
DraftWise
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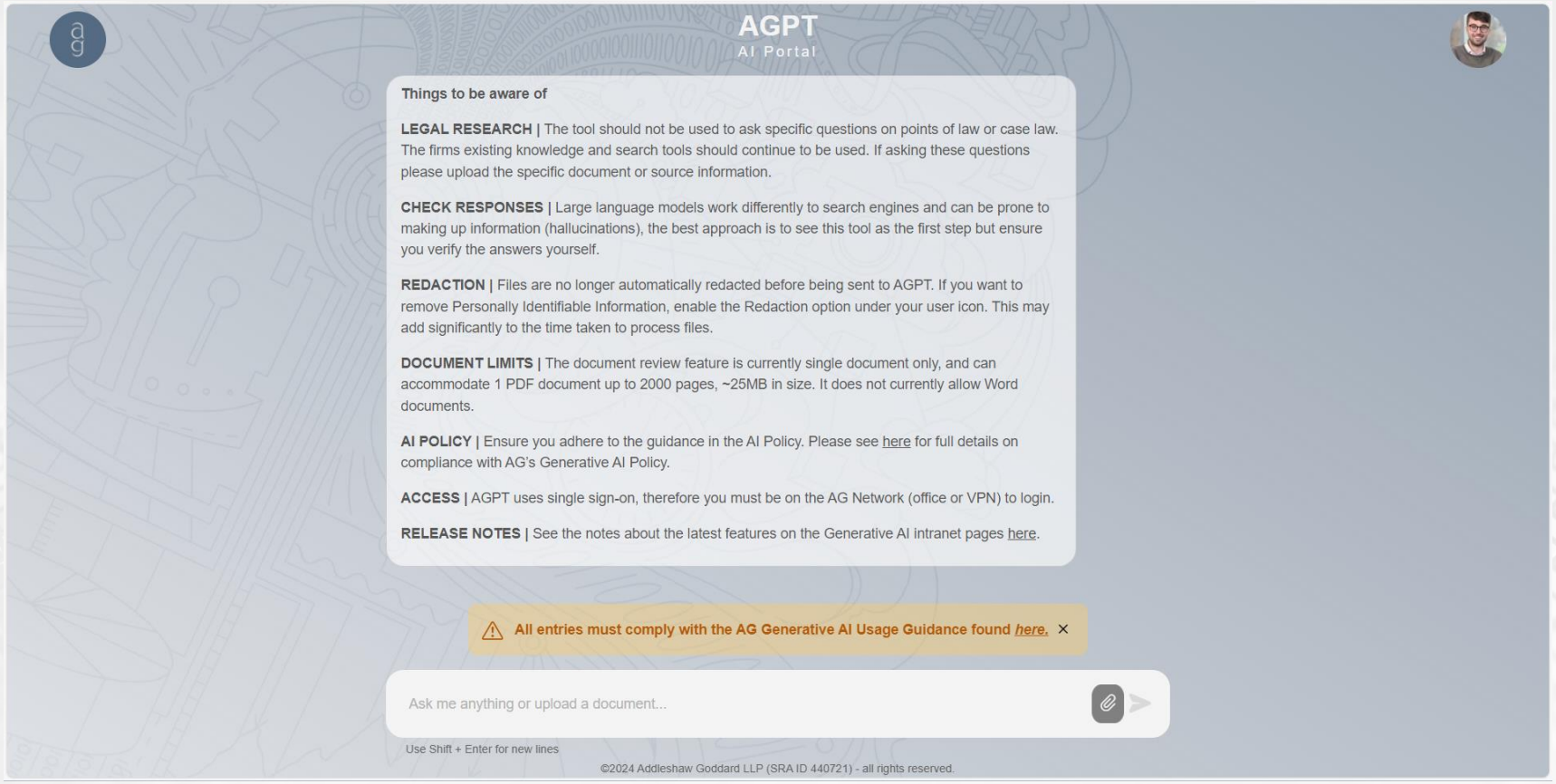
PINCITES
kelsen
Lexis+ AI
Harvey.
ClauseBuddy
ContractMatrix ALLEN & OVERY
CLM
COBBLESTONE software
Icertis
Ironclad
ContractPodAi
Juro
malbek
E-Discovery
Discovery Partner
Everlaw
Relativity
casetext
reveal
wexler.ai
ayfie
Knowledge / Legal Research
THOMSON REUTERS
moonlit
Harvey.
deepjudge
wexler.ai
MAXIME
ROHIRRIM
Standd
Lexis+ AI
nuclia

AGPT



https://bcove.video/47KIO7y

COMMON QUESTIONS AND CONCERNS

TRAINING AND KNOWLEDGE

Point in time updates vs continuous learning

Training data cut offs does not necessarily mean ‘knowledge cut offs’

Can use tools to browse the internet and retrieve more up to date knowledge for a prompt

