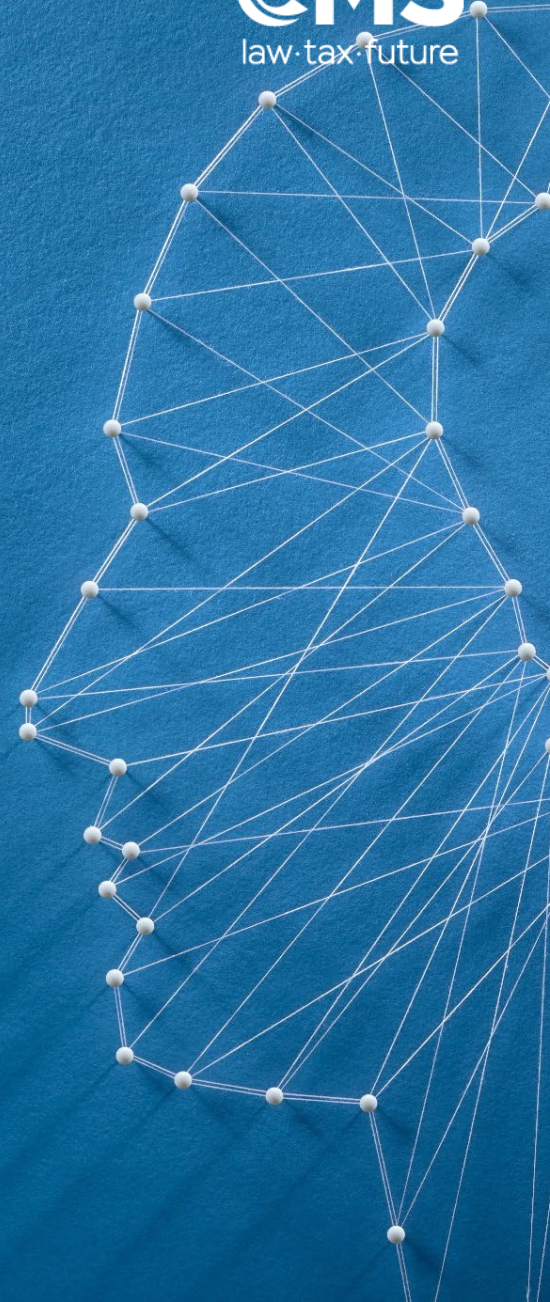




Artificial Intelligence technologies

Putting in place the legal framework to support enterprise

Dr Rachel Free, Partner (patent attorney), CMS
Cameron McKenna Nabarro Olswang, LLP

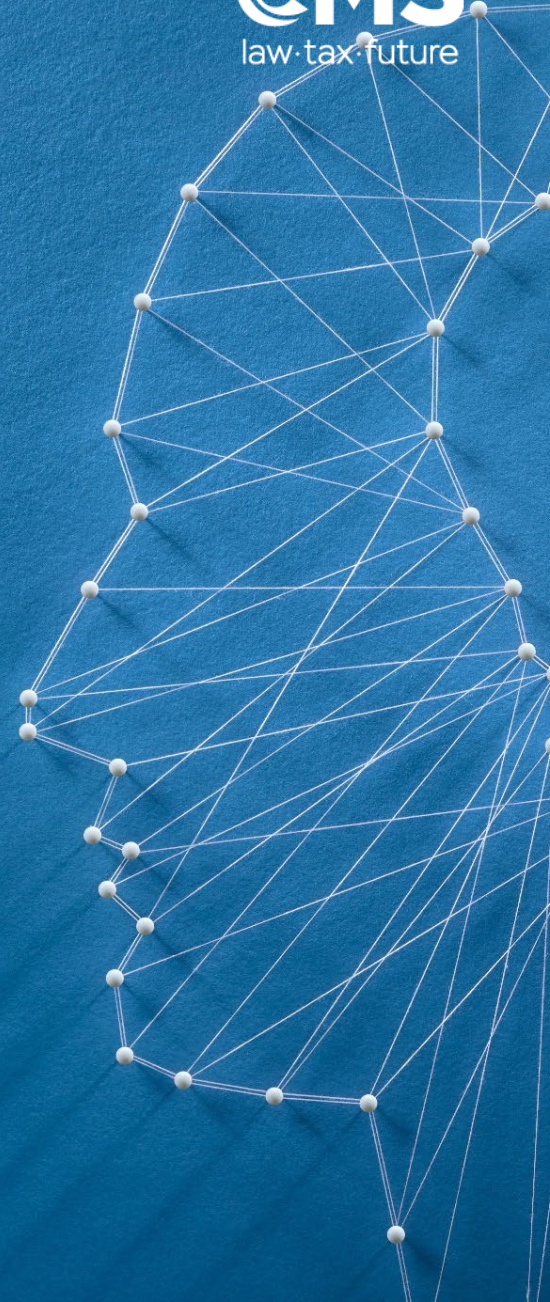


What we'll be covering today

Helping clients protect their AI technology

What do clients struggle with most?

