

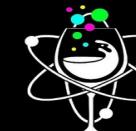
¿ESTAMOS CERCA DE LA INTELIGENCIA ARTIFICIAL GENERAL?

¿Debemos temer a la Singularidad Tecnológica?

@PGaraizar



hika
ateneo



BarLab
UN POTE DE CIENCIA

EL HYPE DE LA IA

UNWANTED AI



ME

**EVERY
COMPANY**

En el futuro todo
iba a ser NFT y
blockchain, ¿dónde
están ahora esas
tecnologías?



¿Dónde están ahora
esas tecnologías?





DON'T ASK THE BARBER
IF YOU NEED A HAIRCUT



S.J. Klapecki - Writer - @...
@sjklapecwriting

Seguir

⋮

The fact that "AI = what makes NPCs in video games do things" and "AI = complex scientific models that have been in use for years" and "AI = non-generative tools that automate tedious processes" and "AI = generative tools" are all called AI feels like deliberate obfuscation

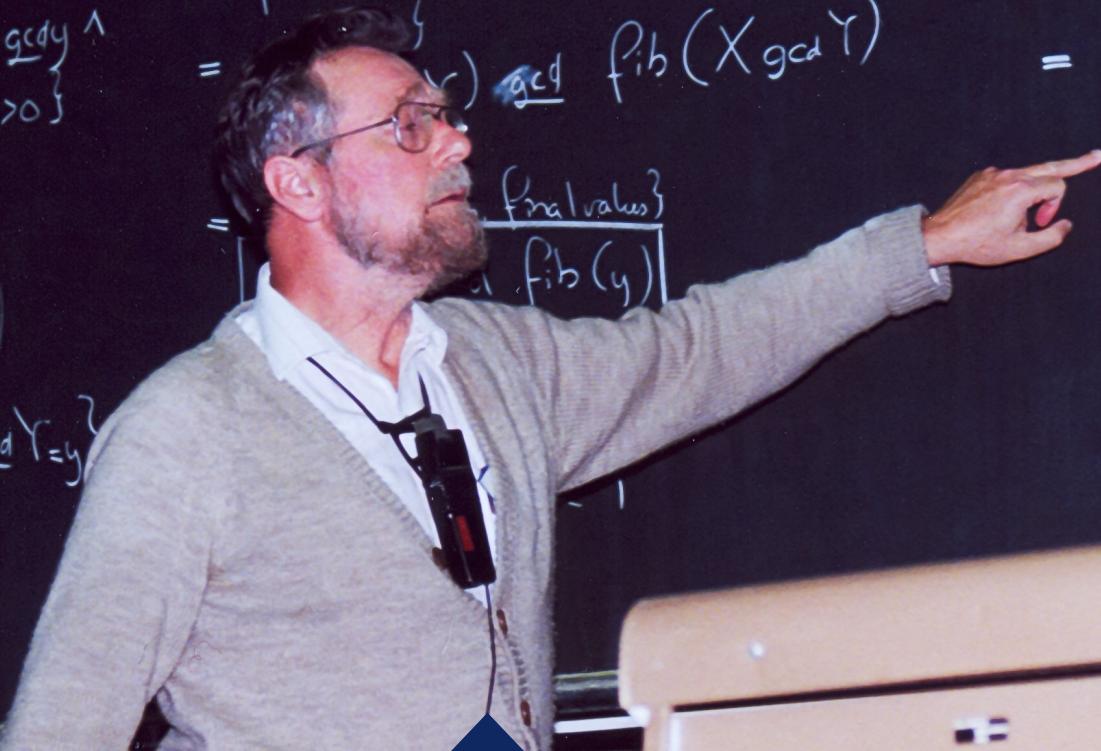
¿De qué IA estamos hablando?
¿IA Generativa?

