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FICPI

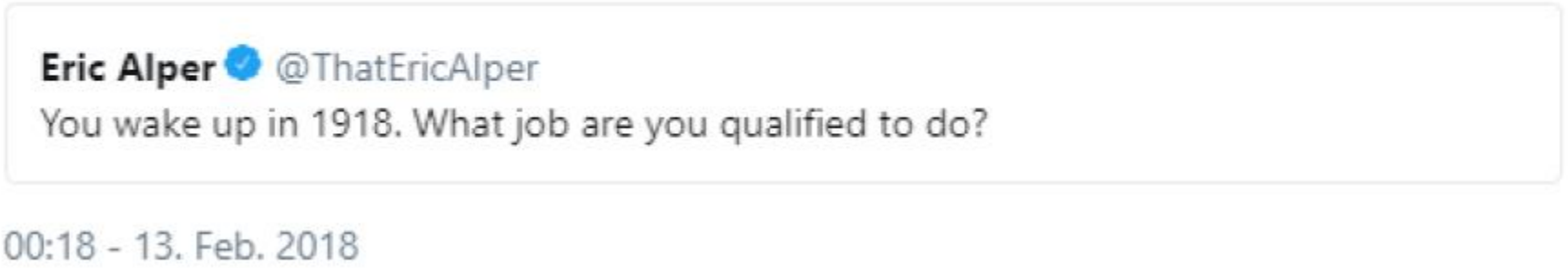
AI in IP: How will Artificial Intelligence transform the practice of IP Law ?

Alexander Esslinger
European and German Patent Attorney
a.esslinger@bettenresch.com

Eric Alper @ThatEricAlper

You wake up in 1918. What job are you qualified to do?

Patent attorney. The job hasn't changed that much in 100 years.



Press release form May 9, 2018:

Baker McKenzie collaborates with LitiGate to develop AI litigation platform

Leading global law firm Baker McKenzie has partnered with LitiGate, a Tel Aviv-based legal tech venture, to assist them to further develop and test a litigation platform that uses artificial intelligence ('AI') to automate legal research and argument assessment in relation to High Court applications.

Alongside Taylor Wessing and Mishcon de Reya, we have been approached to collaborate with LitiGate for our extensive experience in dispute resolution and continued investment in technology.

The platform uses state of the art machine learning algorithms to autonomously review arguments, suggest counter arguments and fall-backs, and recommend preferred procedural steps.

What is Artificial Intelligence ? (1)

The concept of AI was born in the US in 1956. The idea was to construct complex machines that possess the same characteristics as human intelligence.

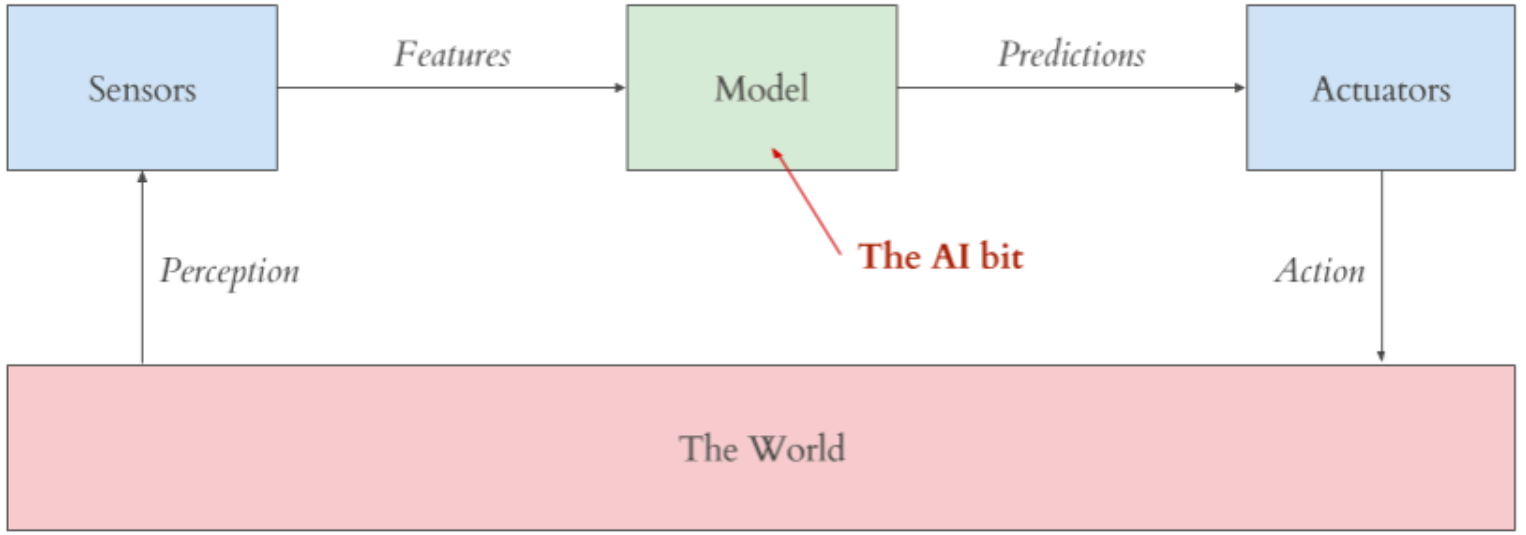
Marvin Minsky stated in 1967: "*Within a generation ... the problem of creating 'artificial intelligence' will substantially be solved*"