Summary



Helping clients protect their AI technology with patents



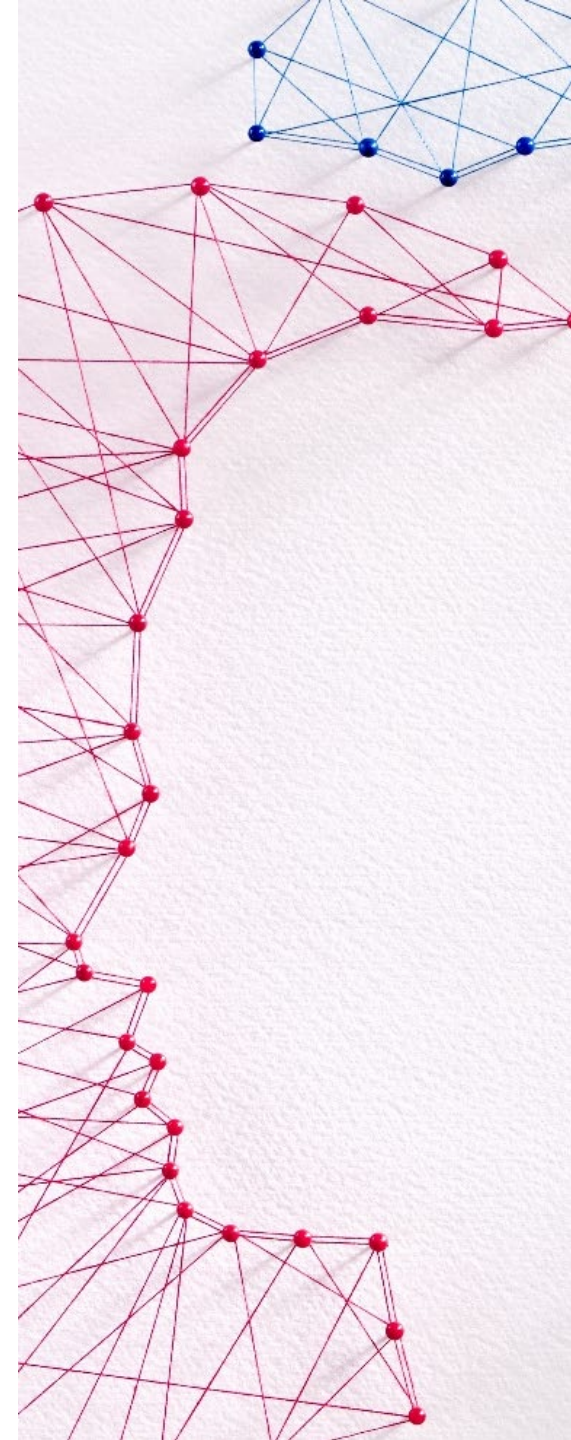
scientists



Patent attorney
services



Patent
portfolio



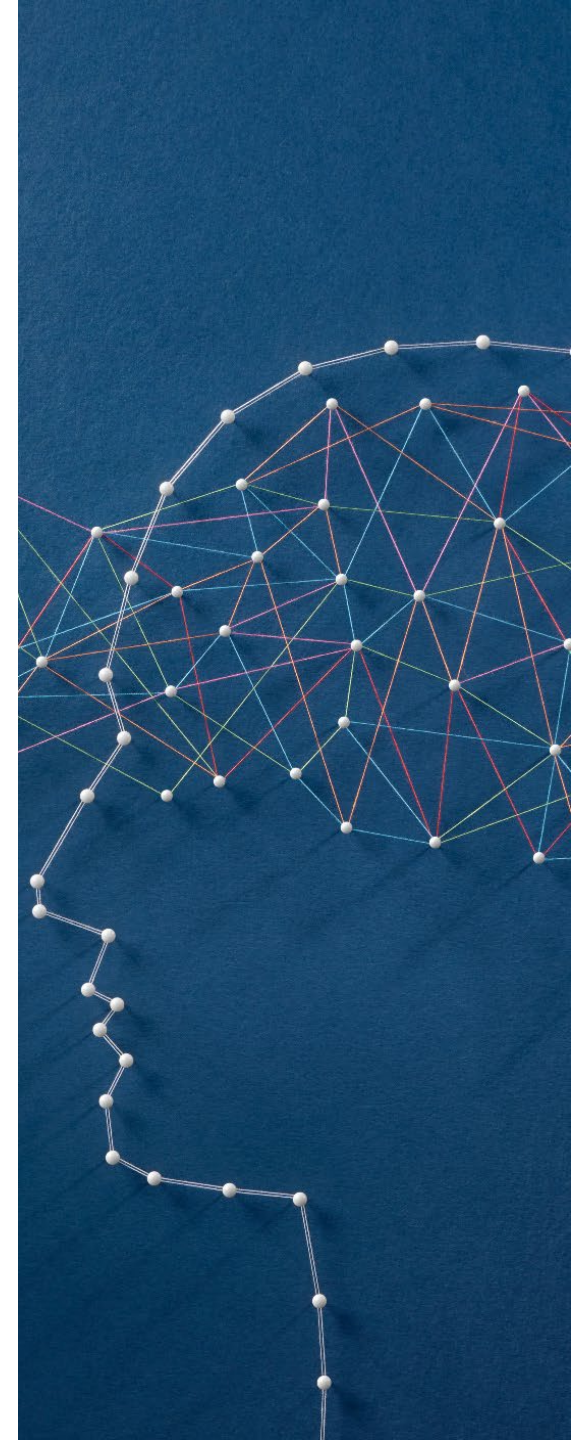
Clients struggle with the balance between trade secrets and patent protection for AI technologies