INTRODUCCIÓN: DE LA IA A CHATGPT

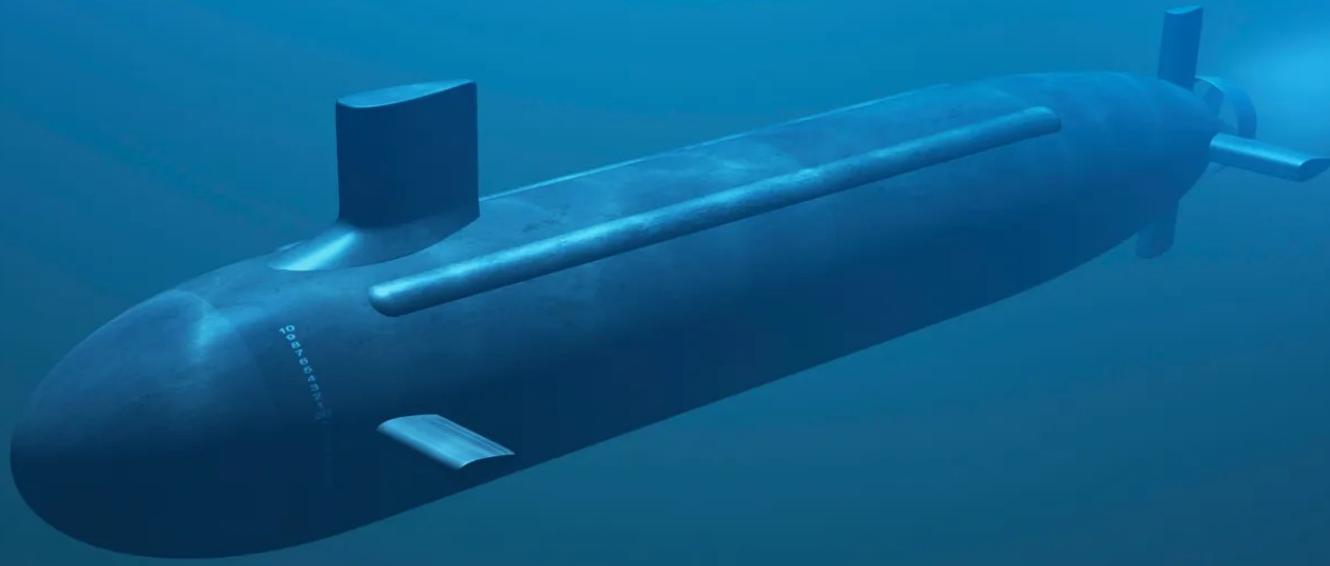


¿Qué es la Inteligencia Artificial?

$$\begin{aligned}
 & \{X > 0, Y > 0\} \quad \text{fib. } 0 = 0 \quad \text{fib. } 1 = 1 \\
 & \text{fib.}(X \text{ gcd } Y) \\
 & = \{X \text{ gcd } Y = x \wedge Y = y\} \quad \text{fib.}(X \text{ gcd } Y) \\
 & = \{x > 0 \wedge y > 0\} \quad \text{gcd} \\
 & = \boxed{\begin{array}{l} \text{final values} \\ \text{fib.}(y) \end{array}} \\
 & \text{var } x, y: \text{int} \\
 & \{X \text{ gcd } Y = X \wedge Y > 0\} \\
 & ; \quad x, y := X, Y \\
 & ; \quad \text{do } \begin{array}{l} x > y \rightarrow x := x - y \\ \text{if } y > x \rightarrow y := y - x \end{array} \\
 & \text{od} \quad \{X \text{ gcd } Y = x \wedge X \text{ gcd } Y = y\}
 \end{aligned}$$



¿Pueden las máquinas pensar?



*La pregunta sobre si una computadora puede pensar
es tan interesante como preguntarse si un submarino puede bucear.*

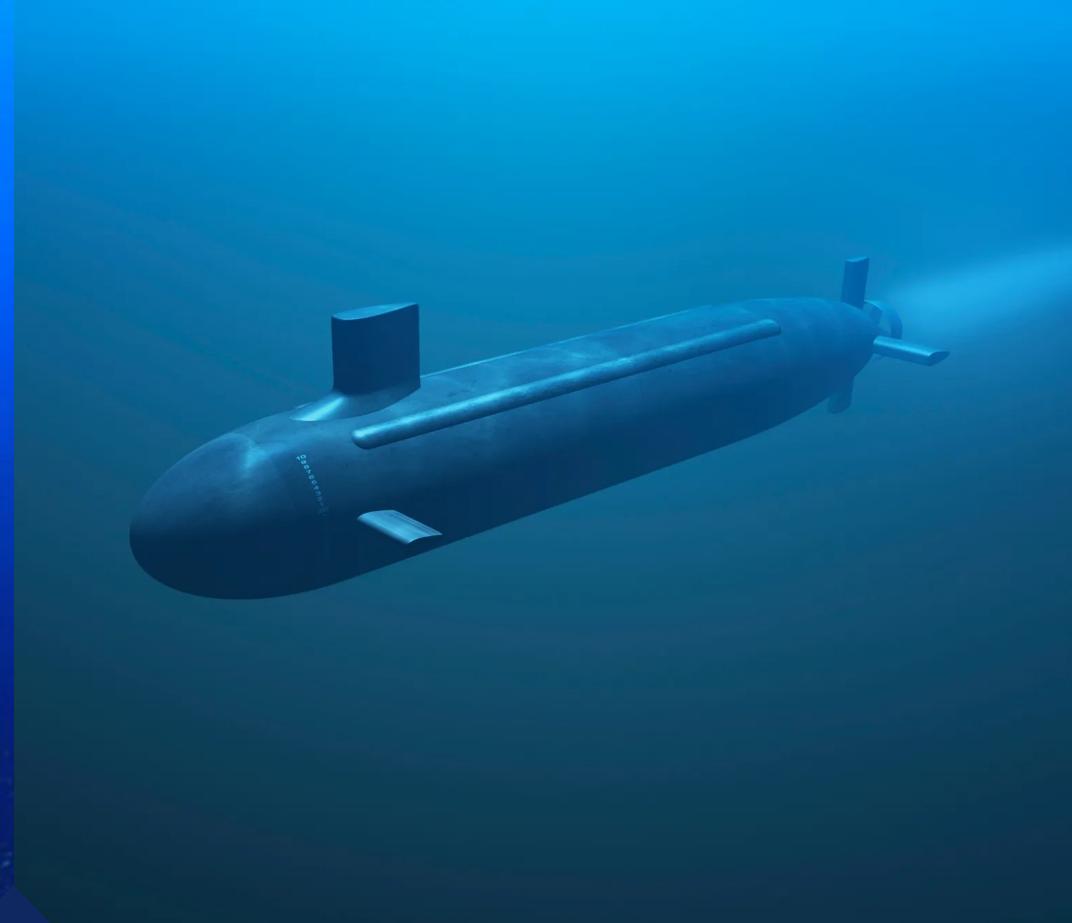
Edsger Dijkstra



Las personas solemos asociar características humanas
a casi todo lo que nos rodea



Las personas solemos asociar características humanas
a casi todo lo que nos rodea



Los submarinos van muy rápido bajo el agua pero no bucean.
Los ordenadores no piensan igual que las personas.

