



KENNISFESTIVAL

26/11
Jaarbeurs Utrecht

Waar HR professionals elkaar ontmoeten.

pw.

Een sessie incompany volgen?

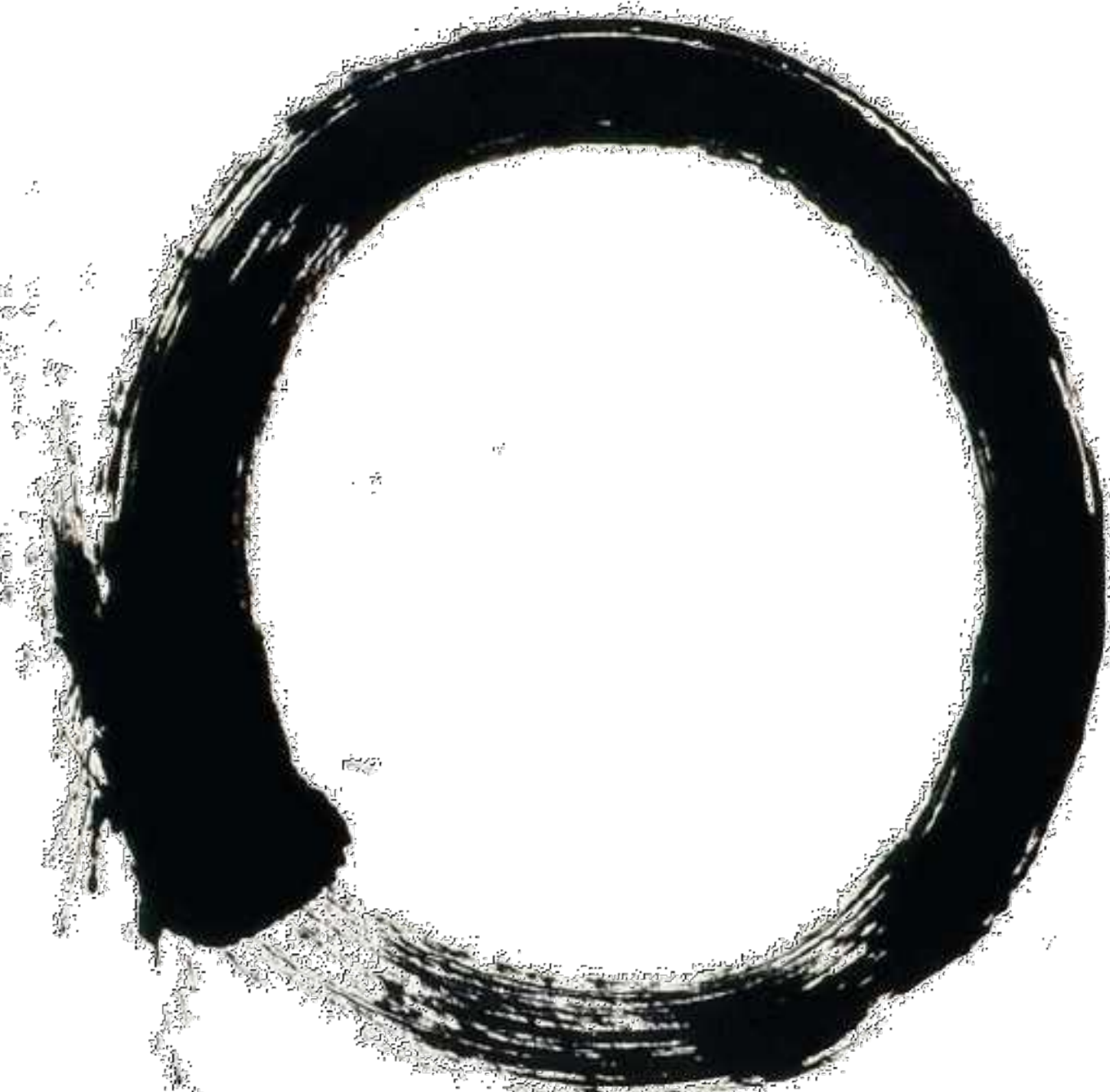
**Wil je samen met collega's een sessie zoals deze organiseren?
Boek dan een incompany workshop of training.**

**Benieuwd naar de mogelijkheden, vraag het Pleuni Maassen:
pleunimaassen@vmnmedia.nl of via 06-12 898 404**

pw.



中庸之道



中庸之道

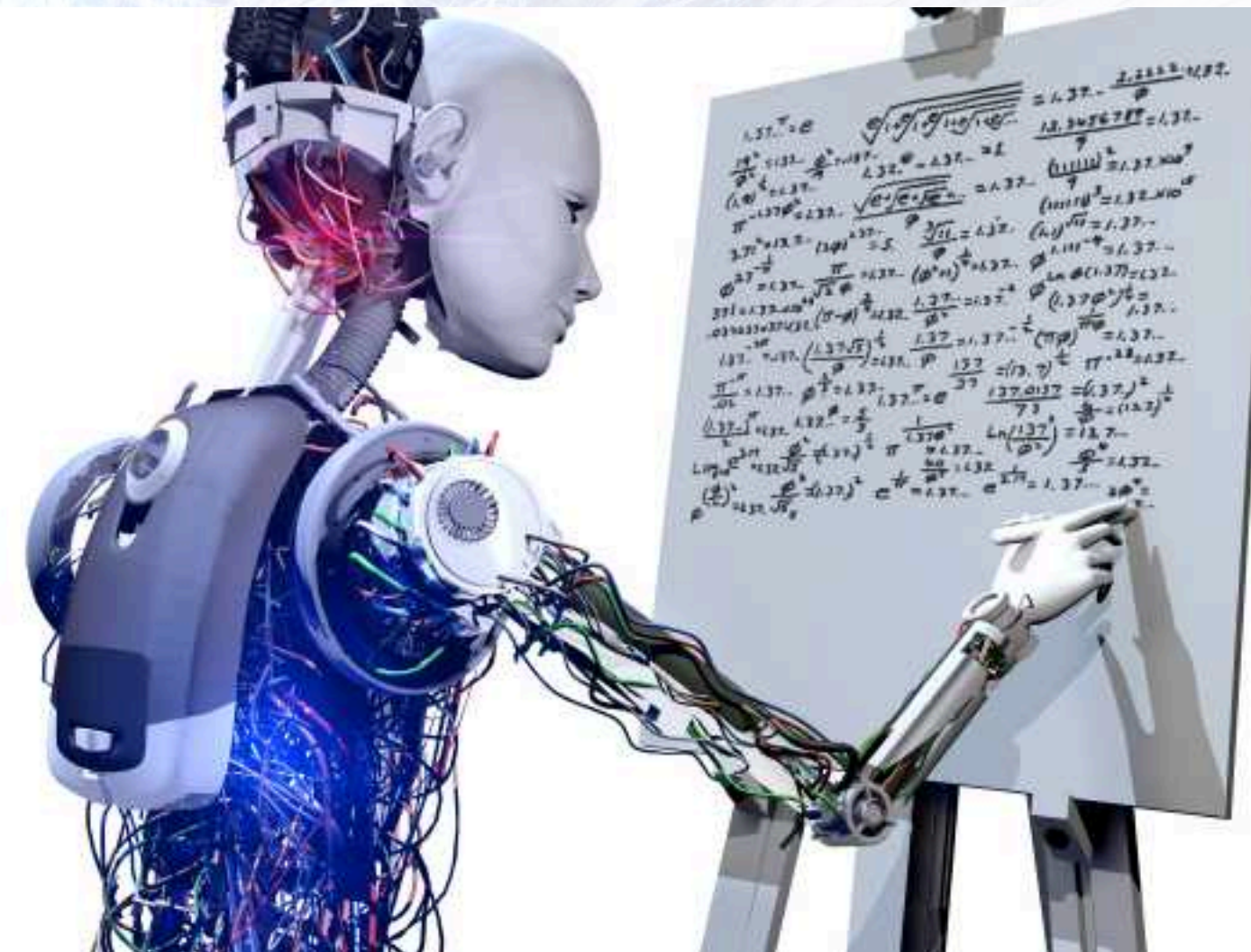
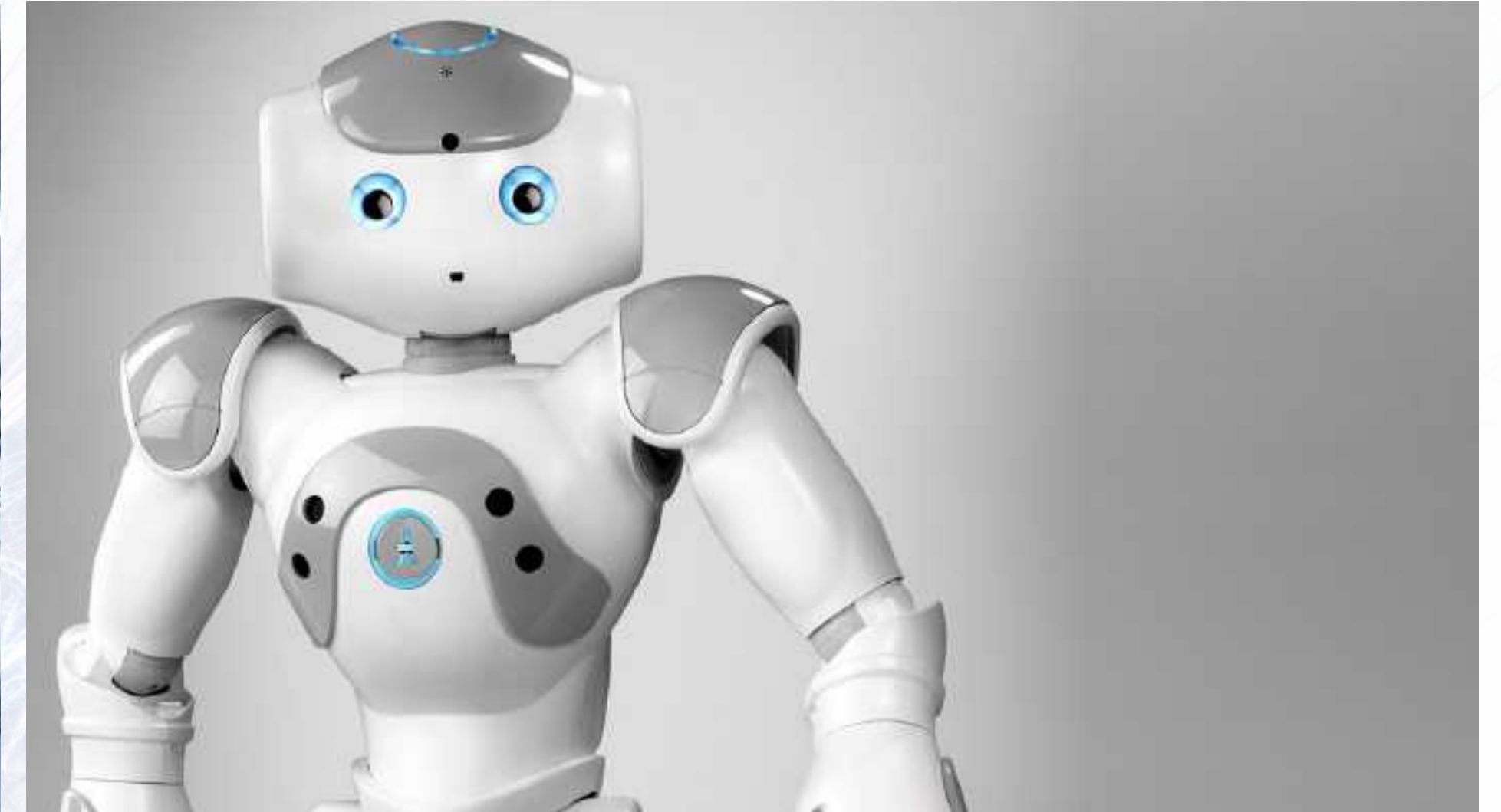
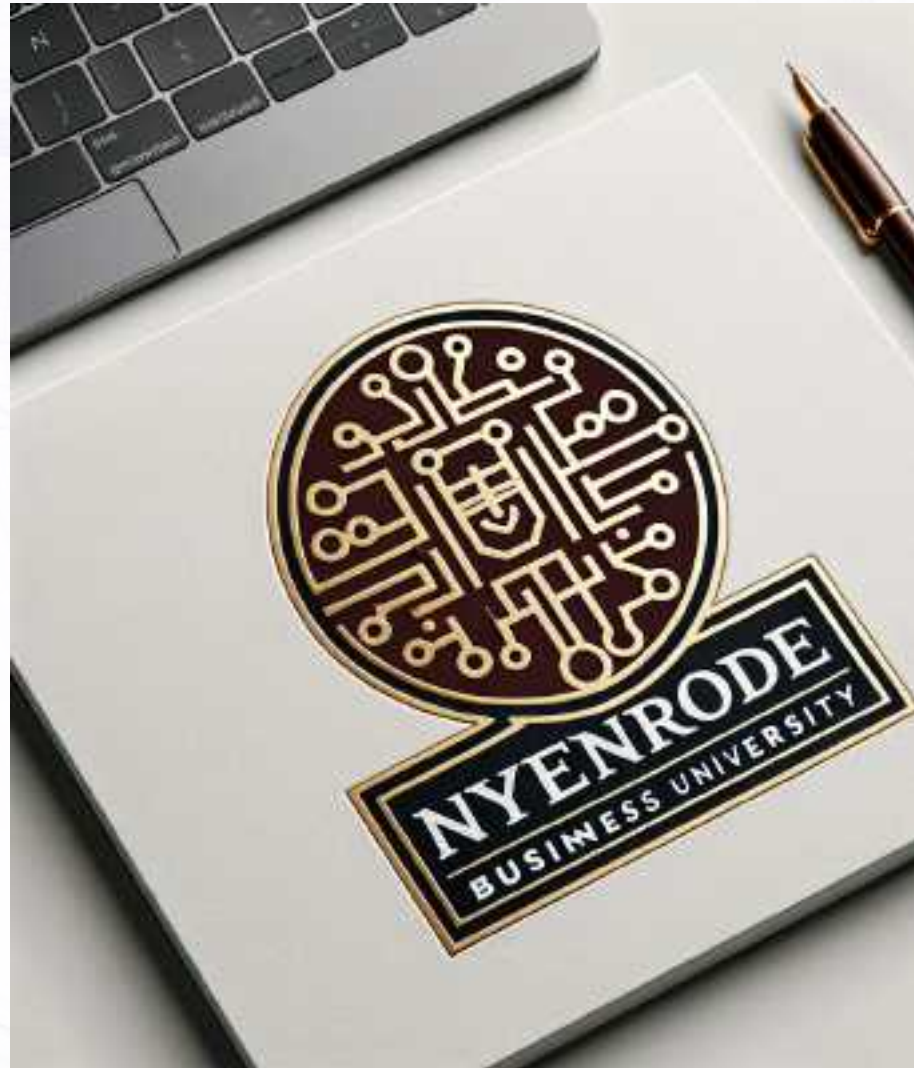
THE ART OF THE ARTIFICIAL AND FUTURE HR

BALANCING DATA, TECHNOLOGY, AND HUMANITY

JAN W VELDSINK MSC
(MSC IN ARTIFICIAL INTELLIGENCE SINCE 2000)

Jan W Veldsink MSC





TECHNOLOGY CHANGES EVERYTHING

1. **Values** Technology can have built-in values.
2. **Behavior** Technology can take over what we previously had to do with laws/force
3. **Brain** Technology can take over what we previously had to do with our brains
4. **Will-power** Technology can take over what we previously had to do with our will-power



AI Adventure



AI Foundational Layer: Machine Learning (ML)

- Machine Learning is the core technology that powers most AI systems today. It enables computers to learn from data patterns and make predictions without being explicitly programmed.
- Supervised Learning: AI learns from labeled data (like image recognition).
- Unsupervised Learning: AI detects patterns in unlabeled data (like customer segmentation).
- Reinforcement Learning: AI learns through trial and error, receiving feedback for actions (like AlphaGo in board games).
- ML is the basis for all current AI applications and will underpin future AI developments.