The goal of replicating human intelligence, however, still remains elusive today.

Alternative, dynamic definition of AI: "*Whatever computers can't do yet.*"

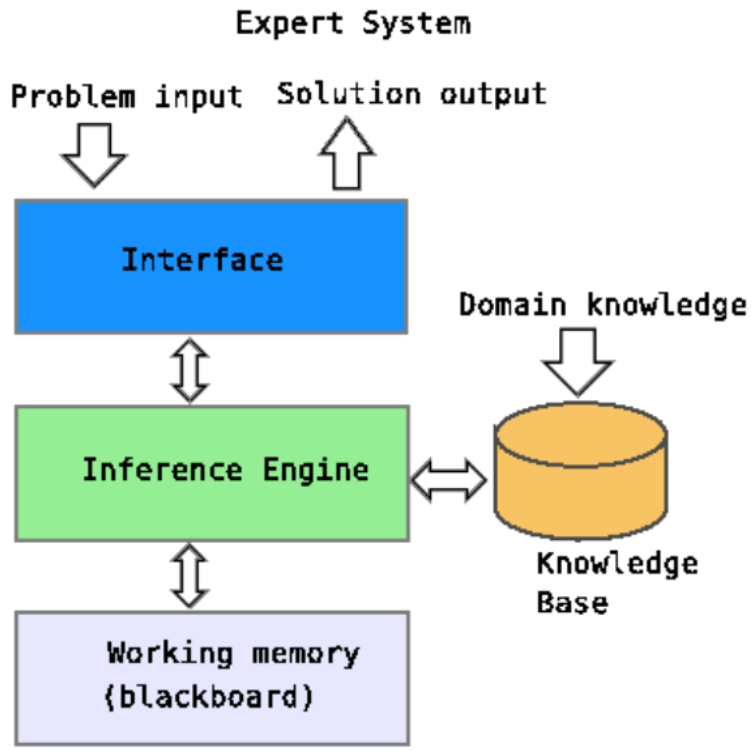
What is Artificial Intelligence ? (2)

Model of AI (Yonatan Zunger):



Expert systems (rule-based systems)

Expert systems introduced in the 1980s were the first widely commercially used AI-applications



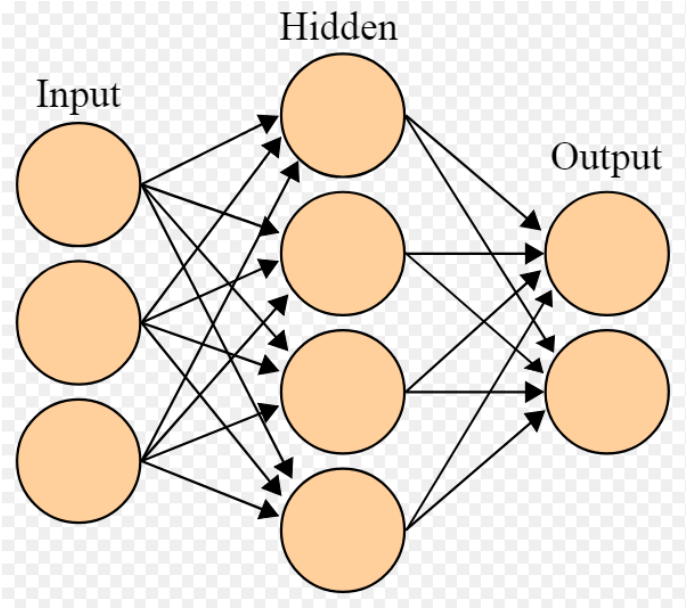
Machine Learning

Machine learning (ML) is a type of artificial intelligence that allows software applications to become more accurate in predicting outcomes without being explicitly programmed. The basic premise of machine learning is to build algorithms that can receive input data and use statistical analysis to predict an output value within an acceptable range.