Brief Communication | Published: 02 September 2019

Deep learning enables rapid identification of potent DDR1 kinase inhibitors

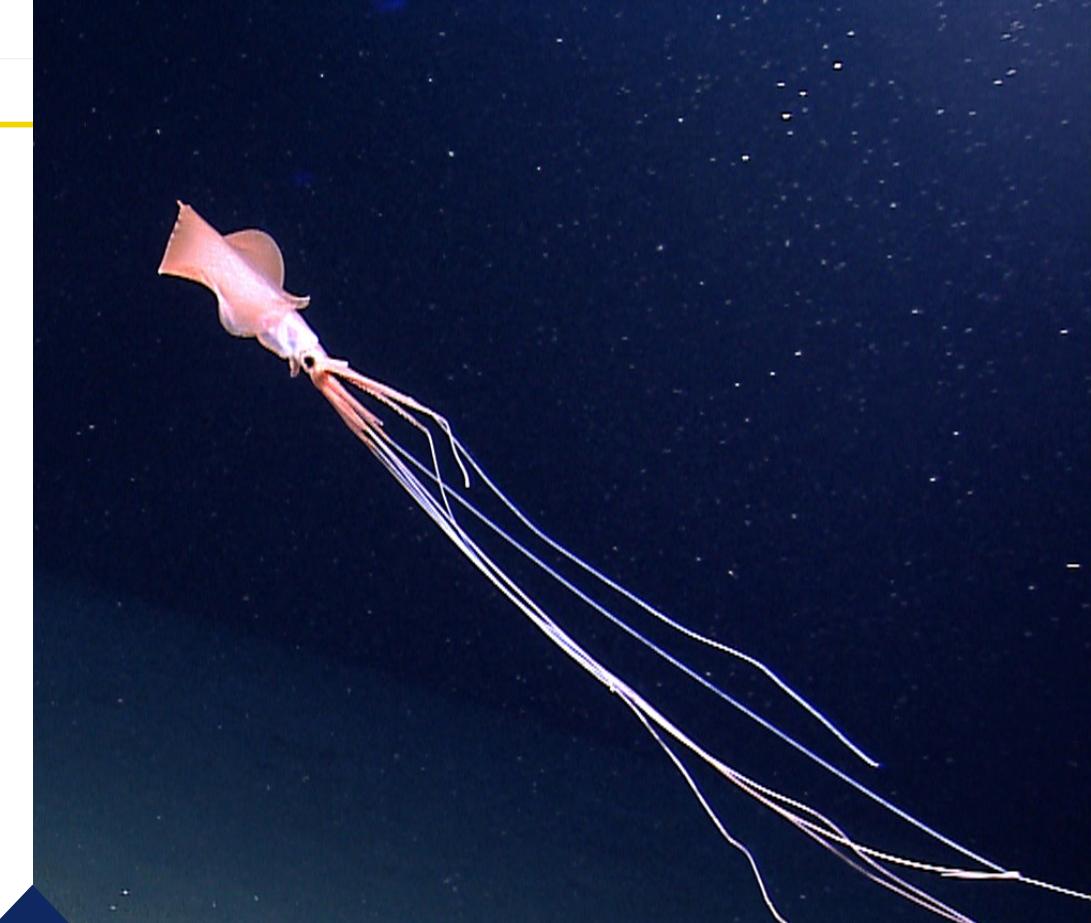
[Alex Zhavoronkov](#) , [Yan A. Ivanenkov](#), [Alex Aliper](#), [Mark S. Veselov](#), [Vladimir A. Aladinskiy](#), [Anastasiya V. Aladinskaya](#), [Victor A. Terentiev](#), [Daniil A. Polykovskiy](#), [Maksim D. Kuznetsov](#), [Arip Asadulaev](#), [Yury Volkov](#), [Artem Zholus](#), [Rim R. Shayakhmetov](#), [Alexander Zhebrak](#), [Lidiya I. Minaeva](#), [Bogdan A. Zagribelnyy](#), [Lennart H. Lee](#), [Richard Soll](#), [David Madge](#), [Li Xing](#), [Tao Guo](#) & [Alán Aspuru-Guzik](#)

[Nature Biotechnology](#) 37, 1038–1040 (2019) | [Cite this article](#)

77k Accesses | 632 Citations | 1597 Altmetric | [Metrics](#)

Abstract

We have developed a deep generative model, generative tensorial reinforcement learning (GENTRL), for *de novo* small-molecule design. GENTRL optimizes synthetic feasibility, novelty, and biological activity. We used GENTRL to discover potent inhibitors of discoidin domain receptor 1 (DDR1), a kinase target implicated in fibrosis and other diseases, in 21 days. Four compounds were active in biochemical assays, and two were validated in cell-based assays. One lead candidate was tested and demonstrated favorable pharmacokinetics in mice.



Sin esas máquinas no podríamos explorar las profundidades del océano o descubrir medicamentos para enfermedades muy difíciles de curar



Pero un submarino puede ser una terrible arma de guerra
y una inteligencia artificial puede ser racista

TENEMOS
QUE SABER...