AI versus AI

Generative uses of AI

Classifying uses of AI

What is genAI?



Generating new data by learning from large data sets and identifying patterns within – capabilities include **text, visual, sound**, etc.

Can **predict likelihood** of a **right response**

Open-ended and creative

Examples:

ChatGPT by OpenAI – for text

StyleGAN¹ by NVIDIA – for visuals

NSynth by Google – for sound



VS

What is “traditional” AI?



Solving specific tasks by making predictions based on previously analyzed sets of data and **predefined rules**

Can **recognize patterns** in data

Goal-oriented and specific

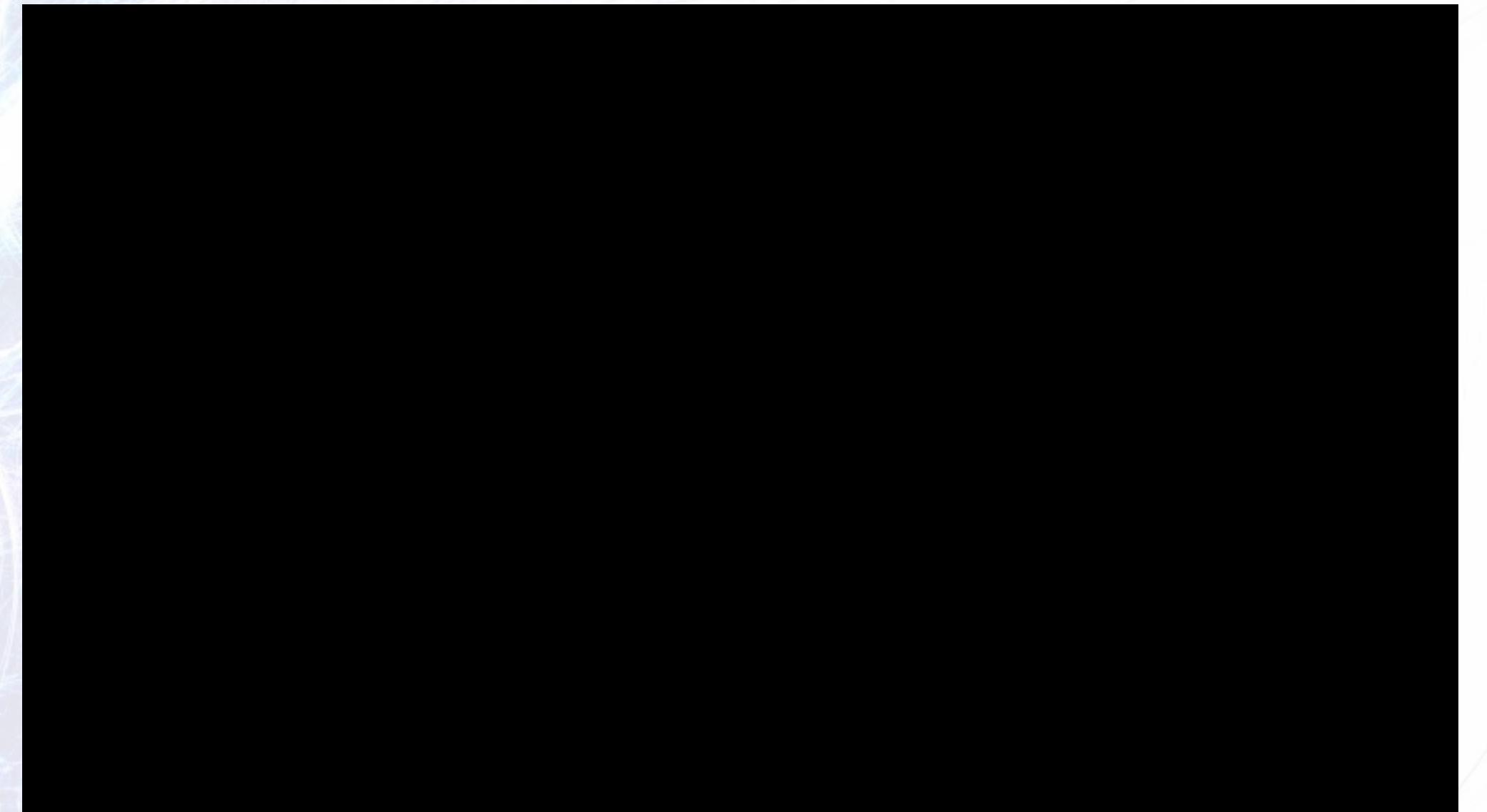
Examples:

Voice assistants

Text recognition / OCR

Recommender systems

Swiss army knife - Metaphor



<https://www.youtube.com/watch?v=O20mKRHYttg>

Machine Learning Accessibility

Harvard
Business
Review

TECHNOLOGY

When AI Becomes an Everyday Technology

by Andrew Moore

JUNE 07, 2019

Summary Save Share Comment 2 Text Size Print \$8.95 Buy Copies



“After years of hype around mysterious neural networks and the PhD researchers who design them, we’re entering an age in which just about anyone can leverage the power of intelligent algorithms to solve the problems that matter to them. Ironically, although breakthroughs get the headlines, it’s accessibility that really changes the world. That’s why, after such an eventful decade, a lack of hype around machine learning may be the most exciting development yet.”

— Andrew Moore, Google

SOURCE:

classifying AI

Harvard
Business
Review

DATA

Getting Value from Machine Learning Isn't About Fancier Algorithms — It's About Making It Easier to Use

by Ben Schreck, Max Kanter, Kalyan Veeramachaneni, Sanjeev Vohra, and Rajendra Prasad

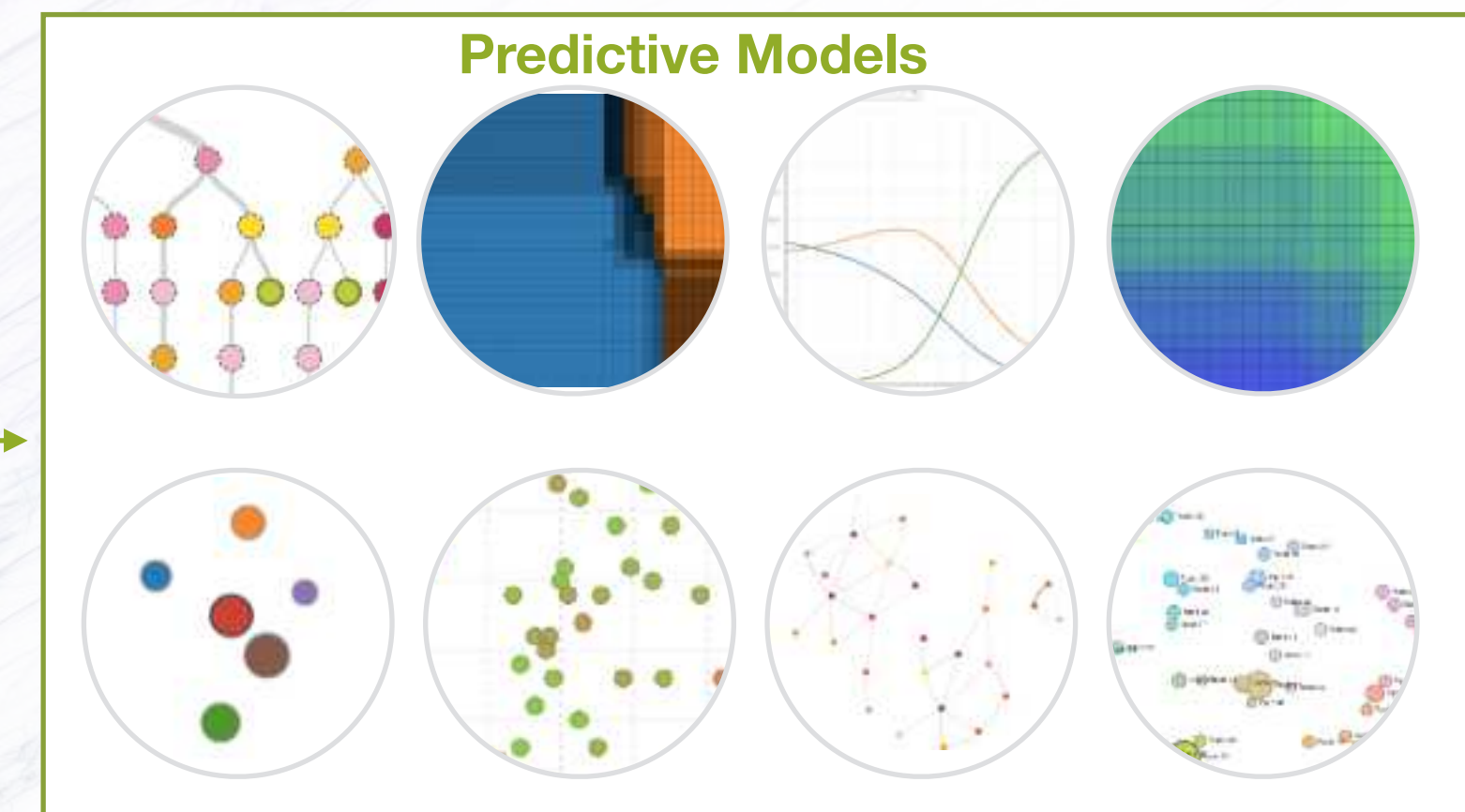
MARCH 2018

SUMMARY VIEW SHARE COMMENT HH TEST RISE PRINT \$8.95 BUY COPIES



JUAN DIAZ FASCIO FOR HBR

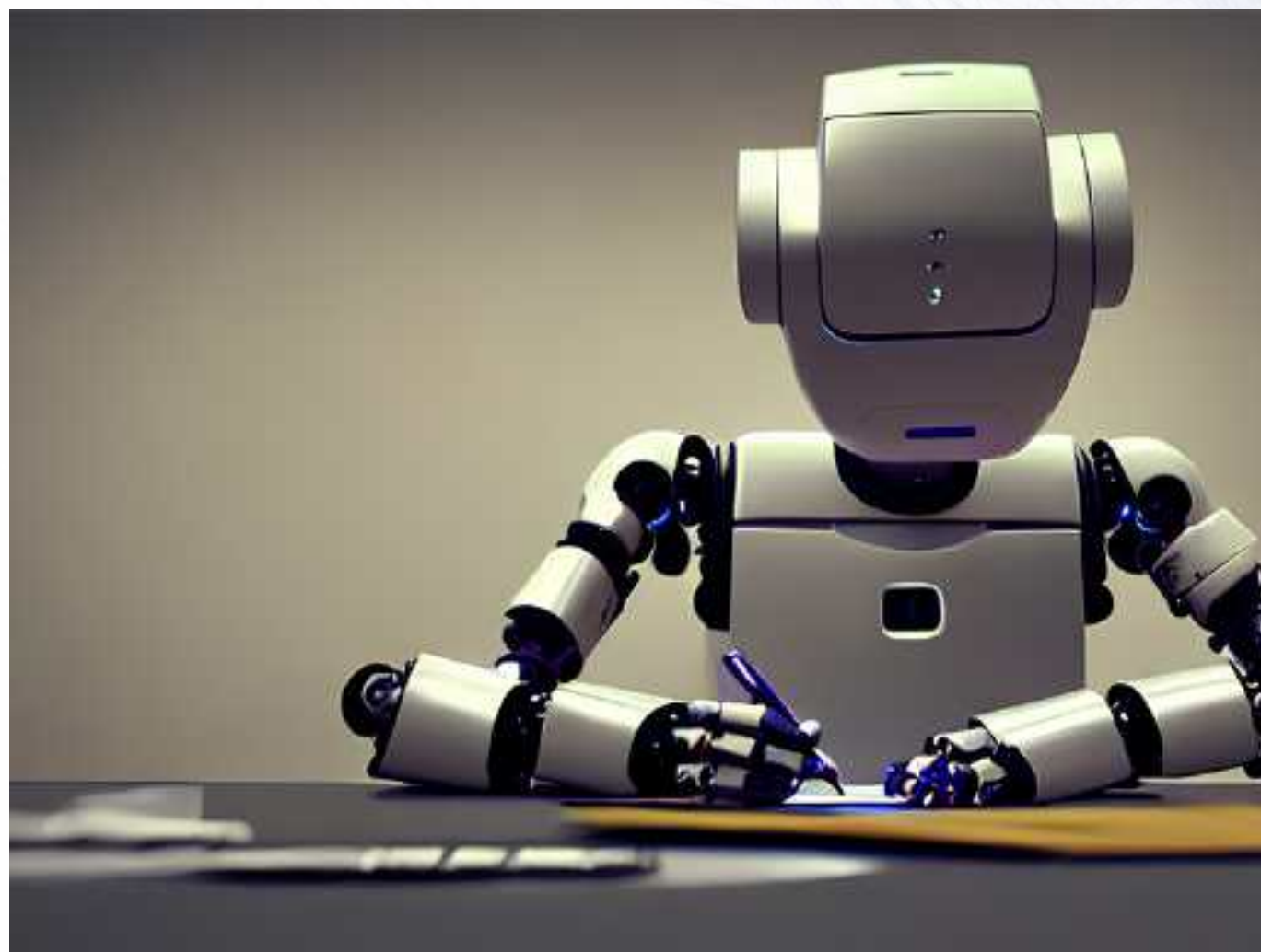
AIRLINE	ORIGIN	DESTINATION	DEPARTURE DELAY	DISTANCE	ARRIVAL DELAY
AS	ANC	SEA	-11	1448,0	-22
AA	LAX	PBI	-8	2330,0	-9
US	SFO	CLT	-2	2296,0	5
AA	LAX	MIA	-5	2342,0	-9
AS	SEA	ANC	-1	1448,0	-21
DL	SFO	MSP	-5	1589	8
NK	LAS	MSP	-6	1299	-17
US	LAX	CLT	14	2125,0	-10
AA	SFO	DFW	-11	1464,0	-13
DL	LAS	ATL	3	1747,0	-15



Finding **patterns** in data that can be used to make inferences...(decisions)

Generating AI

ChatGPT		
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



Write a short article on how photovoltaics work



Photovoltaics, or solar cells, are devices that convert sunlight into electricity. They are made of semiconductor materials, such as silicon, which are highly sensitive to light. When sunlight hits the solar cell, it knocks electrons loose from the atoms in the semiconductor material, creating a flow of electricity.