Patent applications are published revealing full details of the technology even if later the patent application is refused by the patent office

Trade secrets are confidential information protected using employment contracts and legal agreements

Generally a choice has to be made between trade secrets and patents as it is not possible to use both for the same technology

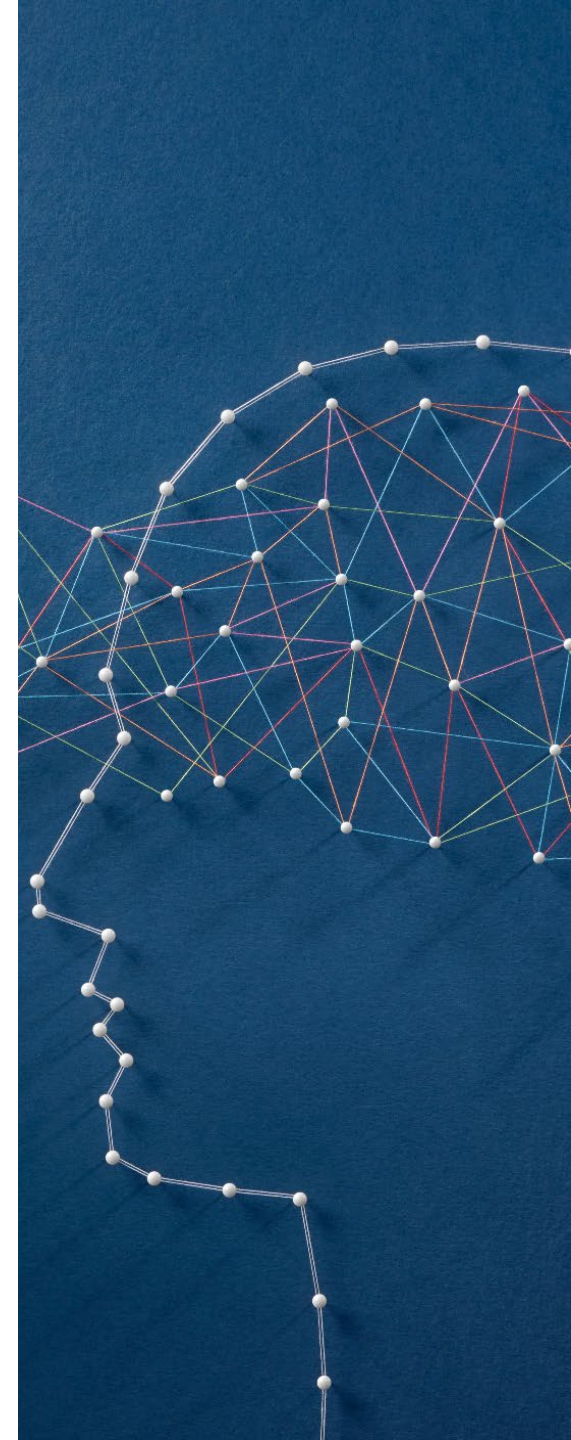


Clients struggle with the balance between trade secrets and patent protection for AI technologies



For AI technologies the balance is often skewed towards trade secrets

- difficult to detect infringement
- difficult to obtain patent protection in all jurisdictions
- ability to design around patents for AI technologies