¿Cómo se crean las Inteligencias Artificiales?



| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 6 | 9 | 5 | 6 | 1 | 8 | 7 | 8 | 5 | 8 |
| 8 | 8 | 6 | 2 | 8 | 1 | 2 | 8 | 5 | 2 | | |
| 2 | 3 | 1 | 1 | 4 | 4 | 7 | 9 | 8 | 1 | | |
| 5 | 3 | 7 | 8 | 7 | 4 | 1 | 7 | 3 | 7 | 3 | |
| 1 | 3 | 6 | 7 | 8 | 4 | 3 | 4 | 1 | 7 | 3 | |
| 3 | 1 | 5 | 7 | 8 | 4 | 3 | 4 | 1 | 7 | 3 | |

¿Qué información se ha usado para crearlas?



¿Para qué van a servir?

¿QUÉ ES LA
INTELIGENCIA?

ES LA
HABILIDAD DE...

Much to learn
you still have.

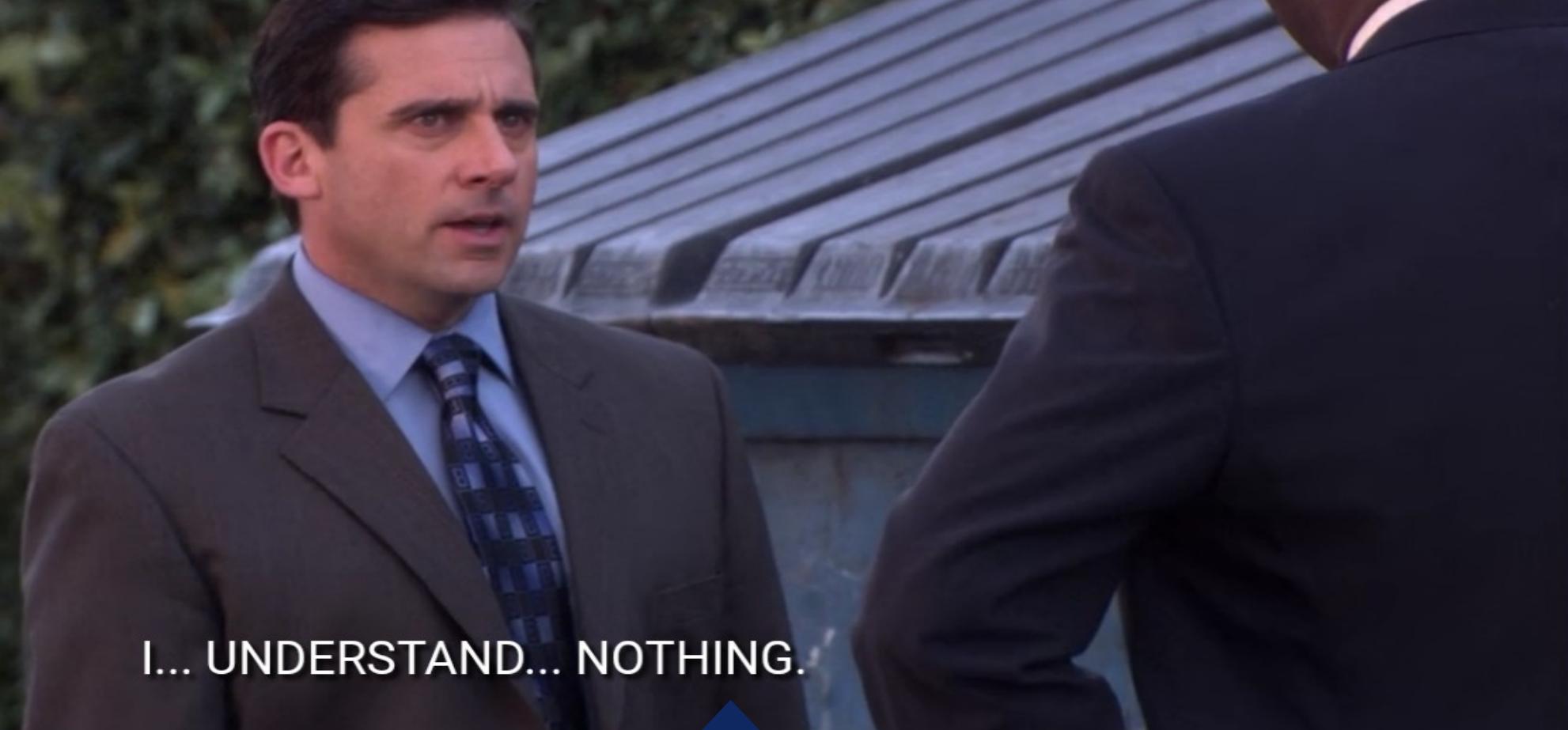


Aprender a partir de las cosas que te han pasado

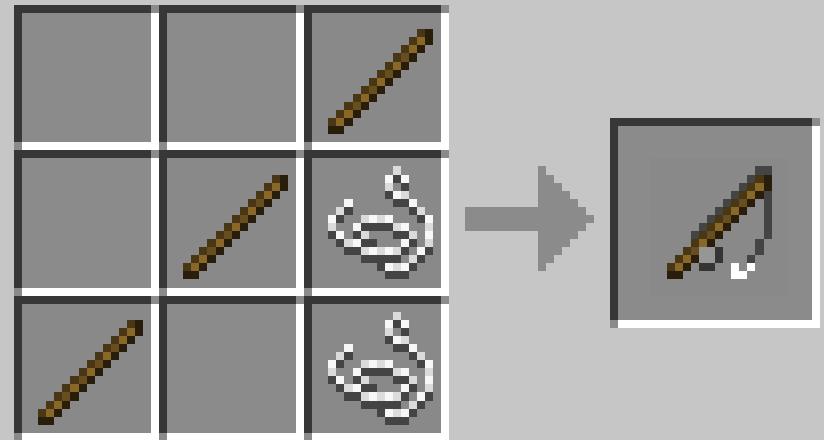
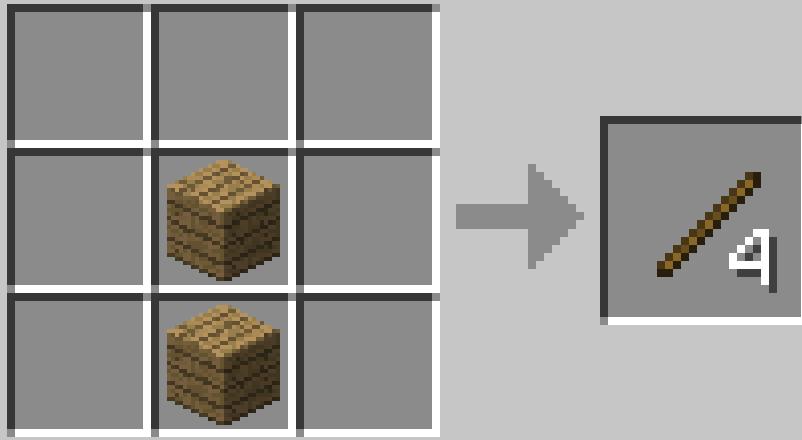


Improvise. Adapt. Overcome

Adaptarte a los cambios de tu entorno



Comprender la información que te llega



Aprovechar lo que ya sabes para crear información nueva



Razonar sobre todo lo que percibes y sabes



Las máquinas son capaces de todo esto... ¿son inteligentes?