The solar cell is made up of two layers of semiconductor material, each with a different electrical charge. The top layer is positively charged, while the bottom layer is negatively charged. When sunlight hits the solar cell, it knocks loose electrons from the atoms in the semiconductor material, causing them to flow from the negatively charged layer to the positively charged layer. This flow of electrons creates an electric current, which can be used to power electrical devices.

Solar cells are typically connected together in a panel, and multiple panels can be combined to form a solar array. The solar array is then connected to an inverter, which converts the direct current (DC) electricity produced by the solar cells into alternating current (AC) electricity, which is what is used in homes and businesses.

Photovoltaics are a clean and renewable source of energy, as they produce electricity from sunlight, a natural and abundant resource. They also do not produce any emissions or pollutants, making them an environmentally friendly option for generating electricity. Photovoltaics are becoming increasingly popular as a source of electricity for homes, businesses, and even entire communities.

Programming AI



write a inference engine in clojure



Sure, here's an example of a simple inference engine implemented in Clojure:



```
(def knowledge-base {:rules {"rule1" ["fact1" "fact2"]
                             "rule2" ["fact3"]}}
  :facts {"fact1" true
          "fact2" false
          "fact3" true}})
```

Copy code

```
(defn infer [knowledge-base input-facts]
  (let [rules (:rules knowledge-base)
        facts (:facts knowledge-base)]
    (loop [result []
           remaining-rules rules]
      (if (empty? remaining-rules)
          result
          (let [[rule-name rule-premise] (first remaining-rules)
                remaining-rules (rest remaining-rules)]
            (if (every? #(facts %) rule-premise)
                (recur (conj result rule-name) remaining-rules)
                (recur result remaining-rules)))))))
```

```
(infer knowledge-base ["fact1" "fact3"])
;; Returns: ["rule1"]
```

This code defines a simple knowledge base as a map with two keys: ``:rules`` and ``:facts``. The ``:rules`` key contains a map of rule names to lists of facts that must be true for the rule to be triggered. The ``:facts`` key contains a map of fact names to Boolean values indicating whether the fact is true or false.

The ``infer`` function takes the knowledge base and a list of input facts as its arguments. It uses a ``loop`` construct to iterate through the rules in the knowledge base, and for each rule, it checks if all the facts listed in the rule's premise are true using the ``every?`` function. If all the facts are true, it adds the rule to the list of results. Finally, it returns the list of rules that were triggered by the input facts.

This is a very simple example and can be further developed and expanded as per the requirement.



ChatGPT is a good coder, but not a good software engineer, or developer.

Art Made With Artificial Intelligence Wins at State Fair



Théâtre D'opéra Spatial by Jason Allen

SOMEWHAT STRICTLY CONFIDENTIAL

Poetry to Visual-Art



Ogen wijd gesloten

Jaren hebben open ogen
Mij het zicht ontnomen

Daarom spreek ik met je
In deze diepe nacht

Met mijn ogen gesloten
Spreek zacht de woorden

Zie en ken je beter zo
Om ogen te openen

En je opnieuw te zien
En opnieuw
En opnieuw
En opnieuw

©Jan Veldsink 2019



Two prompts

The prettiest person in the world

The ugliest person in the world

The outcome

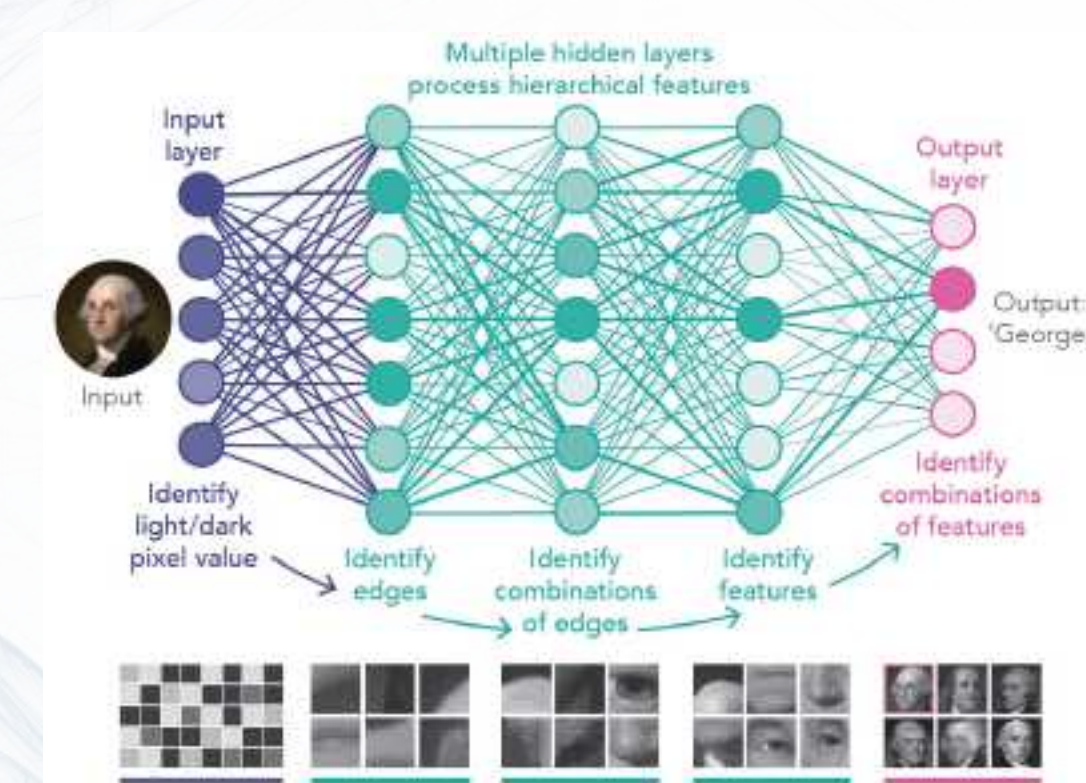
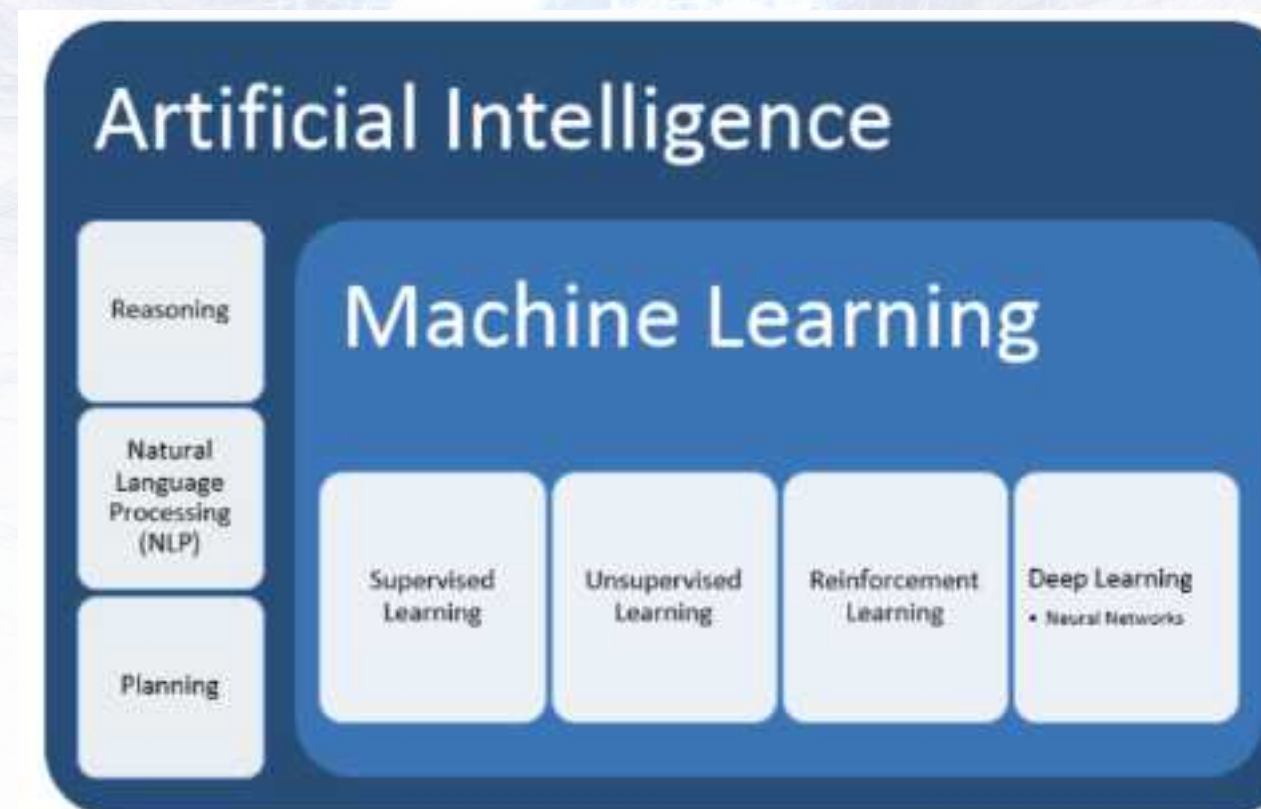
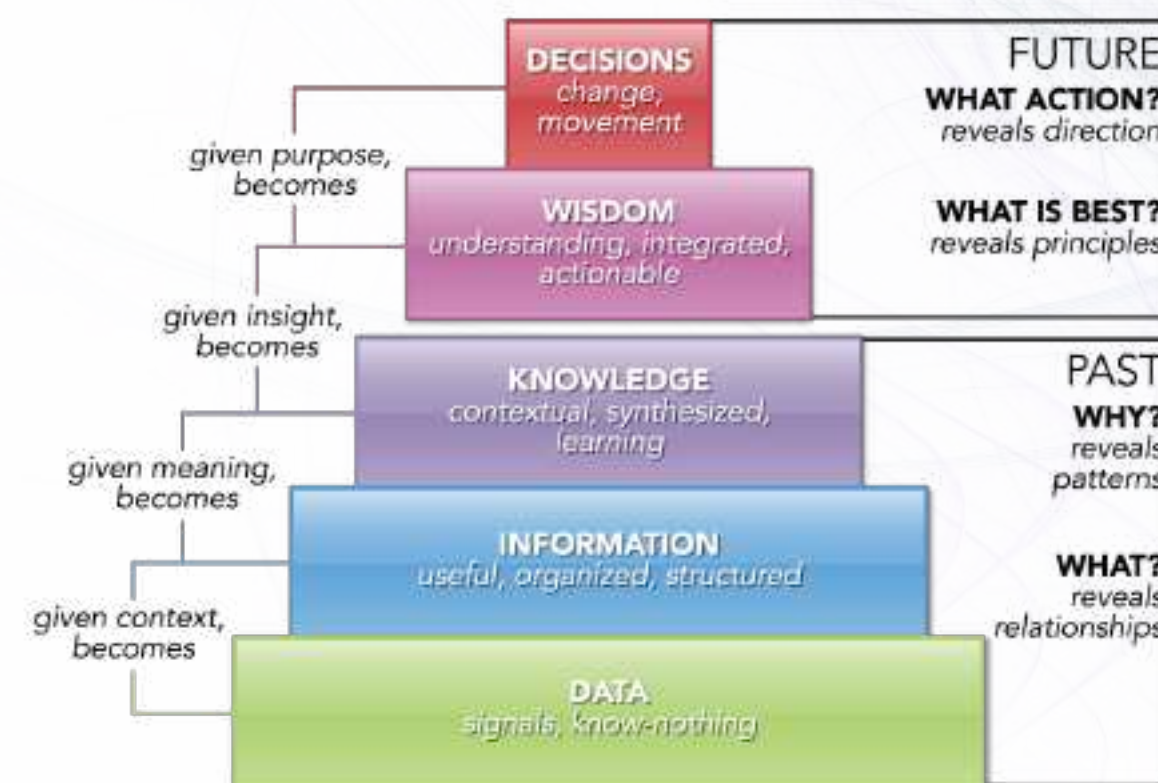
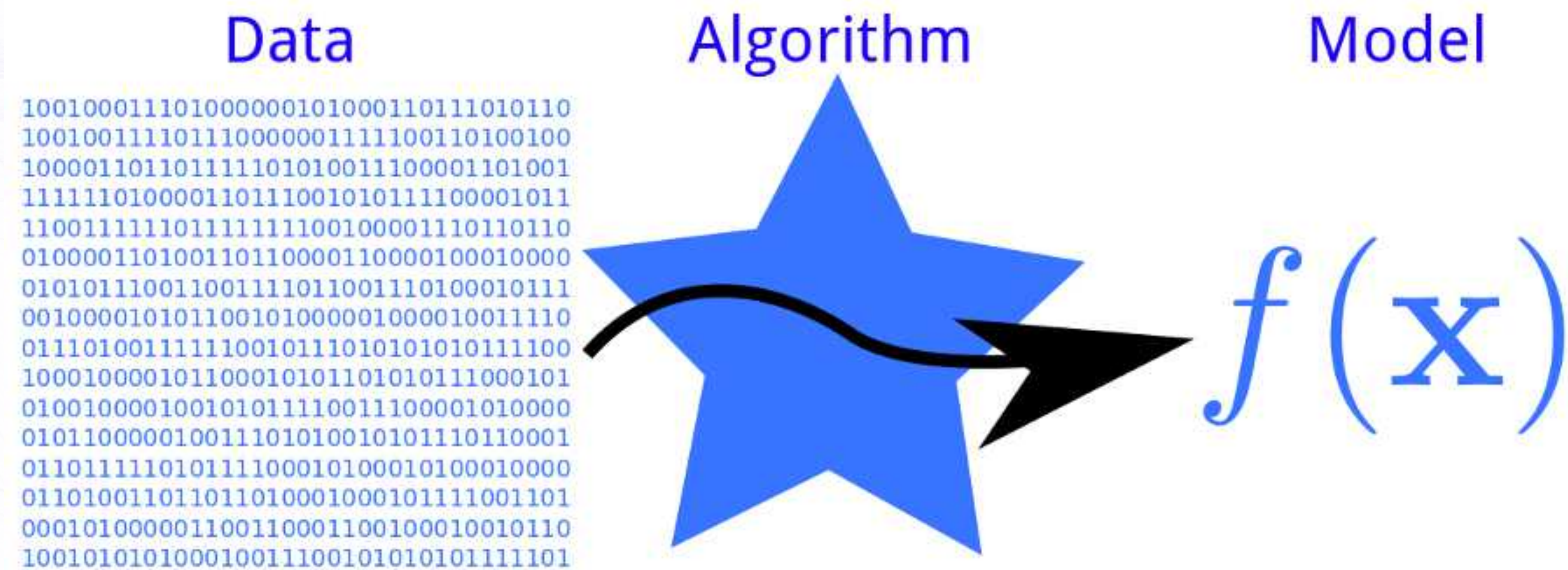
The prettiest person in the world