Neural Networks

An attempt to model the signal processing in the human (or animal) brain

Non-deterministic data processing



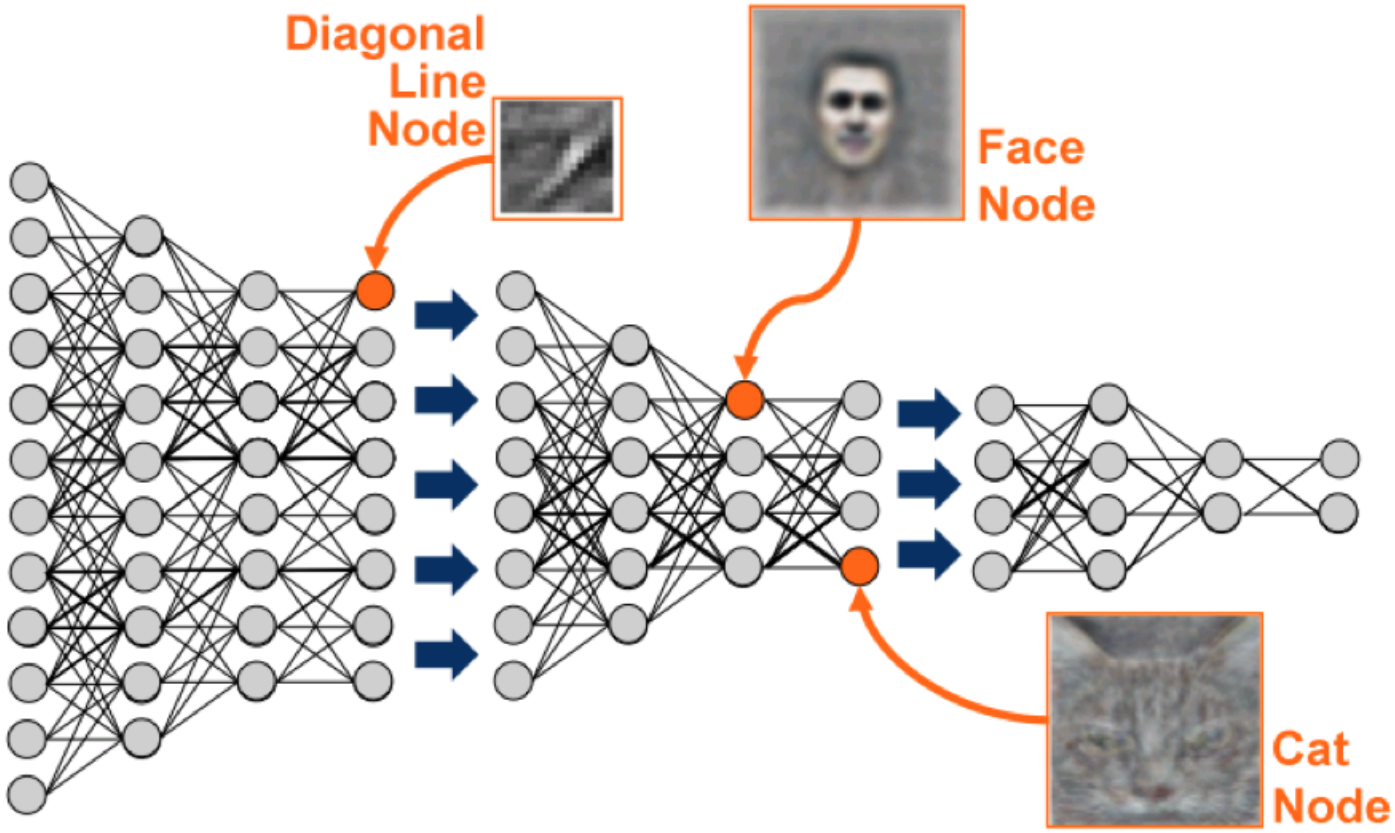
Deep Learning

Deep learning is a class of machine learning algorithms that

- use a cascade of multiple layers of nonlinear processing units for feature extraction and transformation. Each successive layer uses the output from the previous layer as input.
- learn in supervised (e.g., classification) and/or unsupervised (e.g., pattern analysis) manners.
- learn multiple levels of representations that correspond to different levels of abstraction; the levels form a hierarchy of concepts.