ACHIEVEMENTS UNLOCKED BY LLMS

EMERGENT ABILITIES OF
LARGE LANGUAGE MODELS (APR/2023)

S

GPT-3 13B,
PaLM 8B



Mod.Arithmetic*



Debugging*



Comprehension*

M

GPT-3 175B,
LaMDA 137B,
PaLM 64B,
Chinchilla 7B



LinguisticsPuzzles*



EmojiMovie*



GRE-Comprehension*



MetaphorUnderstanding*



PhysicalIntuition*



LogicalDeduction*

L

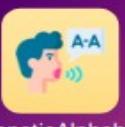
PaLM 540B,
Chinchilla 70B



GeometricShapes*



Proverbs*



PhoneticAlphabet*



ElementaryMath*



CausalJudgment*



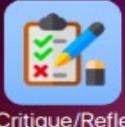
CodeLineDescription*

XL

GPT-4,
Gemini (est.)



College-LevelExams



Self-Critique/Reflection



AppBuilding



SpatialReasoning



AdvancedCreativity

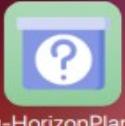


EmbodimentOptions

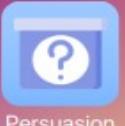
Next...



Grounding



Long-HorizonPlanning



Persuasion



AdvancedEmbodiment



Awareness



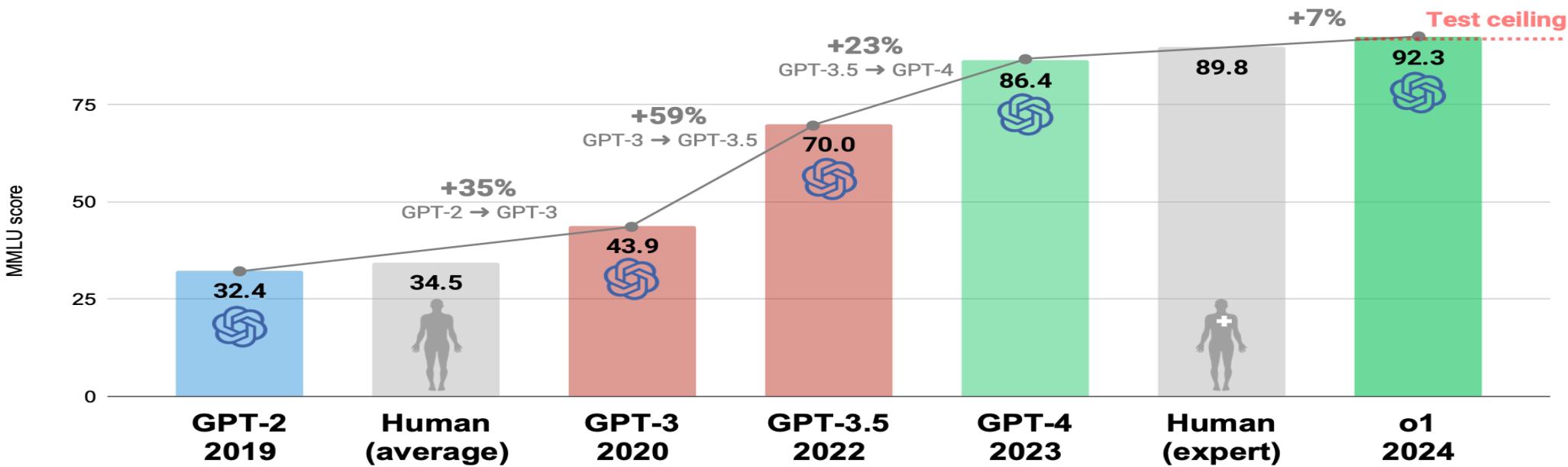
More...