The ugliest person in the world

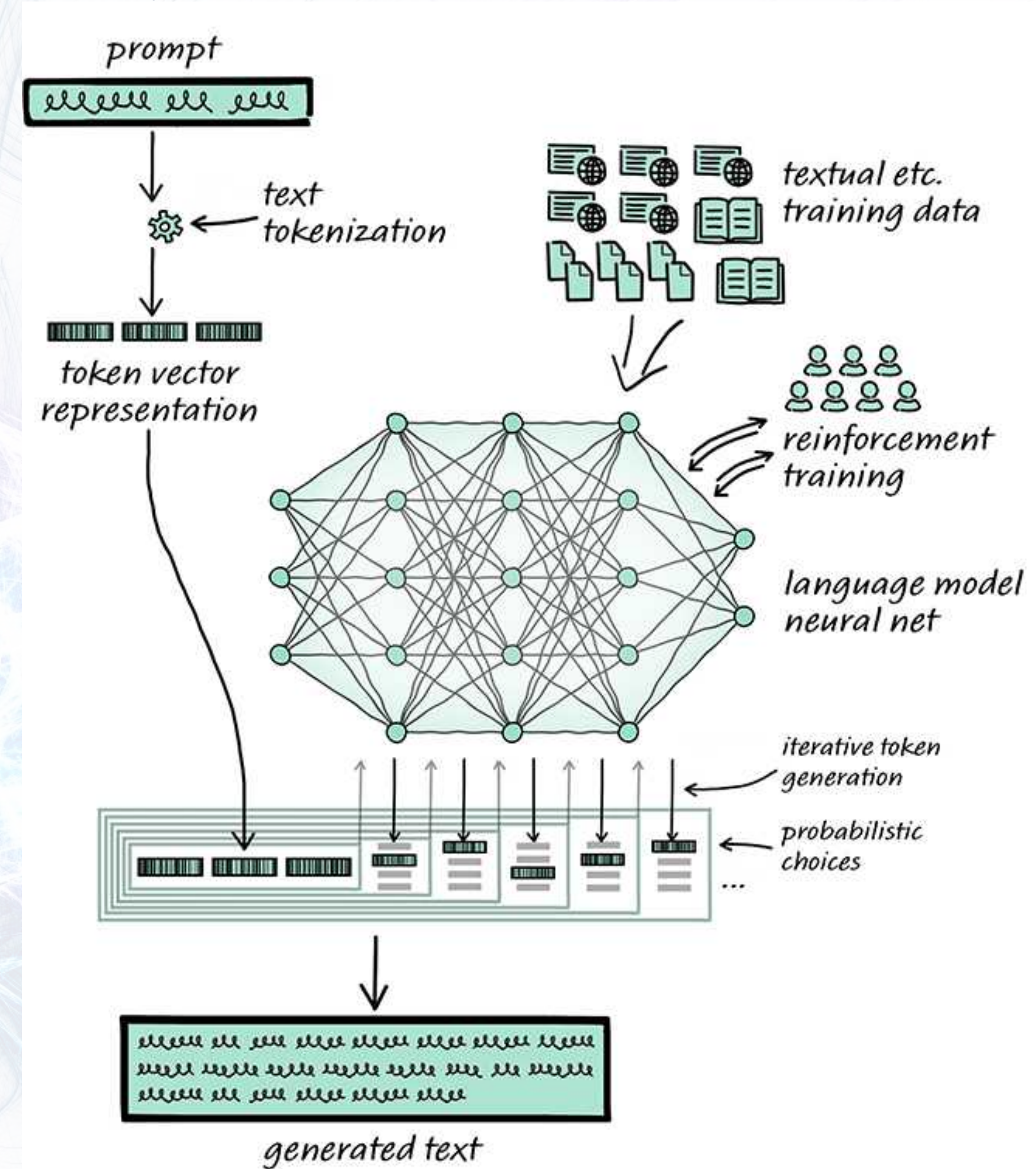


Data Contains the Knowledge!



Chat GPT

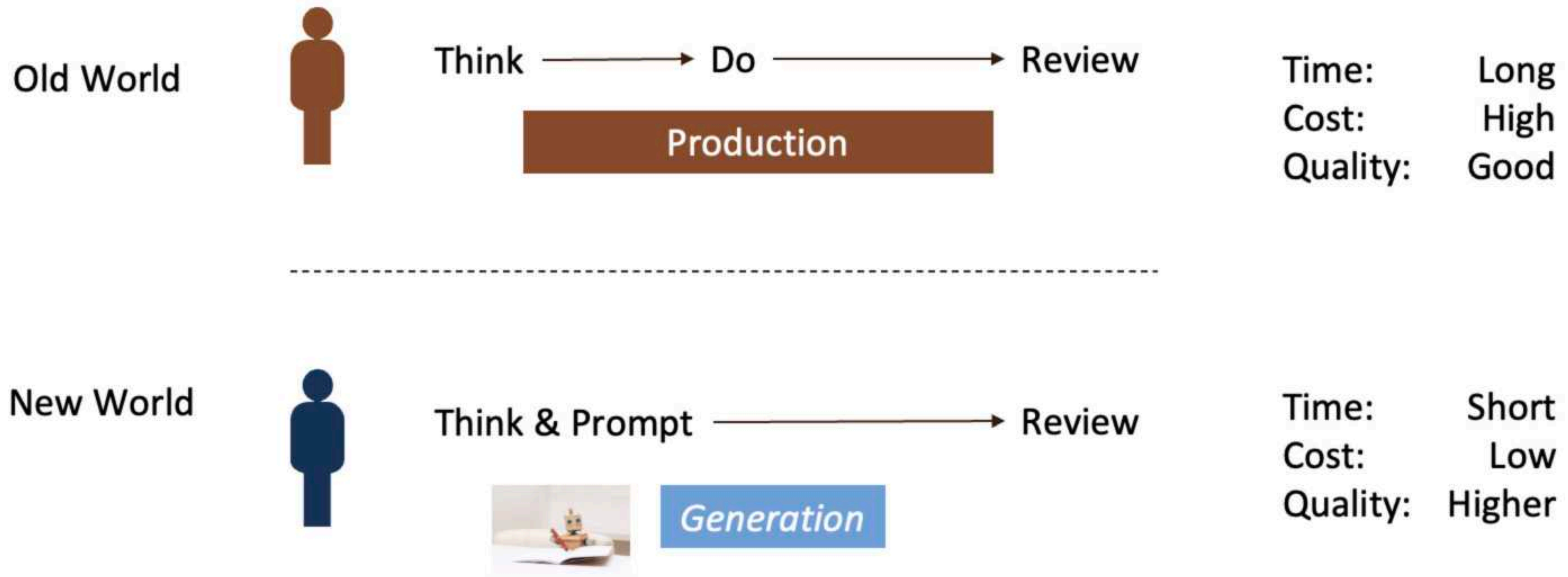
- Training data
 - Large language Neural Net
 - Token and Vector generation
- Prompt
 - Tokens
 - Token Vector Representation
- Result: *Probabilistic generated text*



Prompt Engineering

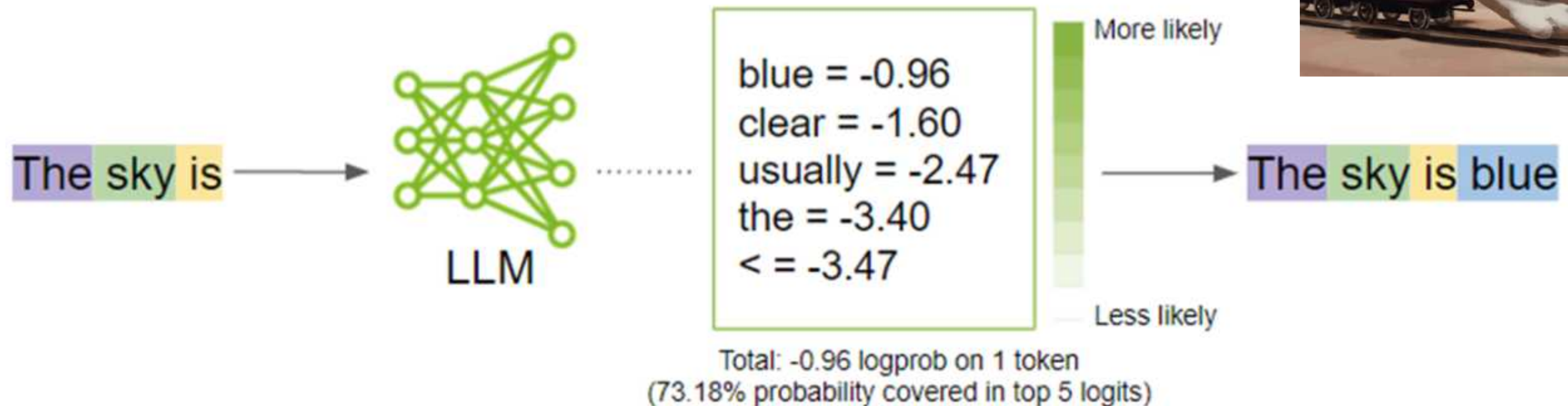
Prompt Engineering - to generate any content

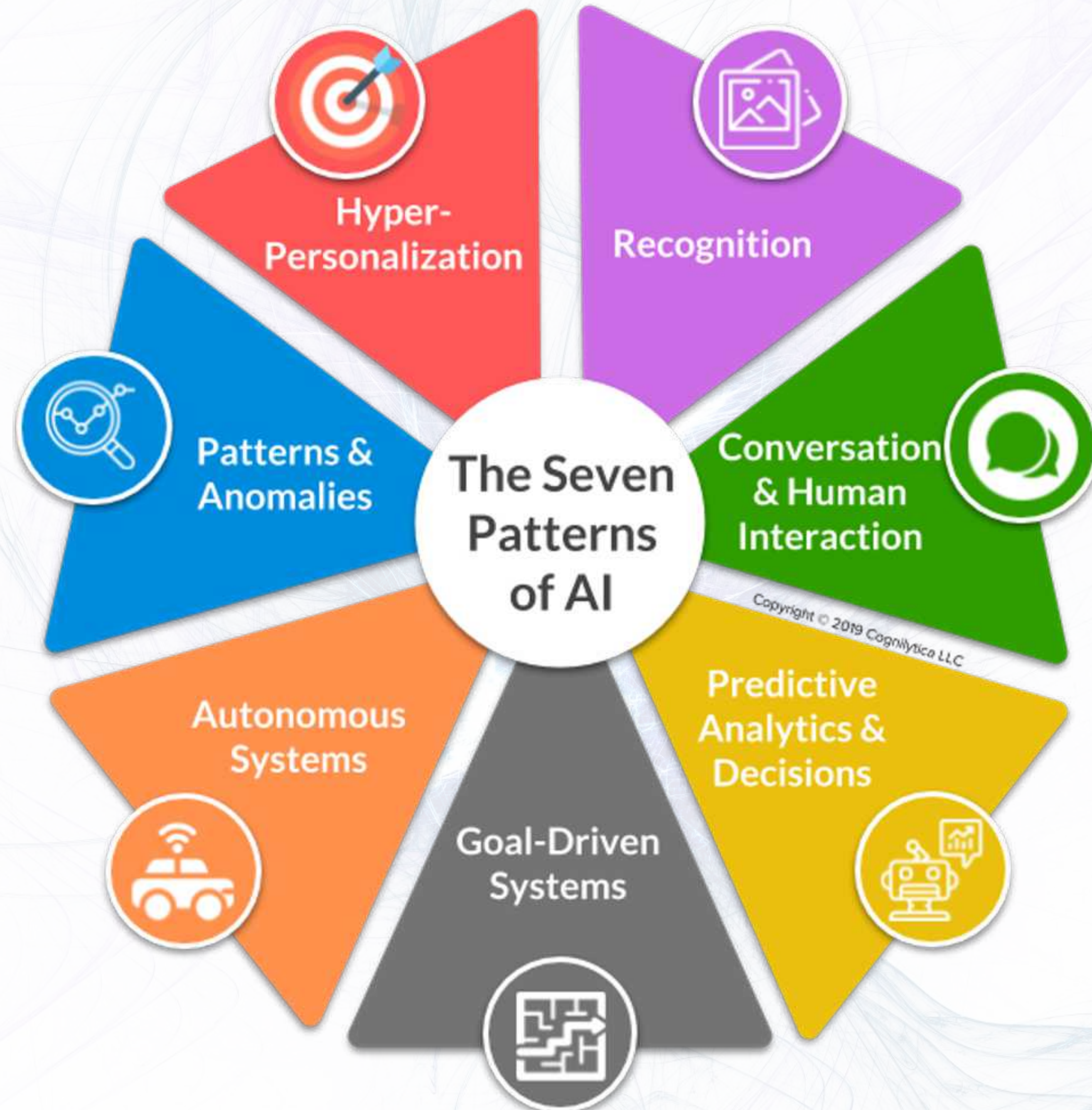
"The specificity of the input leads to the desirability of the output"



ChatGPT / LLM & How does it create?