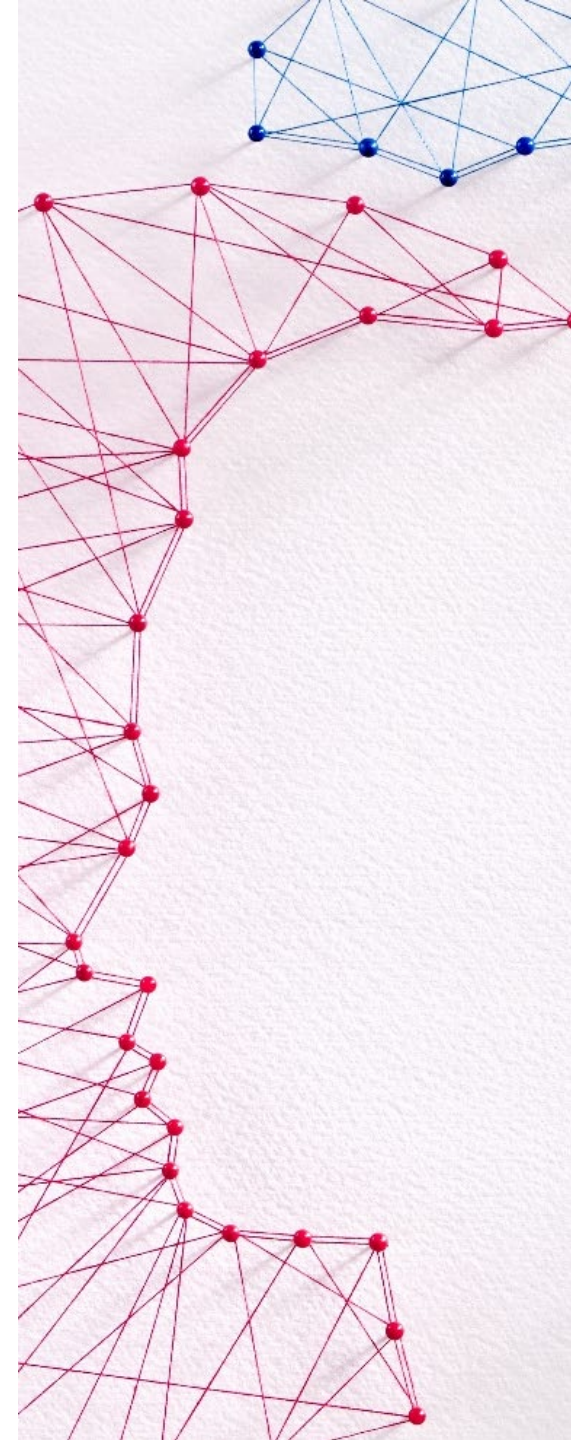
Clients who use trade secret protection have risks

Smaller patent portfolio than competitors

Risk of losing trade secret protection through human error, disgruntled employee ...



Trade secret protection is lost as soon as the confidential information is disclosed. In that case the trade secret protection can't be regained and would potentially be free for competitors to use.



Clients struggle with the differences in ability to obtain patent protection for AI technologies in different jurisdictions

Dropout algorithm patented in USA; not patent eligible in Europe

System and method for addressing overfitting in a neural network

From the Google patents website

Abstract

A system for training a neural network. A switch is linked to feature detectors in at least some of the layers of the neural network. For each training case, the switch randomly selectively disables each of the feature detectors in accordance with a preconfigured probability. The weights from each training case are then normalized for applying the neural network to test data.

Images (3)

The screenshot shows a patent entry for US9406017B2, titled "United States". Below the title, there are three interactive buttons: "Download PDF" (with a document icon), "Find Prior Art" (with a magnifying glass icon), and "Similar" (with a sigma symbol icon). At the bottom of the entry, the inventors are listed as Geoffrey E. Hinton, Alexander Krizhevsky, Ilya Sutskever, and Nitish Srivastva.

Some argue that core AI algorithms are not patent eligible in Europe

Clients struggle with the differences in ability to obtain patent protection for AI technologies in different jurisdictions

Document classification technology patented in USA and China; not patent eligible in Europe

Template-based structured document classification and extraction

Abstract

Techniques are described herein for automatically generating data extraction templates for structured documents (e.g., B2C emails, invoices, bills, invitations, etc.), and for assigning classifications to those data extraction templates to streamline data extraction from subsequent structured documents. In various implementations, a data extraction template generated from a cluster of structured documents that share fixed content may be identified. Features of the cluster of structured documents may be applied as input to extraction machine learning model(s) trained to provide location(s) of transient field(s) in structured documents, to determine location(s) of transient field(s) in the cluster of structured documents. An association between the

From the Google patents website

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Inventor: [Ying Sheng](#), [Yifeng Lu](#), [Jing Xie](#), [Jie Yang](#), [Luis Garcia Pueyo](#), [Jinan Lou](#), [James Wendt](#)

Clients struggle with the differences in ability to obtain patent protection for AI technologies in different jurisdictions

Language translation technology patented in USA , Japan and China; not patent eligible in Europe

Foreign language translation using product information

Abstract

Product information may be utilized to create a translation dictionary. The translation dictionary may then be utilized to translate search queries from a foreign language to the primary language that is utilized to provide an online e-commerce marketplace. The translated search queries may then be utilized to perform a search of a product catalog maintained by the online e-commerce marketplace. The translation dictionary created with the product information might also be utilized to translate resources,

From the Google patents website

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Clients struggle with understanding what problems are technical in Europe