Does not ‘learn’ from interactions, but can be fine-tuned or prompted to give better responses

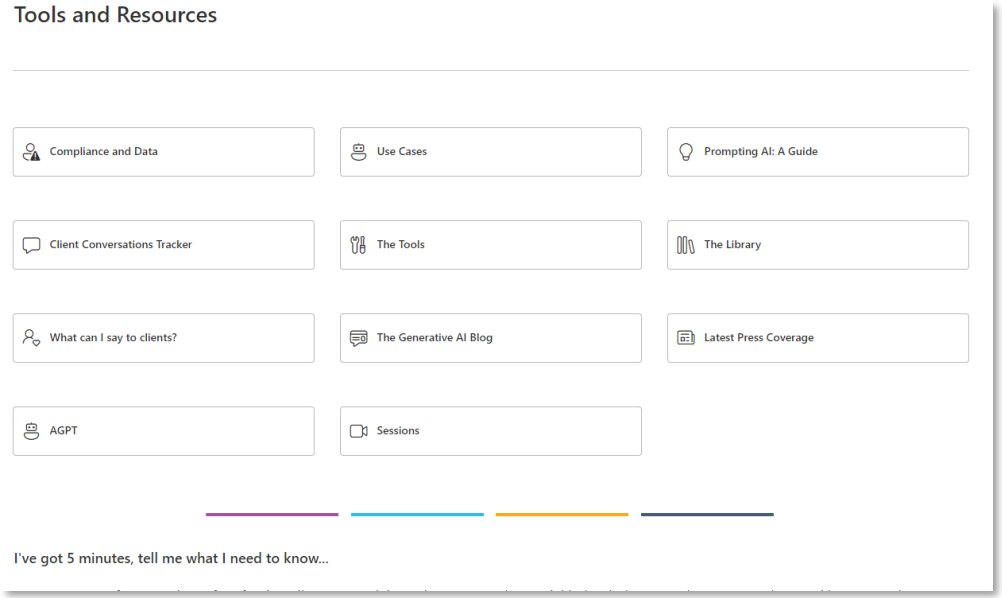
Not a database...