LifeArchitect.ai/models

Las máquinas son capaces de todo esto... ¿son inteligentes?

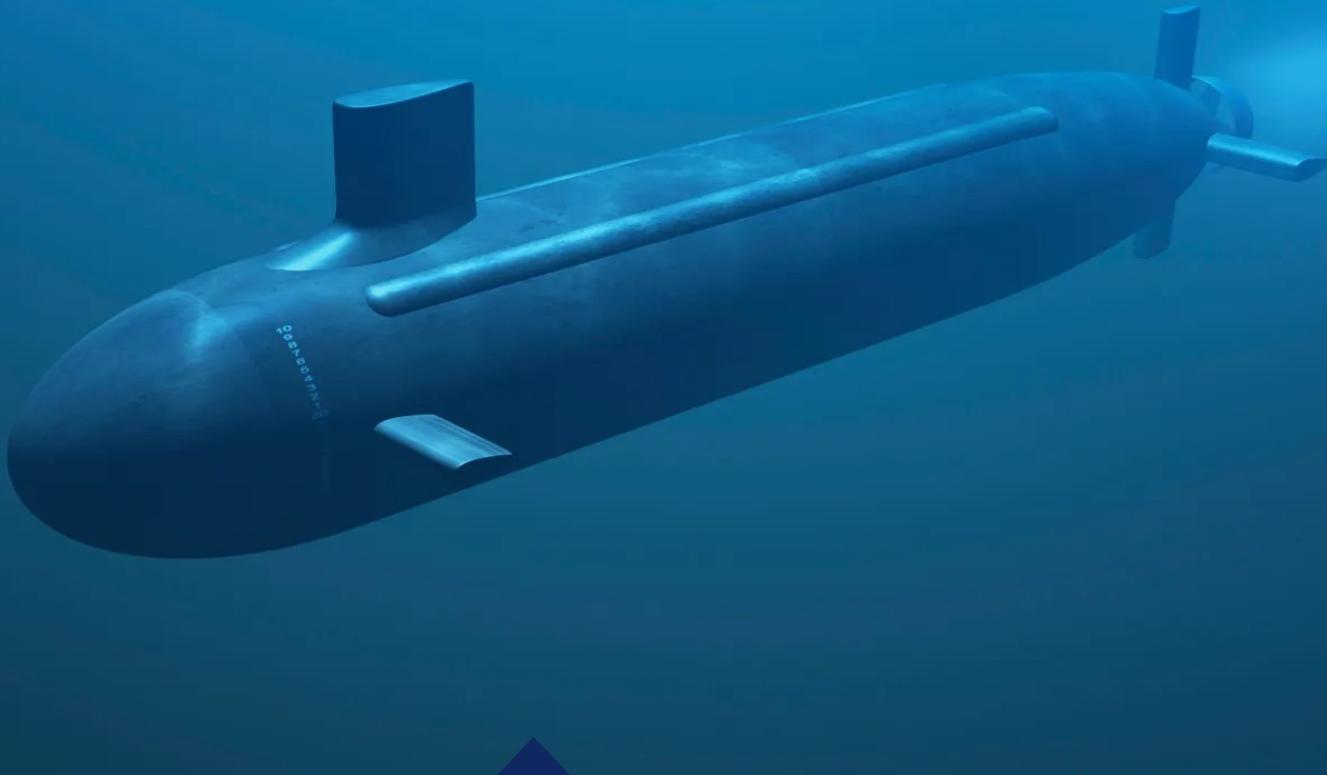
LLMs: SMARTER THAN WE THINK (SEP/2024)



MMLU (Massive Multitask Language Understanding) benchmark features 57 tasks including mathematics, US history, computer science, law, and more. % increases rounded. <https://lifearchitect.ai/o1/> Alan D. Thompson. 2024.



LifeArchitect.ai/o1



No lo hacen igual que las personas, ¡los submarinos no bucean!

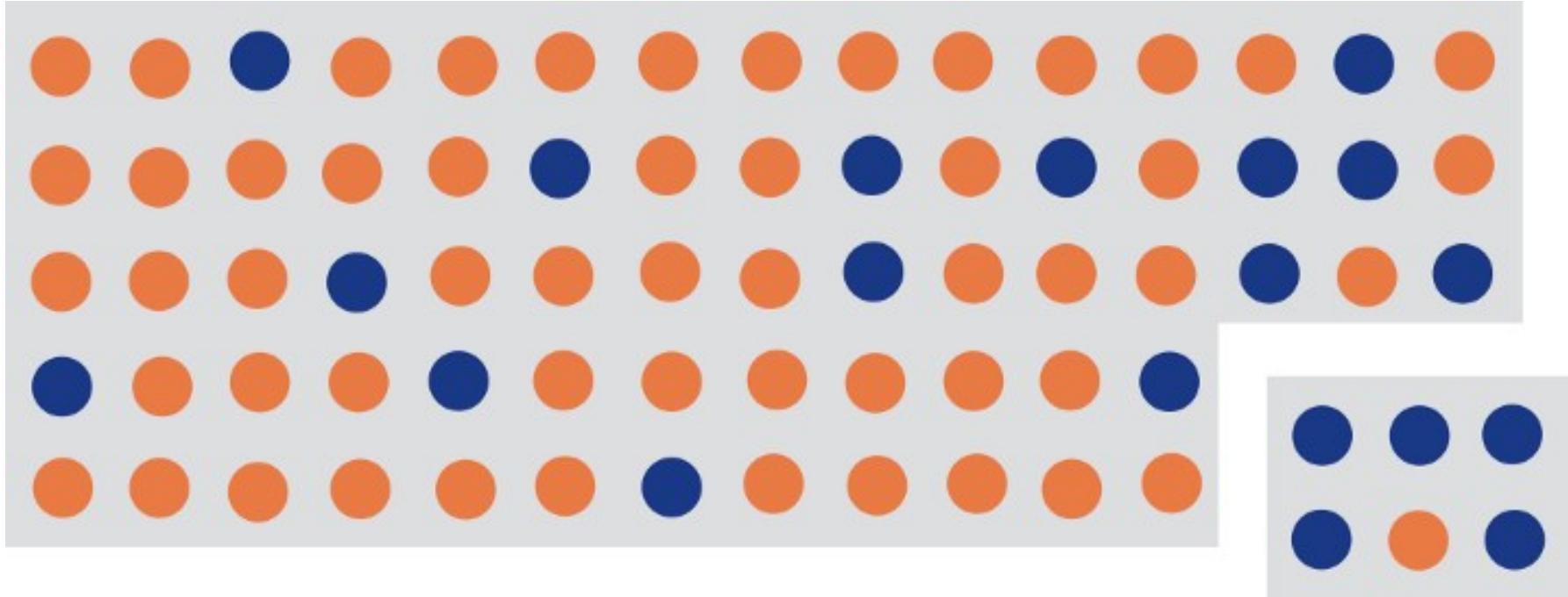
¿CÓMO APRENDEN
LAS MÁQUINAS?