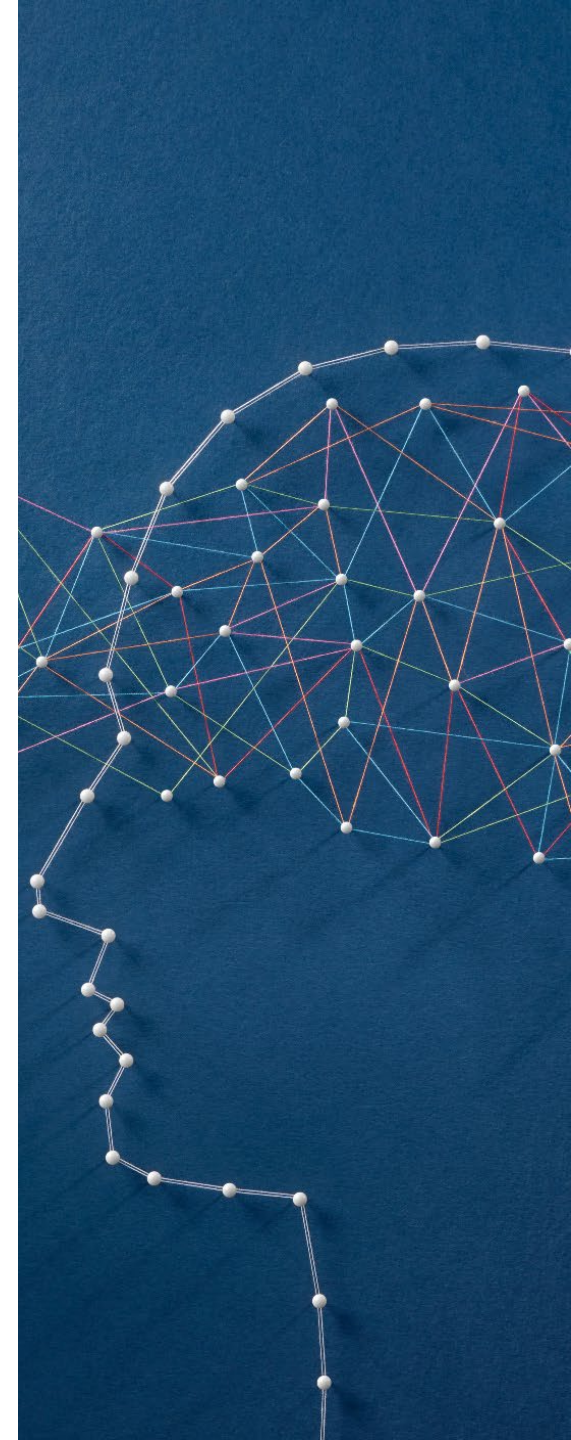
How to improve generalization ability of neural networks?

How to classify documents automatically?

How to understand natural language?

How to recognize objects in images?

How to recognize speech in an audio signal?



Clients struggle with understanding what problems are technical in Europe

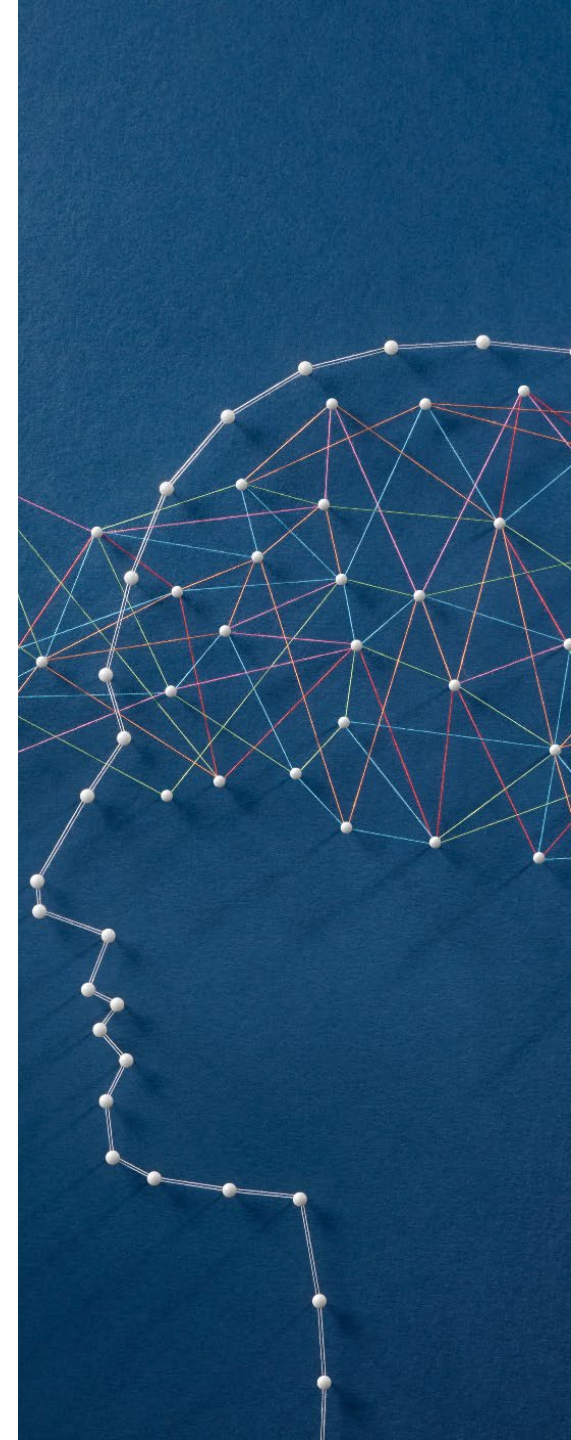
How to improve generalization ability of neural networks? NO