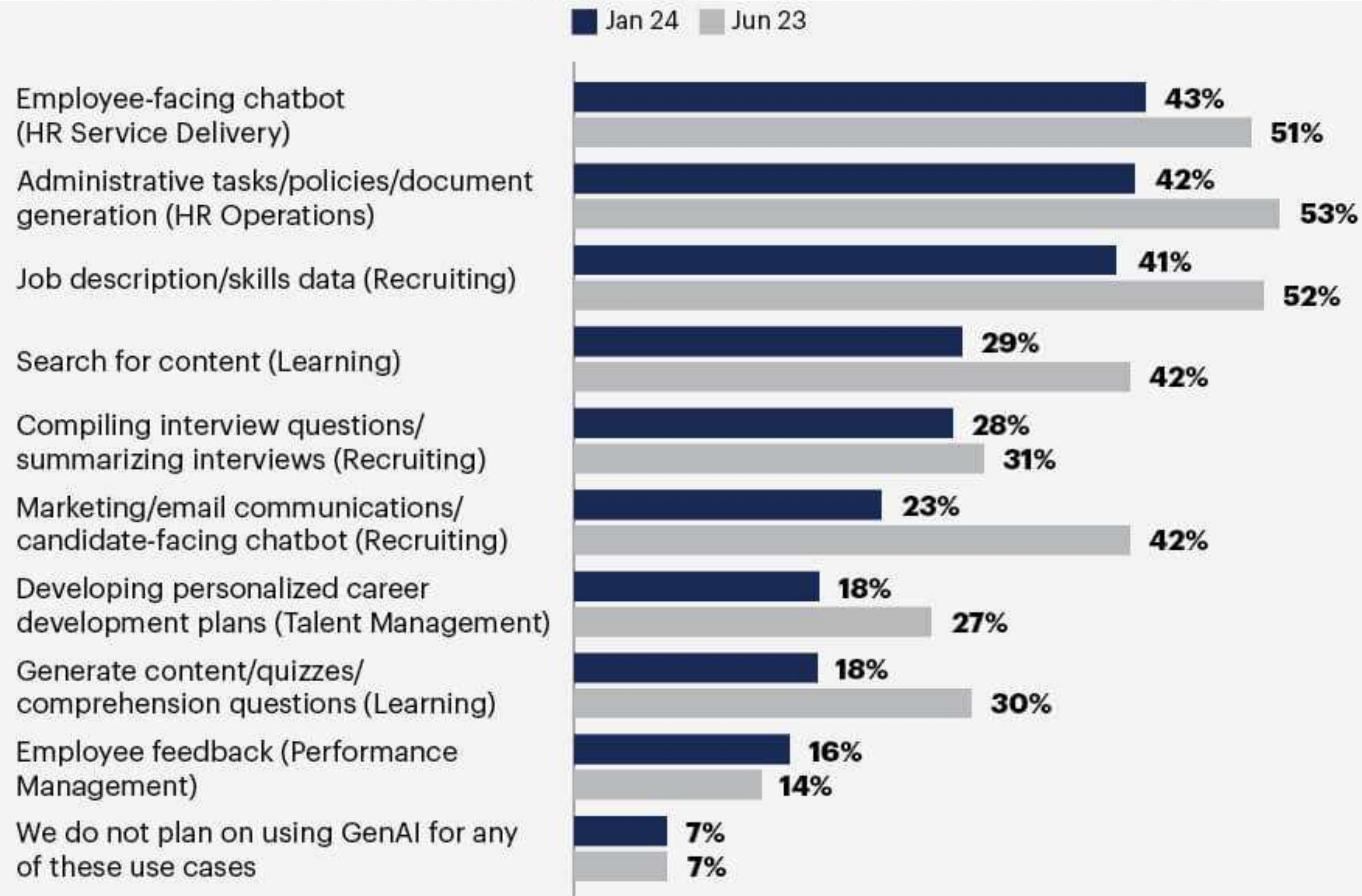
Statistical approach to text generation,
enhanced by training and Reinforcement Learning with Human
Feedback







HR Use cases!



Source: Gartner
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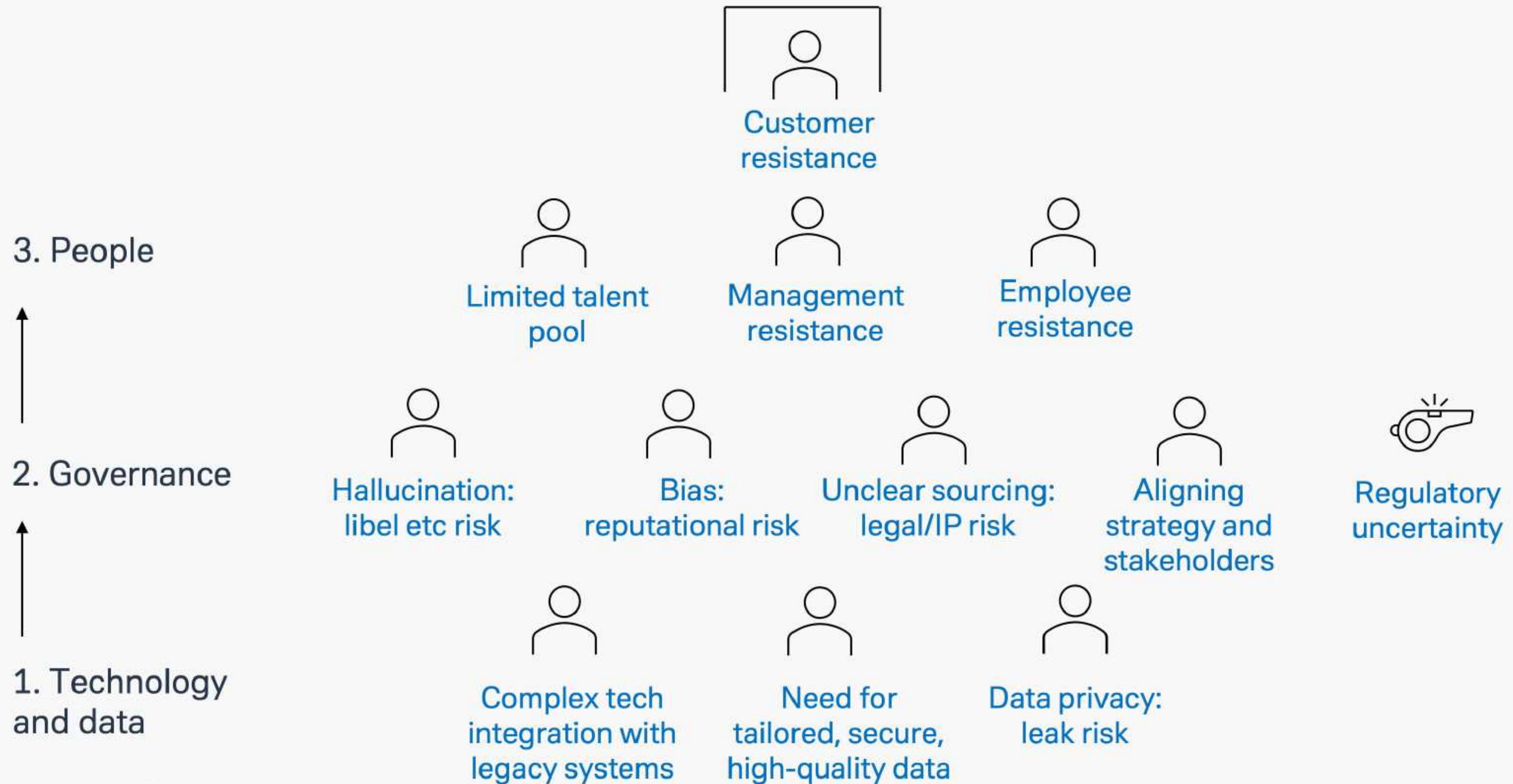
AI Adoption in HR



Source: Gartner
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Three obstacles in a corporate





Definition of Wisdom

- **Applied Knowledge:** Wisdom is the application of deeper and experiential knowledge to make informed and judicious decisions. It involves the ability to synthesize knowledge, experience, and insights into actions that are ethical and effective in complex situations.
- **Contextual and Practical:** Unlike knowledge, which can be theoretical, wisdom is deeply contextual and practical. It is about knowing what is important, why it is important, and how to act on it in a given context.
- **Humanistic Approach:** Wisdom often entails a humanistic approach that considers not only the logical and rational aspects but also the human, moral, and ethical dimensions of decision making.
- **Tacit Nature:** It is primarily tacit, meaning it is deeply embedded in personal experiences and difficult to formalize or communicate explicitly.
- **Transformative:** Wisdom has a transformative nature, being able to redefine problems and solutions in innovative ways that are holistic and sustainable.

AI Technology Assessment

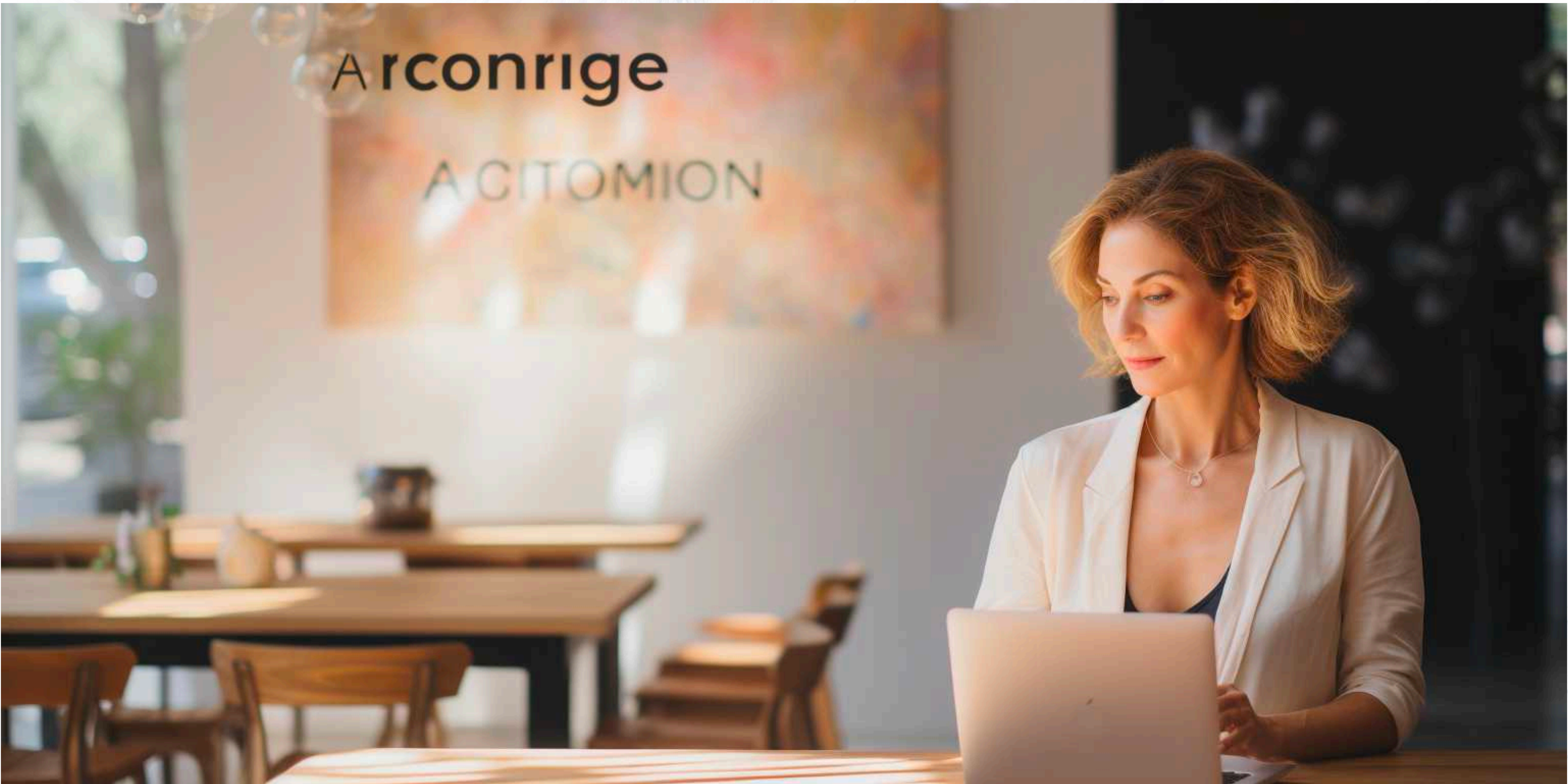
	Core Questions
<i>Viable</i>	Are we using the right AI paradigm to solve the problem?
<i>Valuable</i>	Does applying AI add value to customers / users / society?
<i>Vital</i>	How critical is AI for achieving the result?
<i>Ethical</i>	Does the AI implementation pass the Moral impact assessment?

Derived from Stanford: New Technology assessment, Adapted by Jan W Veldsink Msc 2022

Workshop

Arconrige

A CITOMION



AI Ideation Canvas

THE AI IDEATION CANVAS

The Idea:

Created by:

Date:

Version:

The Question



Clearly articulate the central question or problem your AI initiative aims to address. Ensure the question is specific, actionable, and aligned with your organization's objective to achieve wisdom, guiding the scope and direction of your project."

Wisdom



Define the type of wisdom your organization aims to achieve with its AI initiatives. Focus on how AI can enhance ethical decision-making, promote long-term sustainability, and augment human capabilities to create a positive impact on society and the organization.

Actors and Factors



Identify the actors and external/internal factors that influence your AI initiative. Consider how these actors and factors impact the development, implementation, and outcomes of your AI systems, ensuring you account for their roles, interests, and potential effects on the project's success.

Results



Define specific, measurable results that demonstrate how the AI system will achieve the intended wisdom, enhance decision-making, and create positive impacts for the organization and society.

Assessment



Make considerations to establish the Viability of your idea!

Viable

What AI to use and is the AI technology available and does it fit the problem?

Valuable

How is the AI adding value to customer / organization / employee / society?

Vital

Why is using AI vital?

Ethical

What are your ethical considerations?

Knowledge



Specify the key sources and types of knowledge that will inform your AI initiatives. Emphasize both tacit and explicit knowledge, and outline processes for effectively integrating diverse knowledge streams to support informed and adaptive decision-making.