Aprendizaje automático (*Machine Learning*)

<https://studio.code.org/s/oceans/lessons/1/levels/2>

LOS DATOS: EL COMBUSTIBLE DE LA IA



Si los datos están sesgados, la IA no razonará correctamente

¿CÓMO SON LOS
DATOS DE BUENA
CALIDAD?



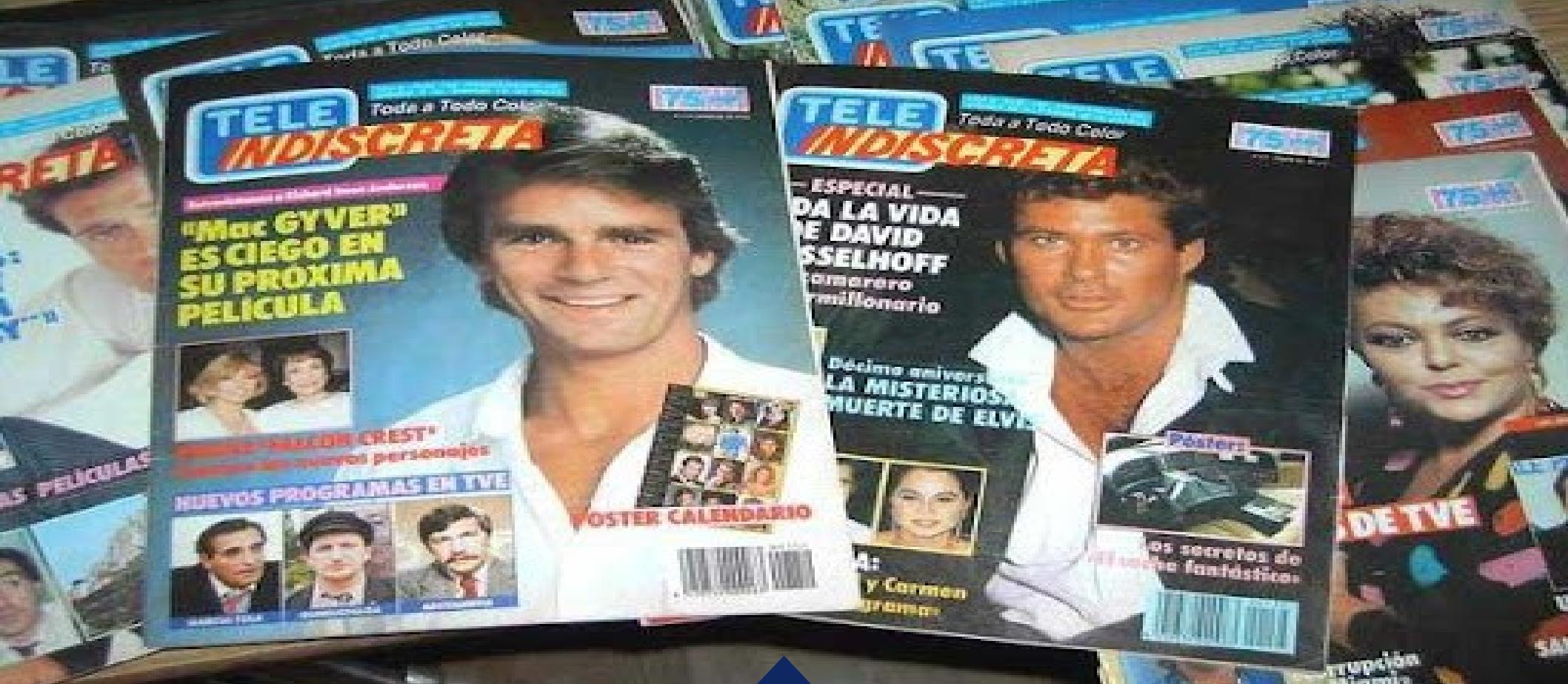
Precisos: que dan información detallada.



Pertinentes: que tienen que ver con lo que queremos hacer.