How to classify documents automatically? NO

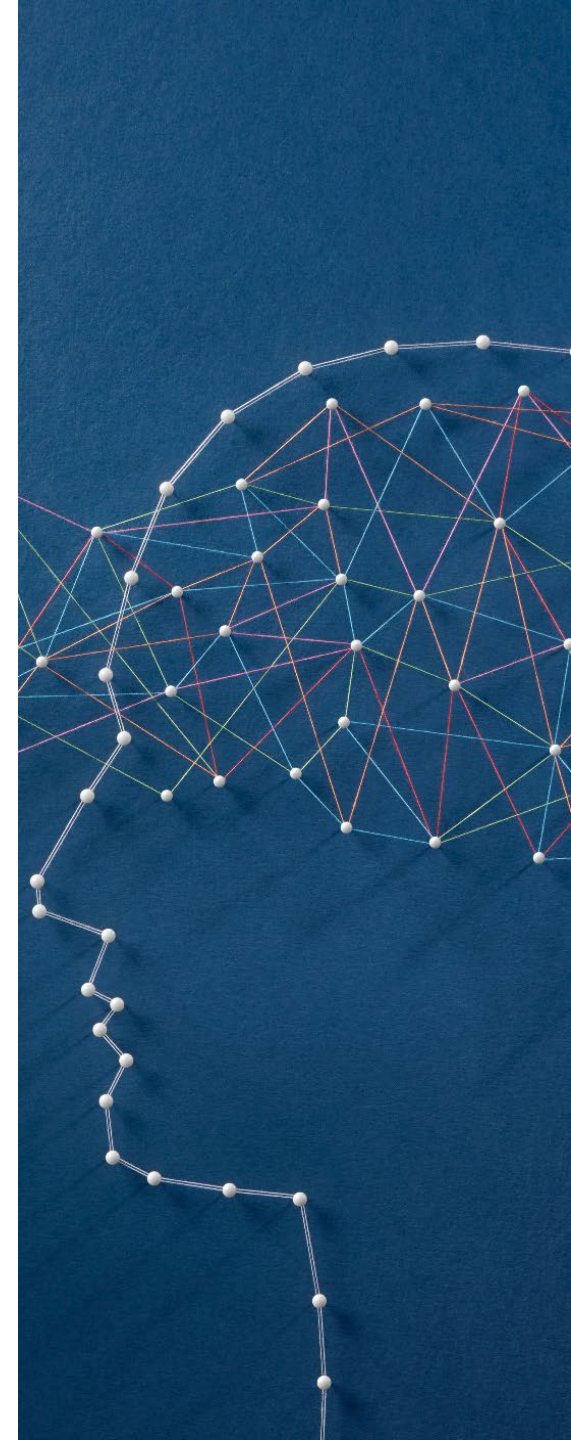
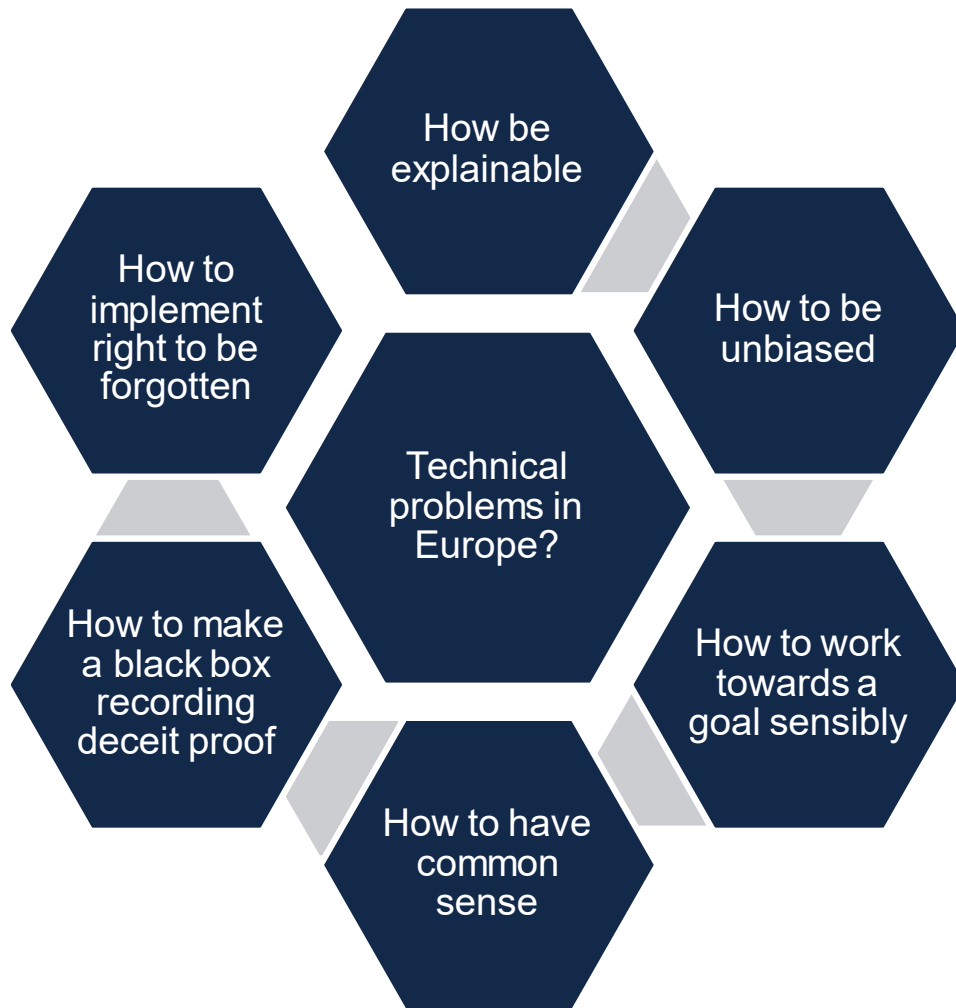
How to understand natural language? NO