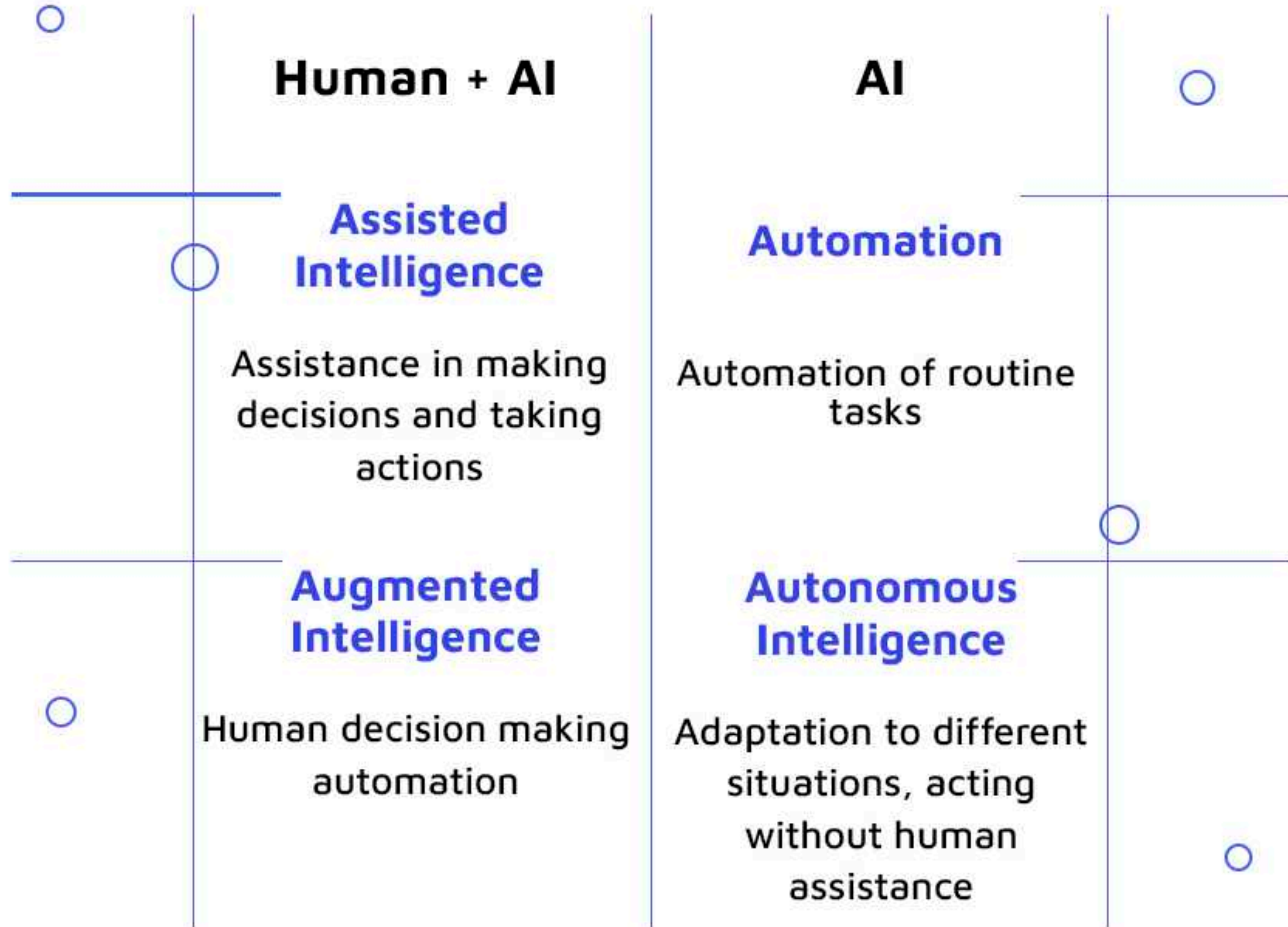
AI Ideation Canvas van Jan W Veldsink MSc is in licentie gegeven volgens een Creative Commons Naamsvermelding-GelijkDelen 4.0 Internationaal-licentie.

Gebaseerd op een werk op www.grio.nl/Alcanvas.

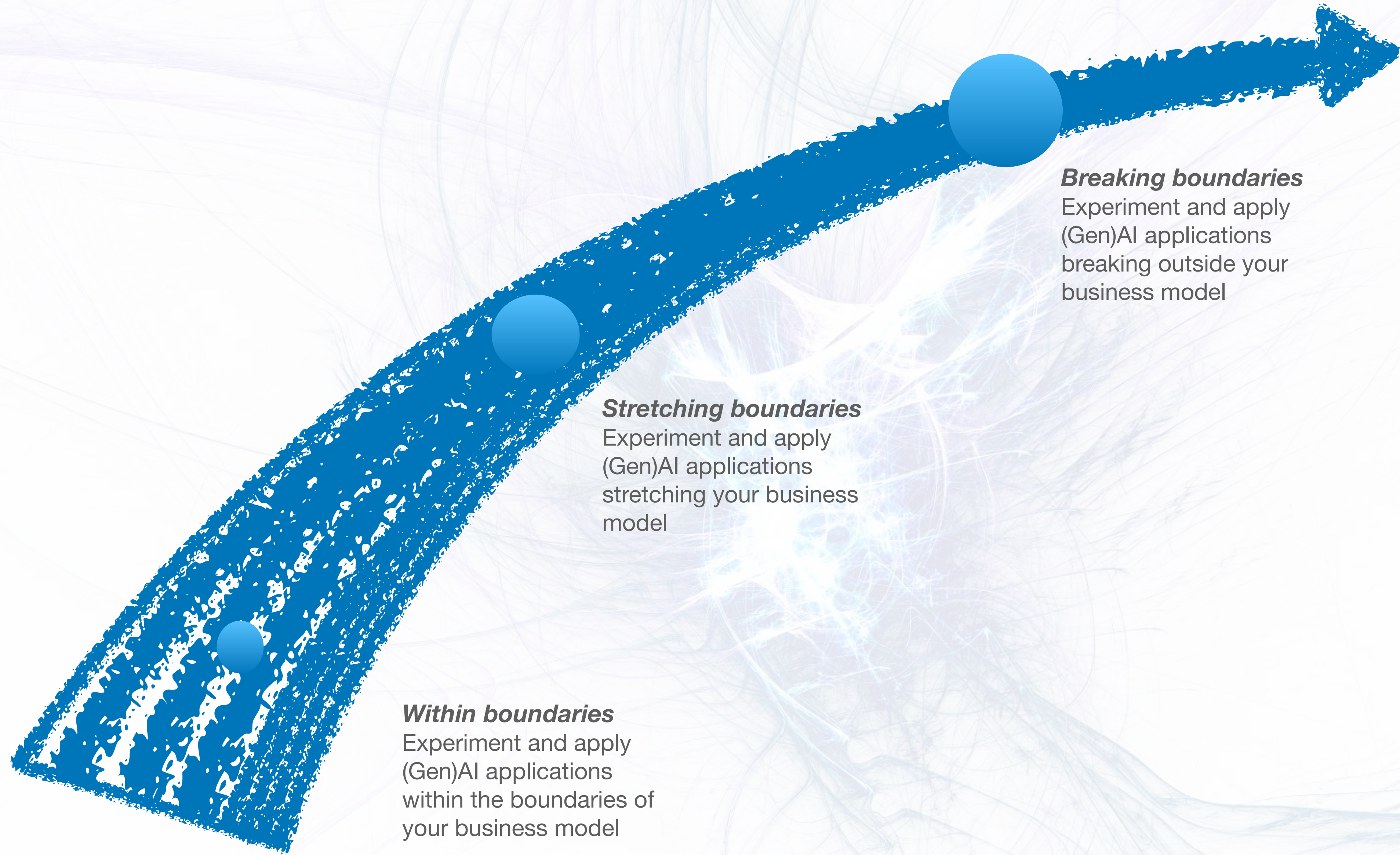
AI Ideation Canvas

- **AI Ideation Canvas** is meant to start off the discussions and ideation on AI projects. Starting with the question data-centric approach.
- State the **Wisdom**, what do you want to achieve!
 - What **Question** do you want to answer?
 - What **Actors and factors** play a role in solving the question?
 - What **Knowledge** are you intending to use or foresee to be used?
 - What are your **Projected results**, how can you value / measure the outcome?
- Make a clear **assessment** on the Viability of the AI project including Ethical consideration?





Levels of applying AI



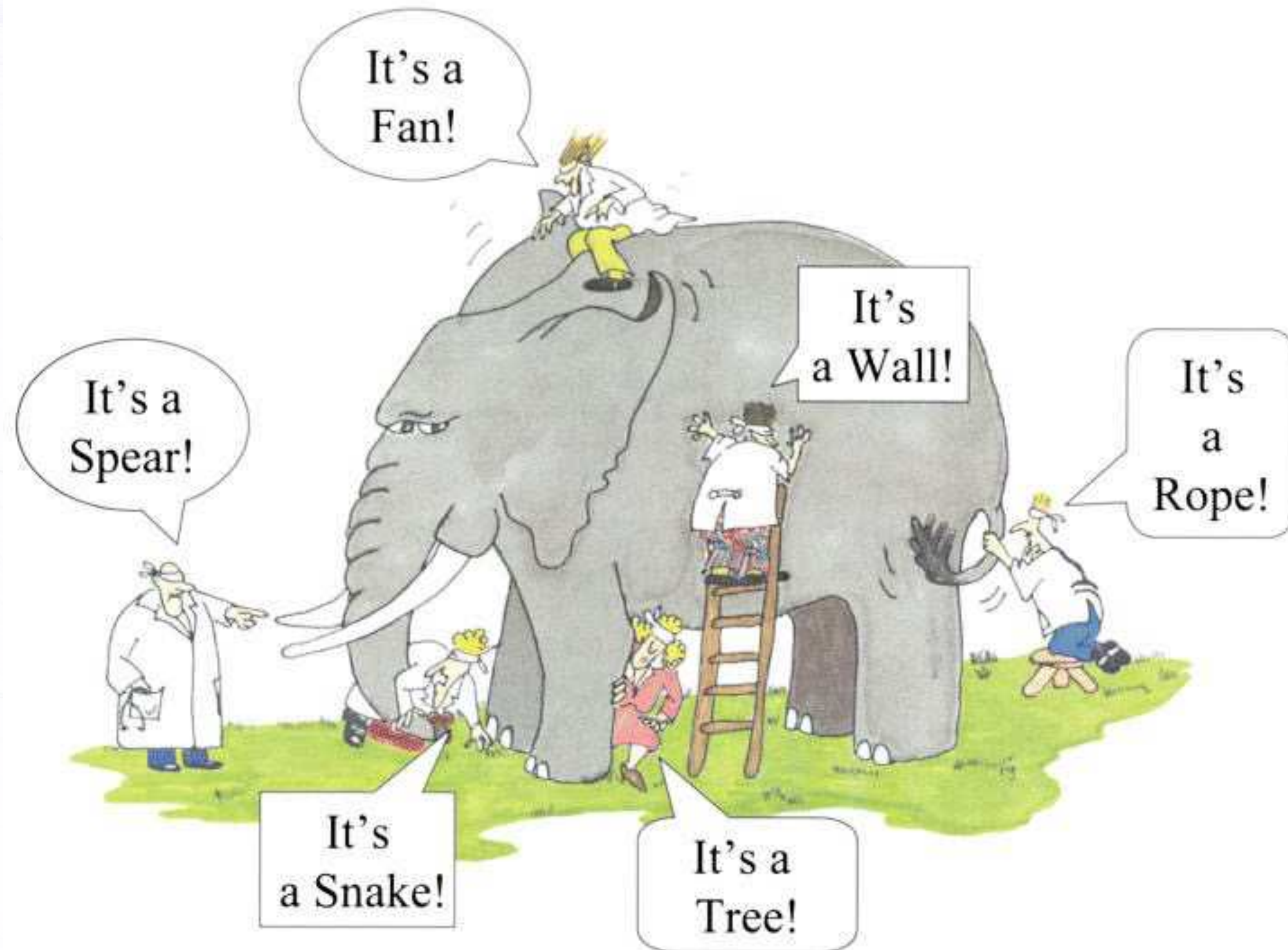
What competences do we need?

- Language
- Systems thinking
- Conceptual thinking
- Problem decomposition
- Understanding and valuing the outcome of models
- Reality checks
- Critical thinking



Organize multiple perspectives

Having a real open mind for other ideas is a hard task

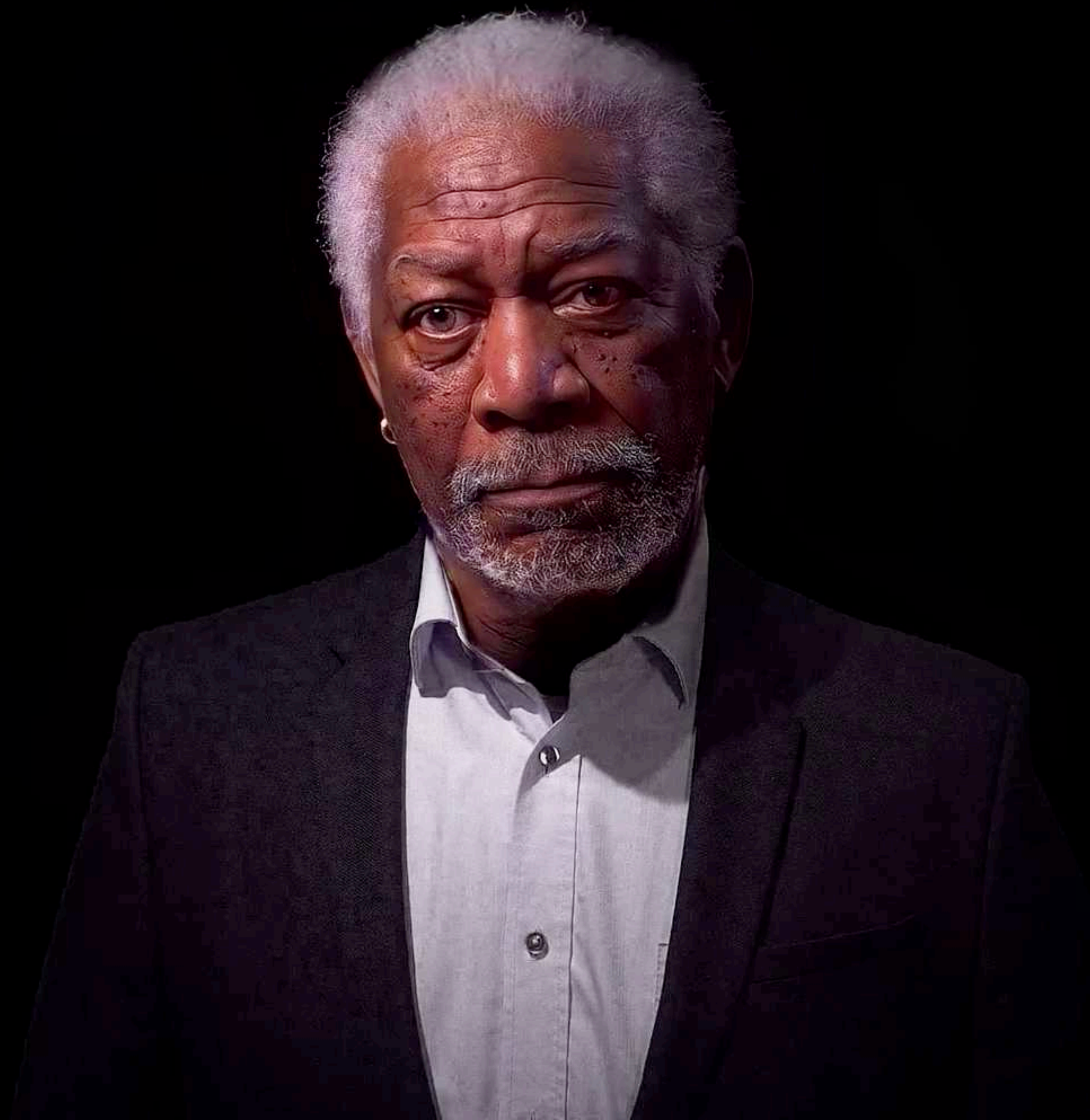


Logic

PENGUINS ARE BLACK AND WHITE.
SOME OLD TV SHOWS ARE BLACK AND WHITE.
THEREFORE, SOME PENGUINS ARE OLD TV SHOWS.