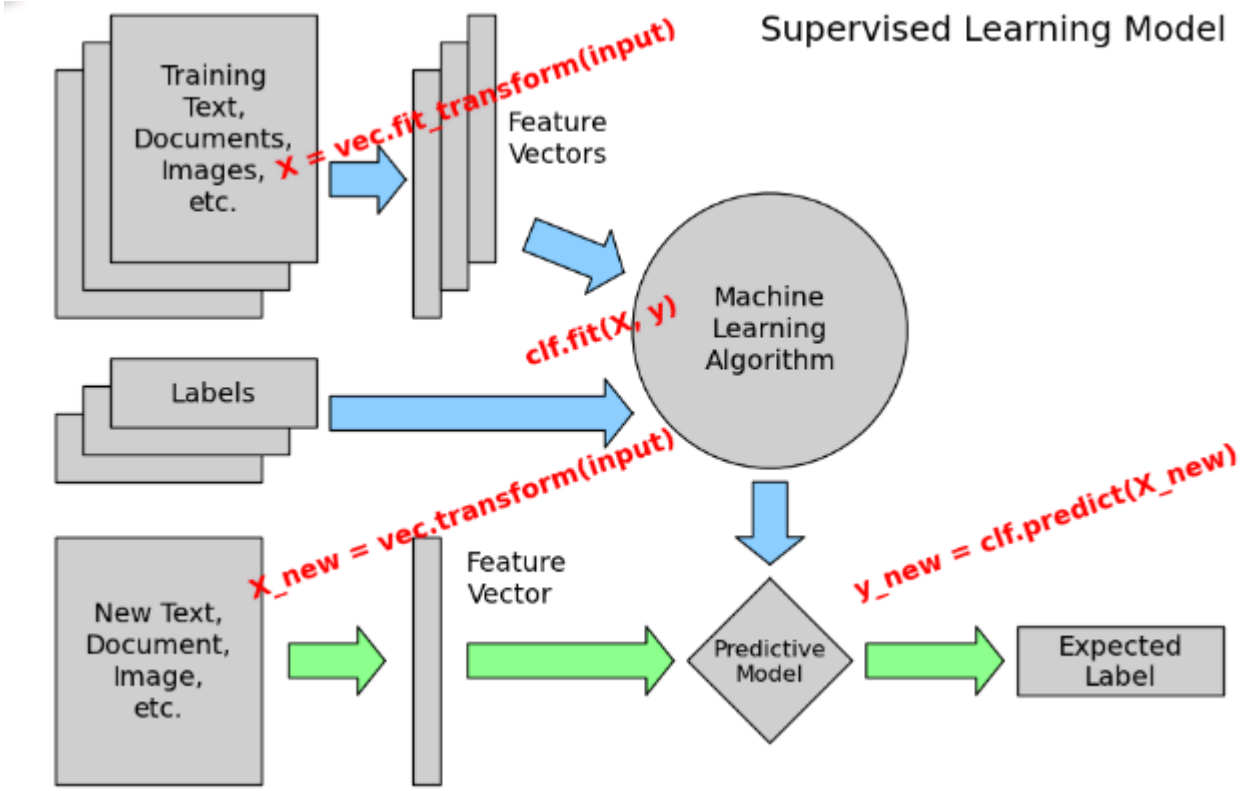
Deep Learning

Lots of Data + Neural Nets + Training = Hierarchical & Associational Feature Representation