How to recognize objects in images? YES

How to recognize speech in an audio signal?
YES



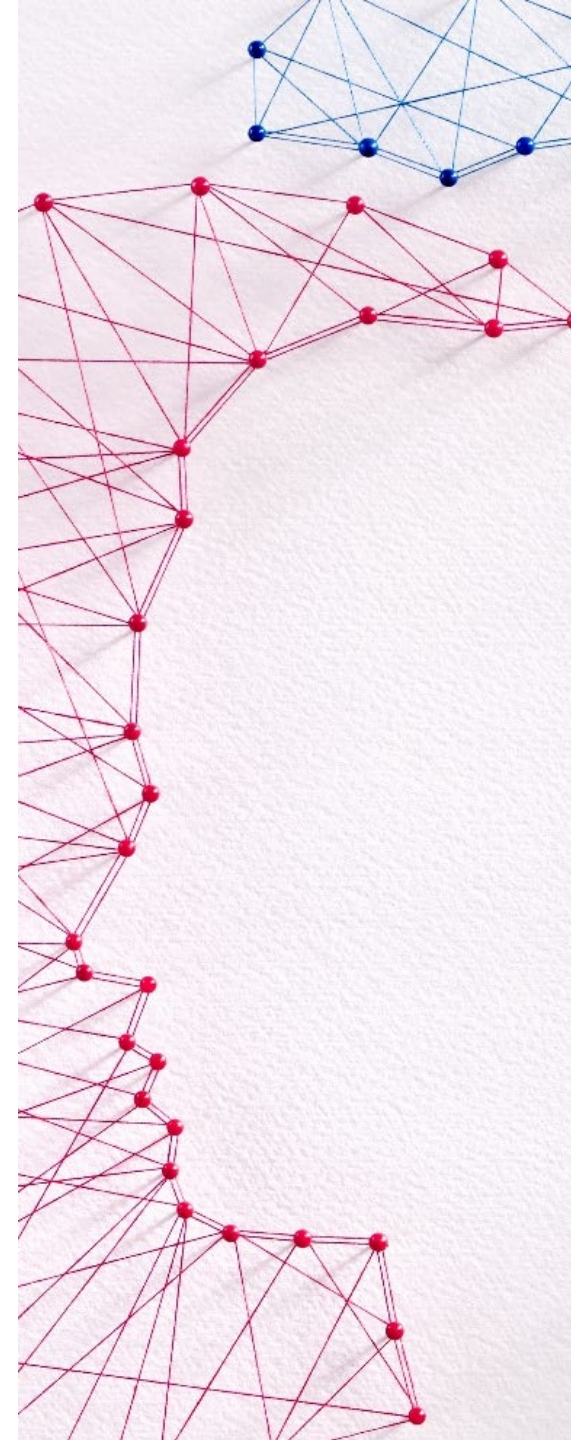
New problems



Clients struggle with knowing what information to include in patent applications for AI technology



Recent European Patent Office case law indicates that patent applications may be refused if there is insufficient information about the training data