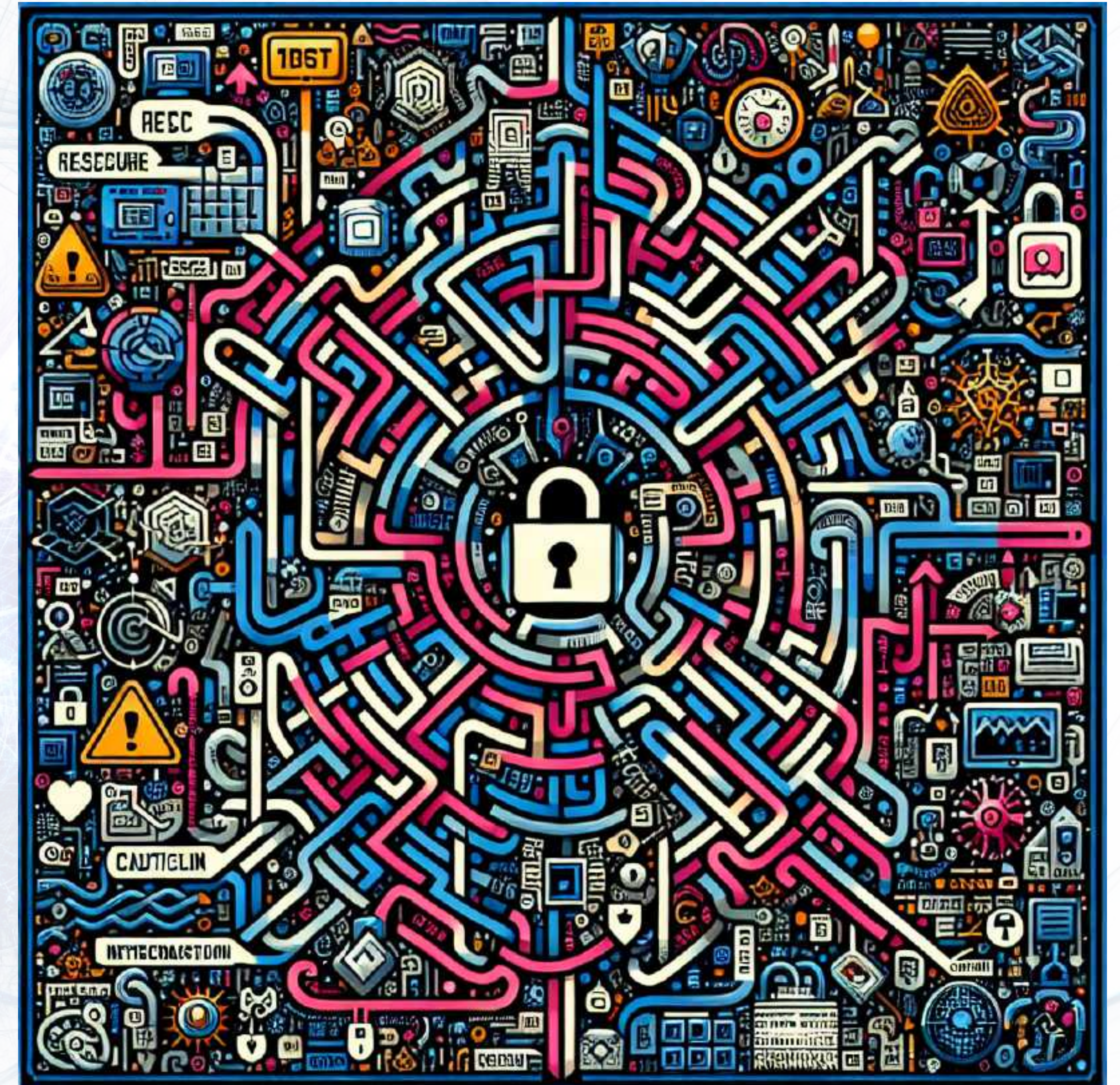


**Logic: another thing that
penguins aren't very good at.**

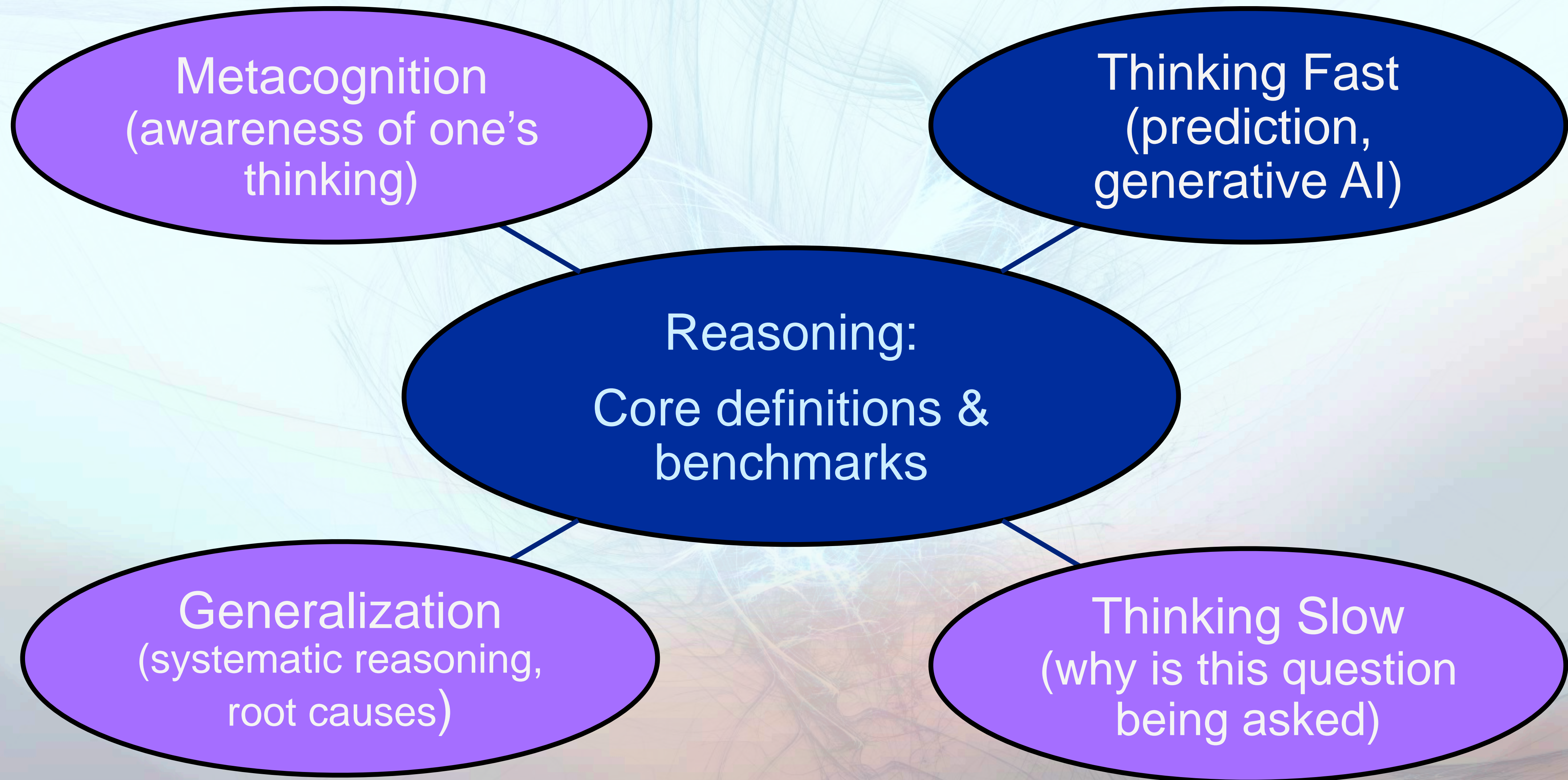


Why Is Cybersecurity So Hard?