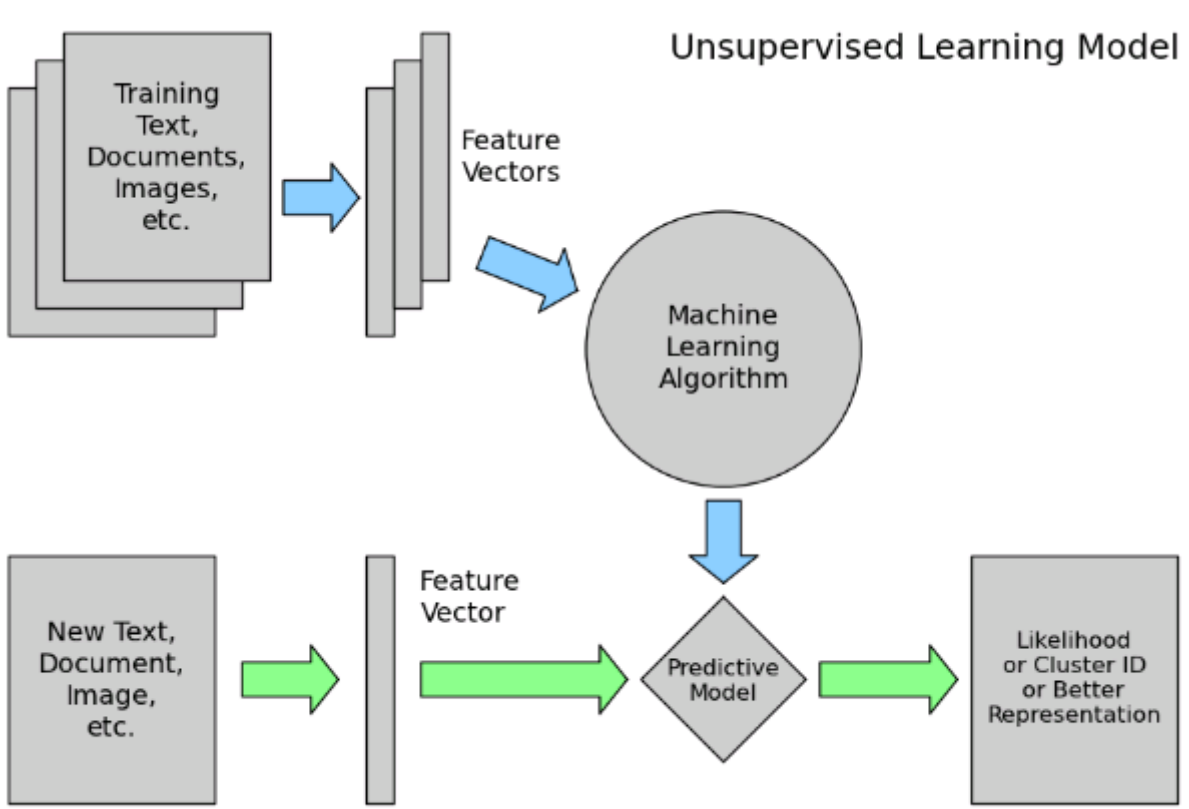
(John Smart on Medium)

Deep Learning



([Machine learning tutorial on github](#))

Deep Learning



([Machine learning tutorial on github](#))

Deep Learning

One of the main reasons for the rapid progress of ML and Deep Learning concepts in the recent years was the availablity of huge amounts of training data on the internet and the capability of harware (processors, in particular CPU´s, and memory chips) to process and store these data quickly.

Examples (1)

In 1996 IBM´s Deep Blue chess computer beat reigning chess world champion Garry Kasparov

In 2016 Google´s AlphaGo beat 18-time Go world champion Lee Sedol

Examples (2)

Google Duplex: AI-enabled personal assistant making phone calls with humans for you (Demo, published May 9, 2018)

Google Duplex Demo from Google IO 2018 (YouTube 4:11 min)

Examples (3)

Online translation tools (DeepL)

Practical example:

English: „patent in suit“

German translation:

- sometimes „Streitpatent“ or „angefochtenes Patent“
- sometimes „Patent im Anzug“ (*patent wearing a suit*)

Limits of AI

AI is good at (compared to humans):

- Handling huge amounts of data without getting tired
- Solving problems where the goals are understood, but the means aren't

AI is not good at (compared to humans):

- Recognizing a real-world situation in context
- Solving problems where the means are understood, but the goals aren't (being creative)

LegalTech

Taking the FinTech ecosystem as a role model a vibrant community of several hundred start-up companies has developed with the goal to disrupt the legal market with technology (mostly AI-) based solutions.

Pioneer in this field: Richard Susskind (Oxford Univ.), with particular focus on (court-based and alternative) online dispute resolution.

LegalTech

Examples of LegalTech companies:

- IBM Ross
- Leverton (real estate transactions)
- Flightright (compensation for delayed flights)
- DoNotPay (…your lawyer; access to the legal system)
- LitiGate (litigation)