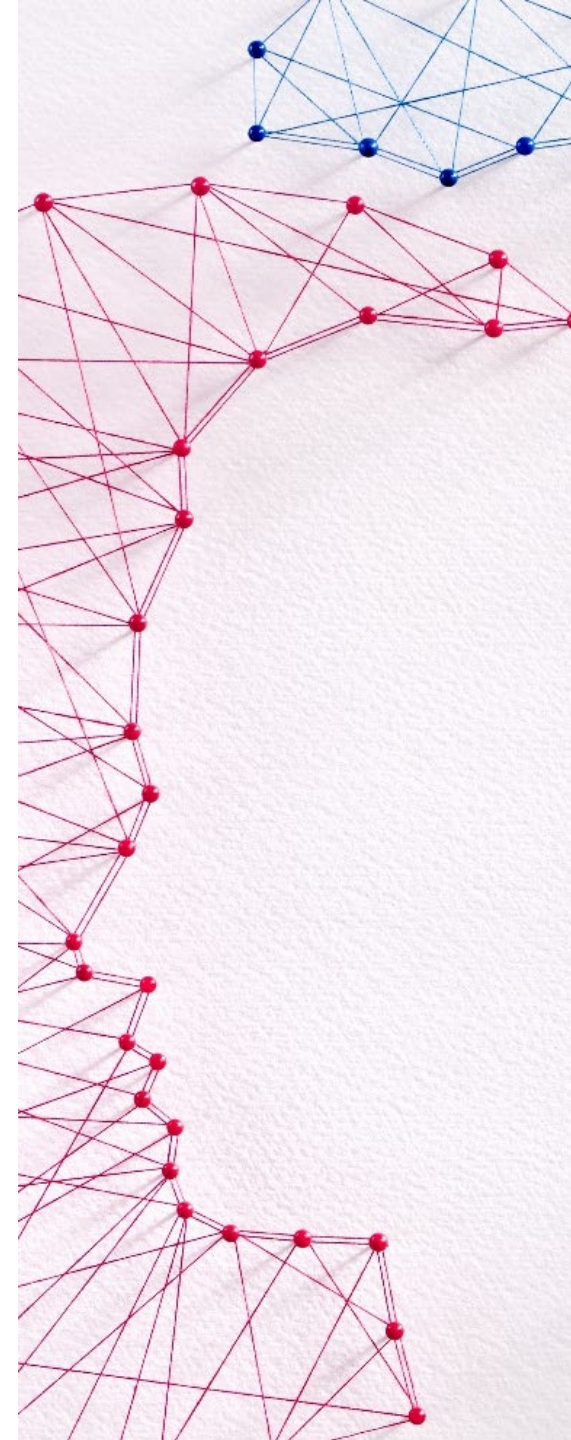


Clients struggle with knowing what information to include in patent applications for AI technology

14 Million hand annotated images



Will the scope of protection be limited to AI systems trained using ImageNet?

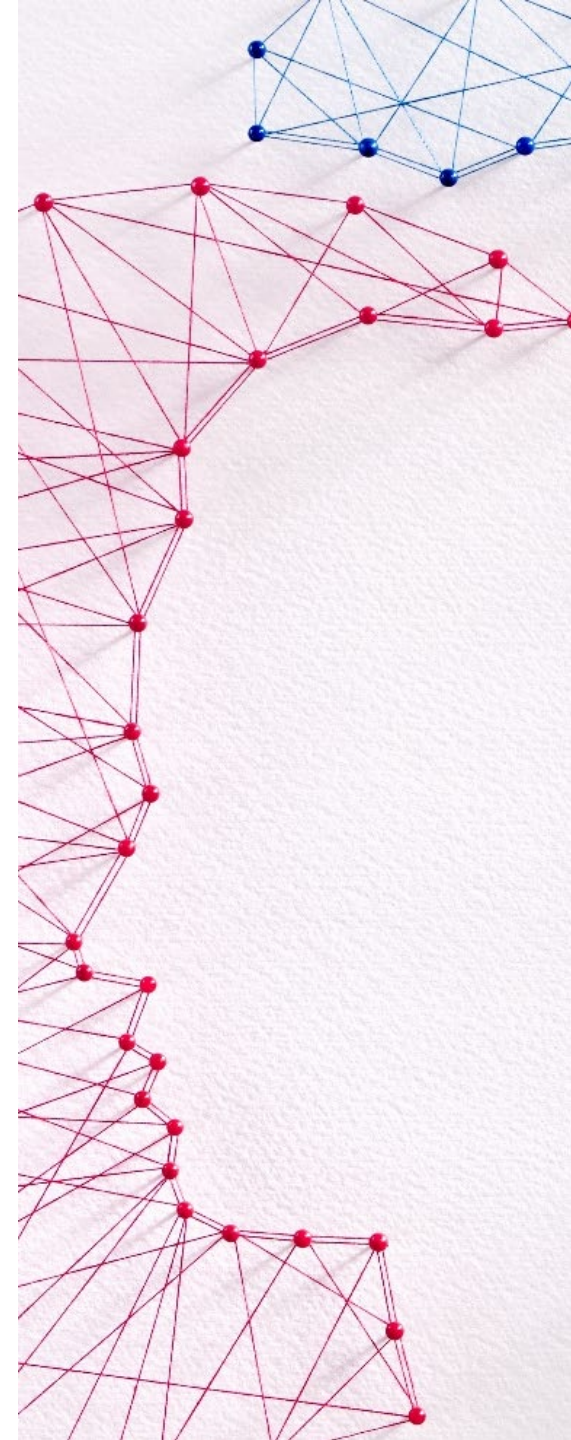


Summary

Skew towards trade secrets and away from patents gives risk to business

Patent eligibility differences between jurisdictions leads to complexity and uncertainty

Uncertainty around what detail to include for AI algorithms.





Patent
Attorneys

THANKS
for attending this
presentation

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