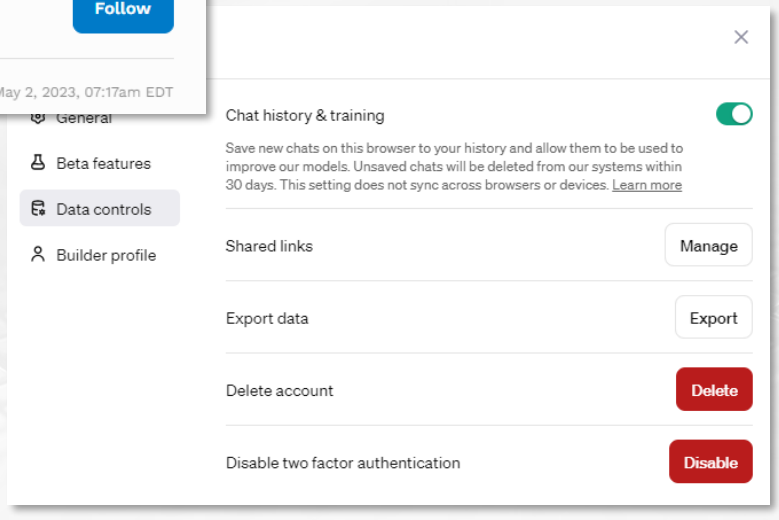
RISKS AND APPROACHES TO CONTROL

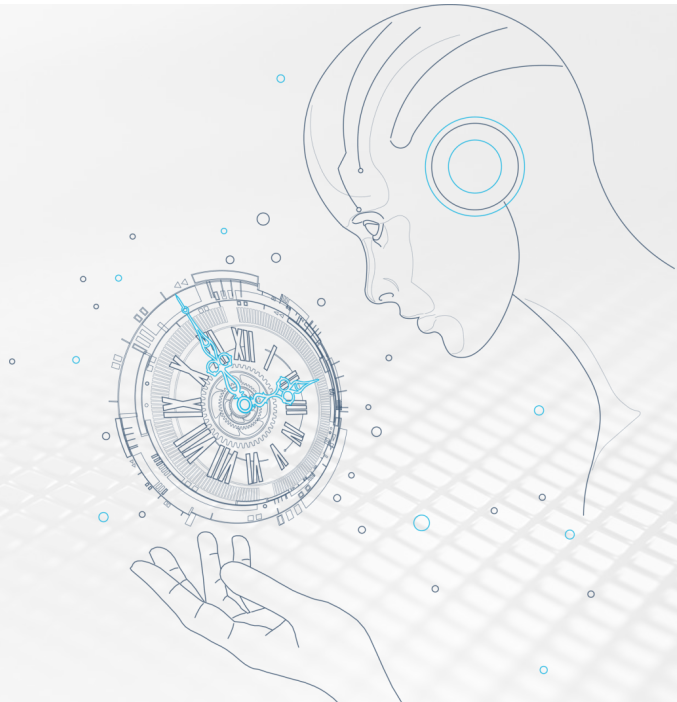
Outright bans

Sensationalist headlines

Internal development within parameters







SAFETY

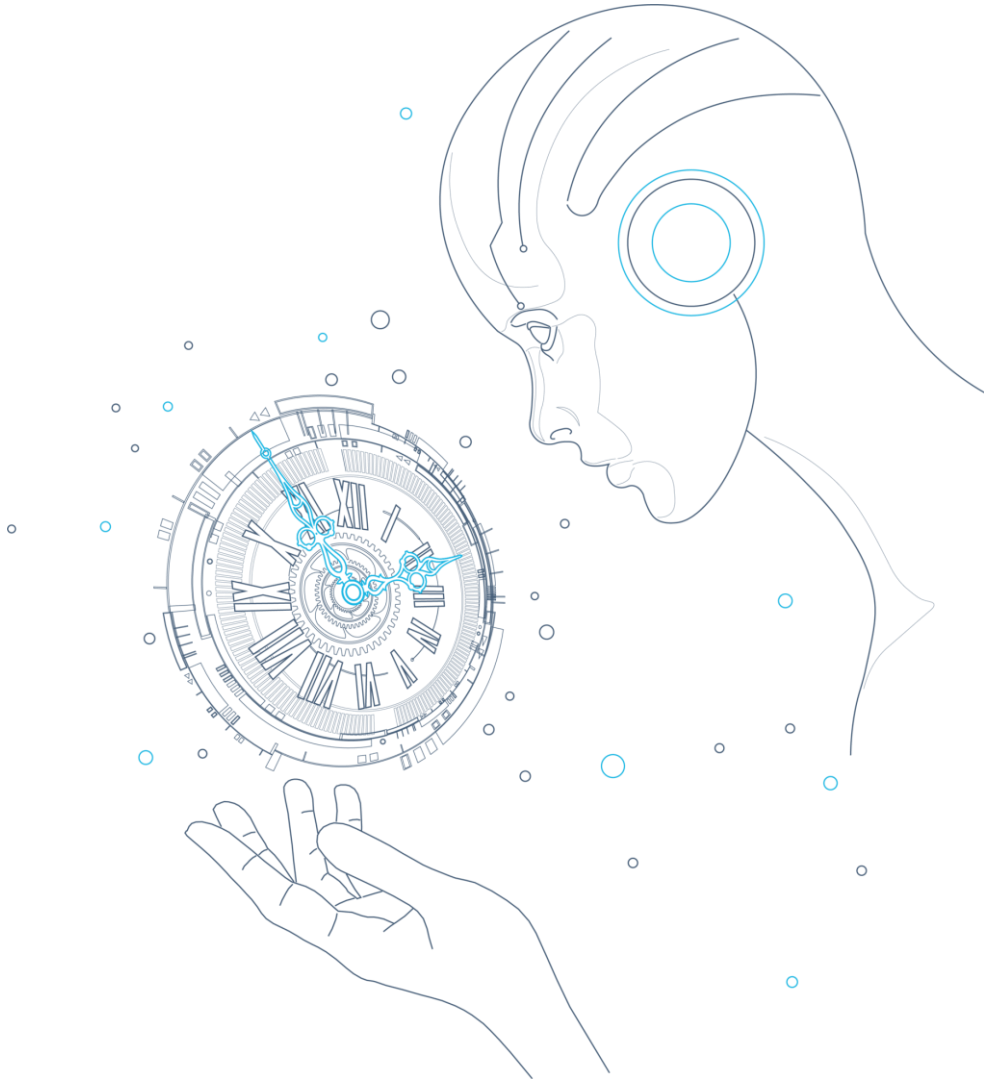
- Embrace or lock down
- Same considerations as other cloud technologies in law
- 2023 saw a large increase in startups
- Risk averse due to high-risk industry

DATA SECURITY

- Information Security Checklist
- Data stored within the UK
- Data processed within UK or under strict processing terms
- ISO / SOC2 compliance
- Cloud / On Premise
- Adequate information security policies
- Adequate infrastructure and support

OTHER CONSIDERATIONS

- This tech can get expensive
- Challenges for change in law remain
- Pricing models for law raise questions
- Accuracy - what is the value of 100% vs 90%?
- Liability and reliance



COMING UP

WEBINAR 2:

EXPLORING GENAI IN LEGAL: REAL-WORLD APPLICATIONS

21 February 2024

10:00 - 11:00

WEBINAR 3:

SIMPLIFYING THE COMPLEX: MAKING SENSE OF GENAI

27 February 2024

10:00 - 11:00

QUESTIONS