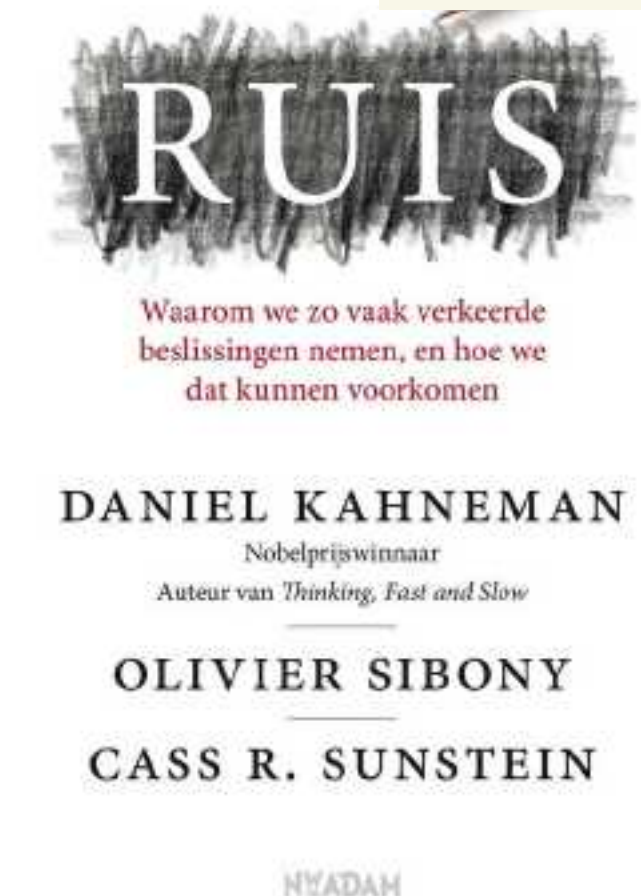
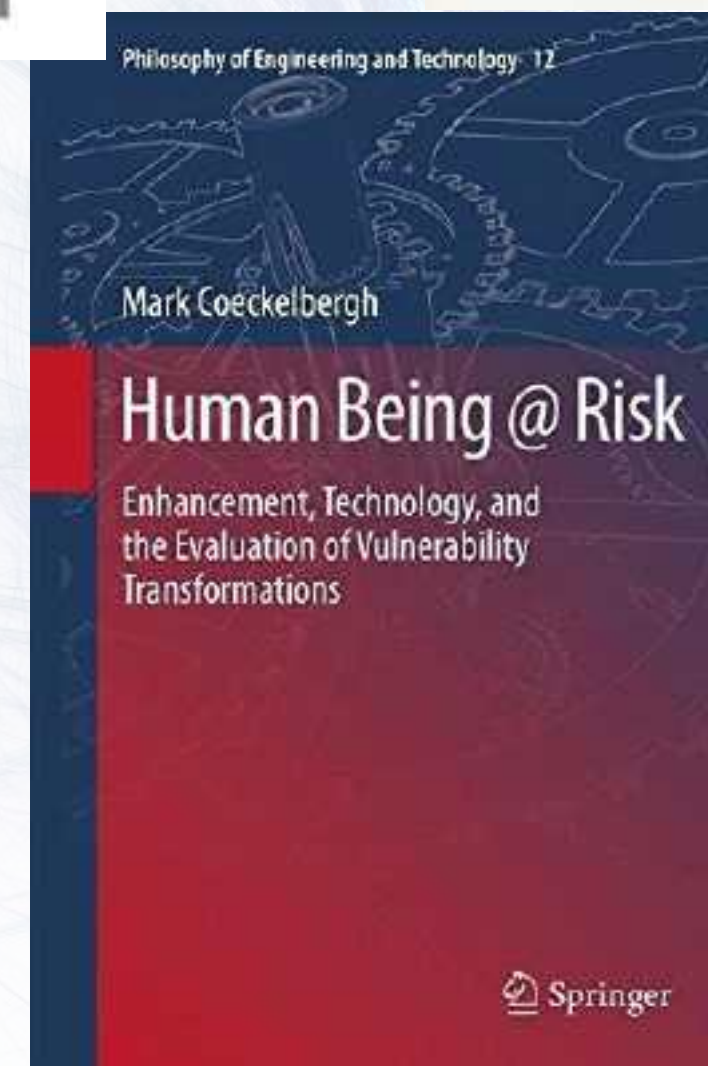
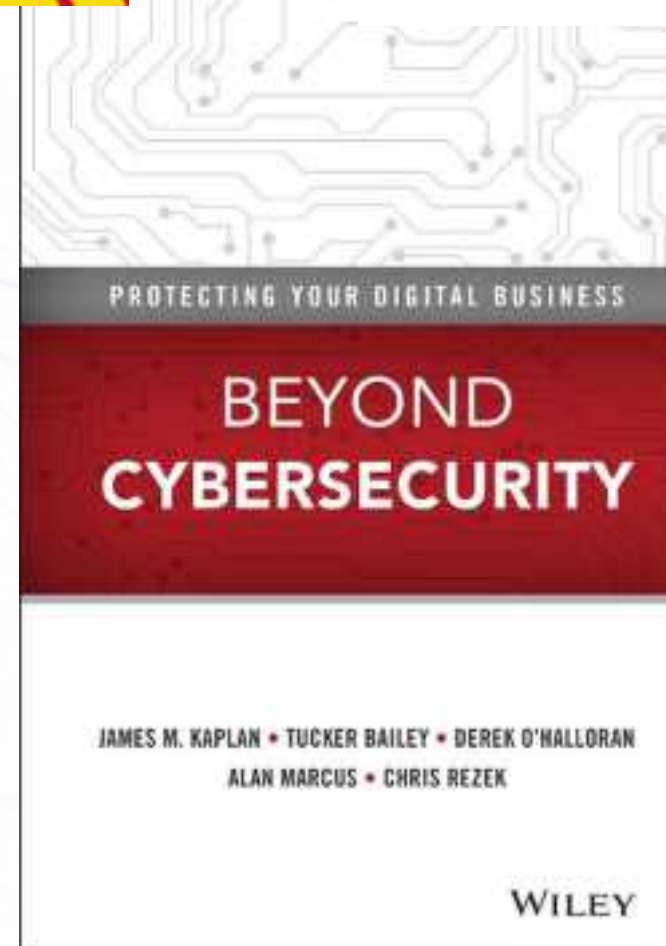
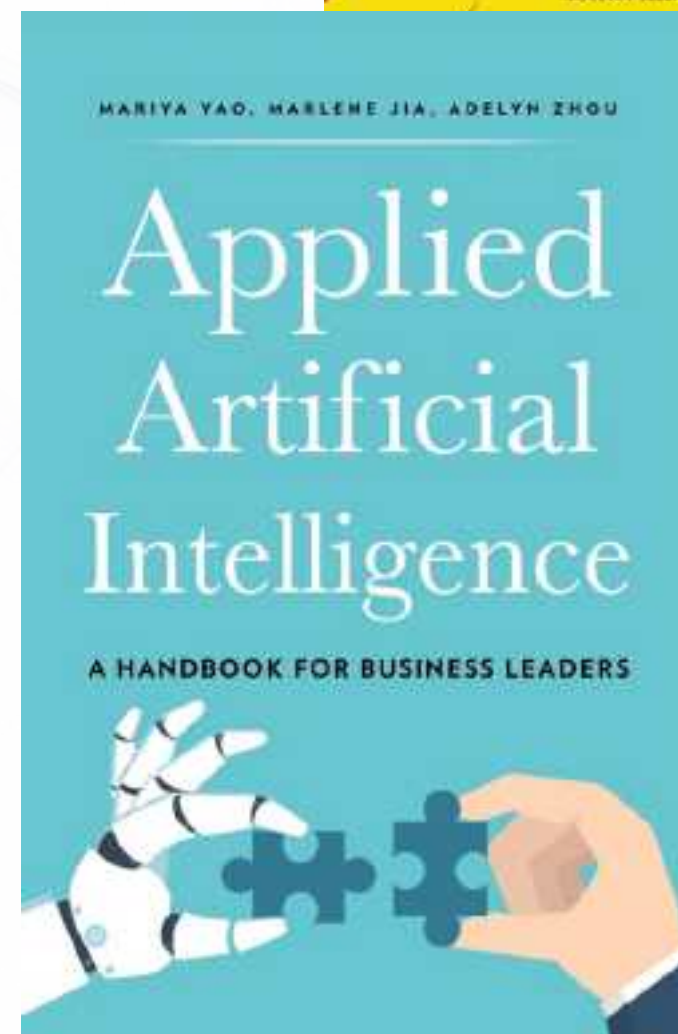
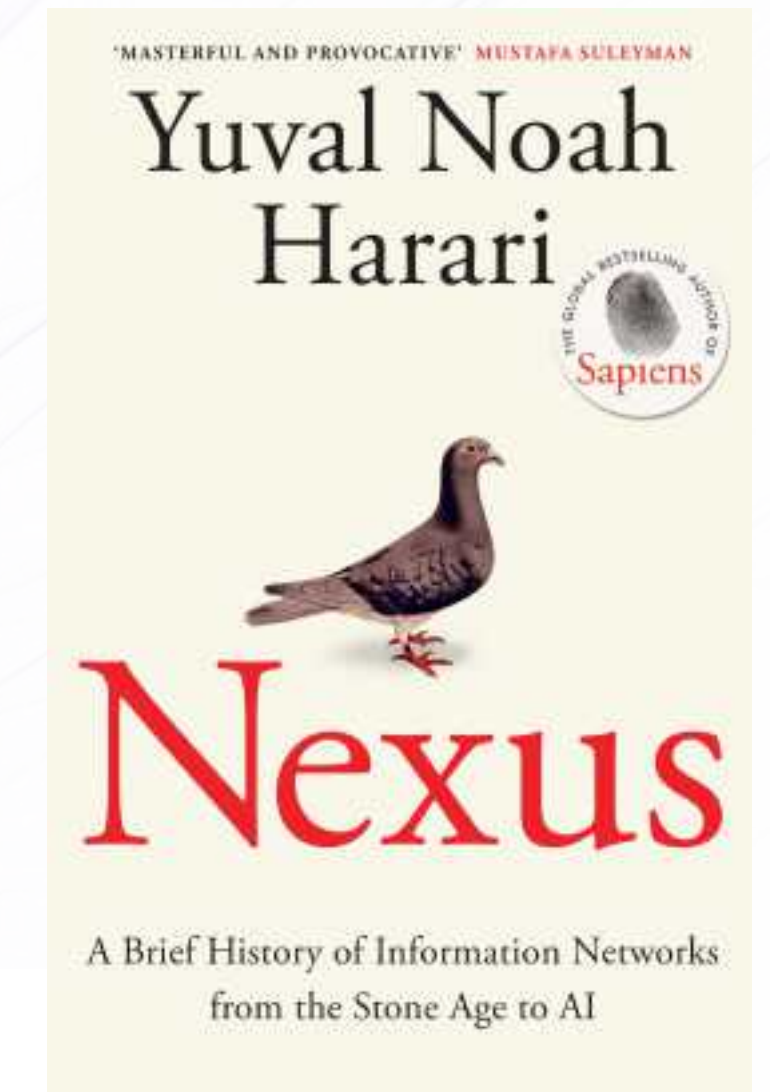
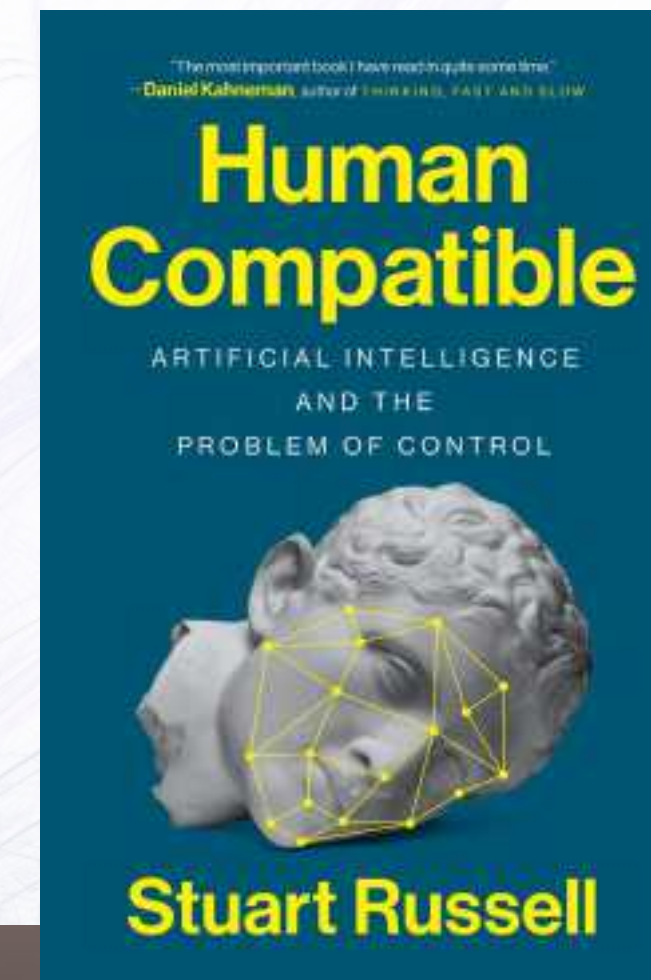
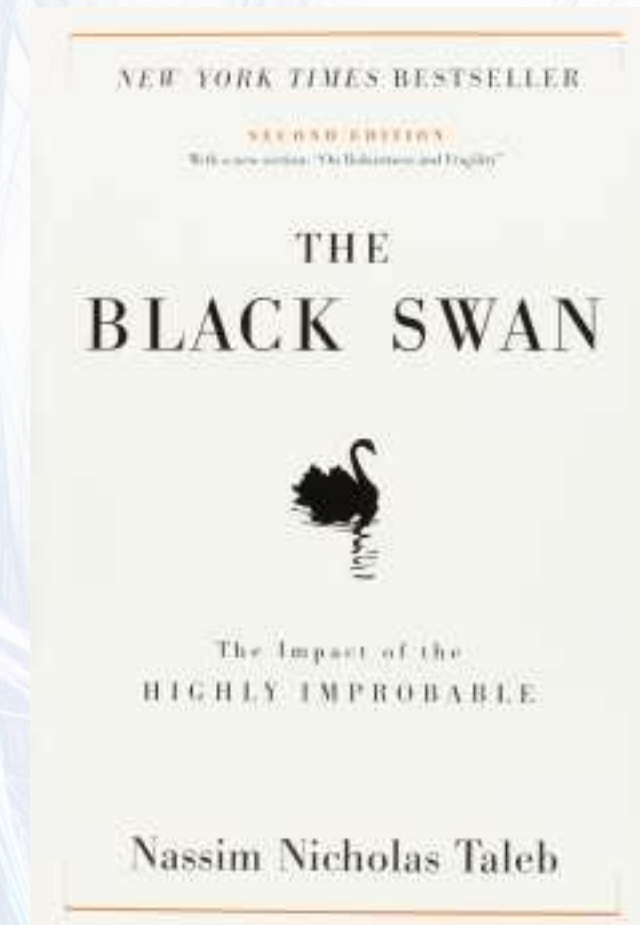
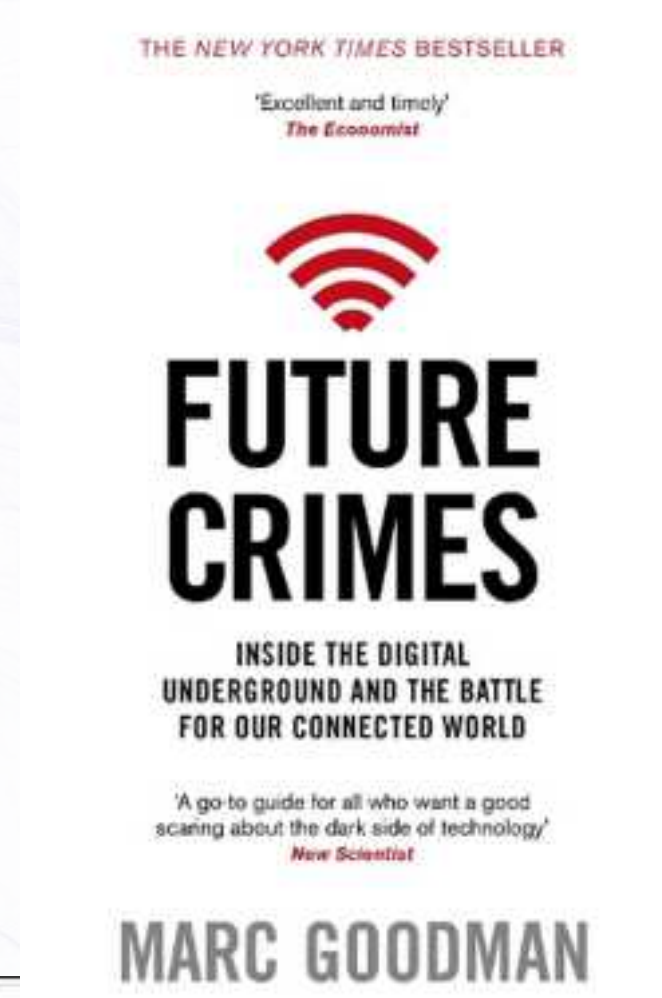
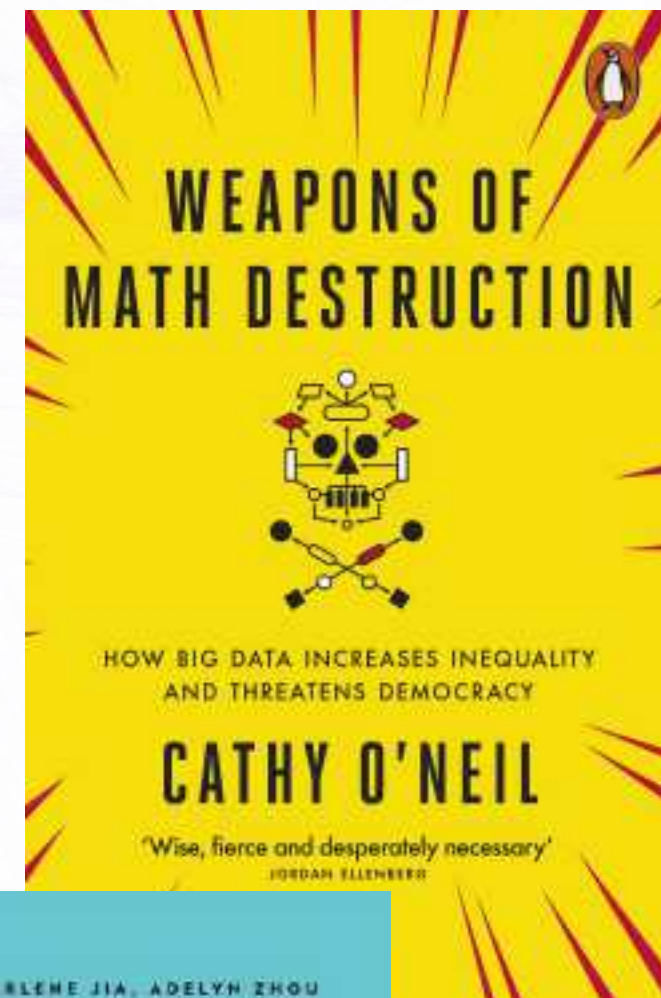
- 1. Beyond Technology:
 - Cybersecurity is more than just a technical issue; it encompasses human behavior, organizational culture, and processes, presenting a multifaceted challenge that goes beyond technology alone.
- 2. Distinct Nature of Cyberspace:
 - Cyberspace operates under different rules compared to the physical world, resulting in distinct vulnerabilities and threats that require unique approaches.
- 3. Changing Legal and Policy Environment:
 - The legal and policy framework surrounding cybersecurity is continuously evolving, leading to gaps in protection and enforcement as laws, policies, and practices are still in development.



AI Futures - Bio Inspired



Some of my inspirations





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Human Intelligence

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Customers



Visit www.grio.nl

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Waar HR professionals elkaar ontmoeten.

pw.

Vragen?

pw.





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Waar HR professionals elkaar ontmoeten.

p.w.

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pleunimaassen@vmnmedia.nl of via 06-12 898 404**

p.w.