Completos: que no se olvidan de partes importantes.

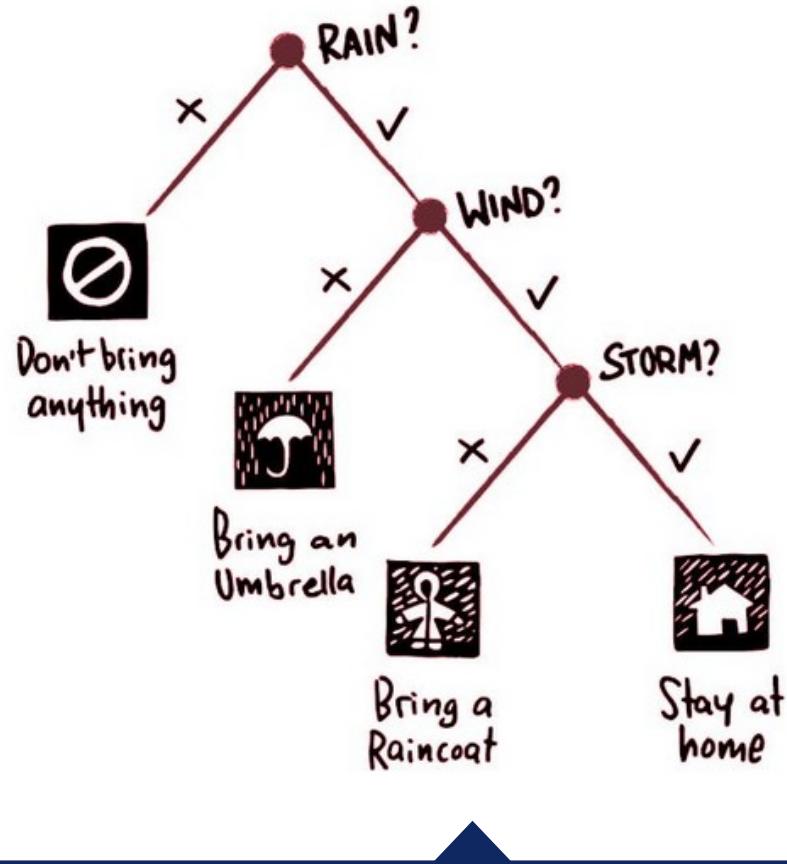


Oportunos: que no se han quedado anticuados, sin duplicados.

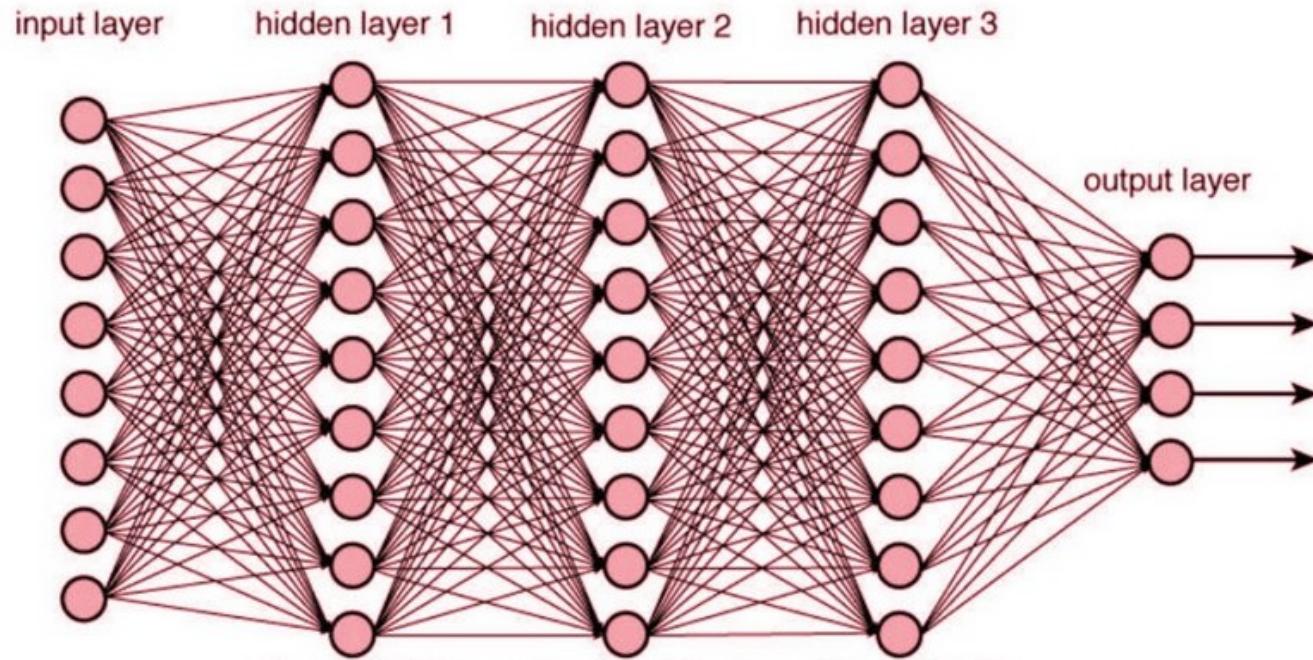


Coherentes: que no varían aleatoriamente.

IAs SIMBÓLICAS vs. SUBSIMBÓLICAS



IAS simbólicas: manejan conceptos, reglas, símbolos.
Top-down. Razonamiento deductivo. Fácil de entender el proceso.

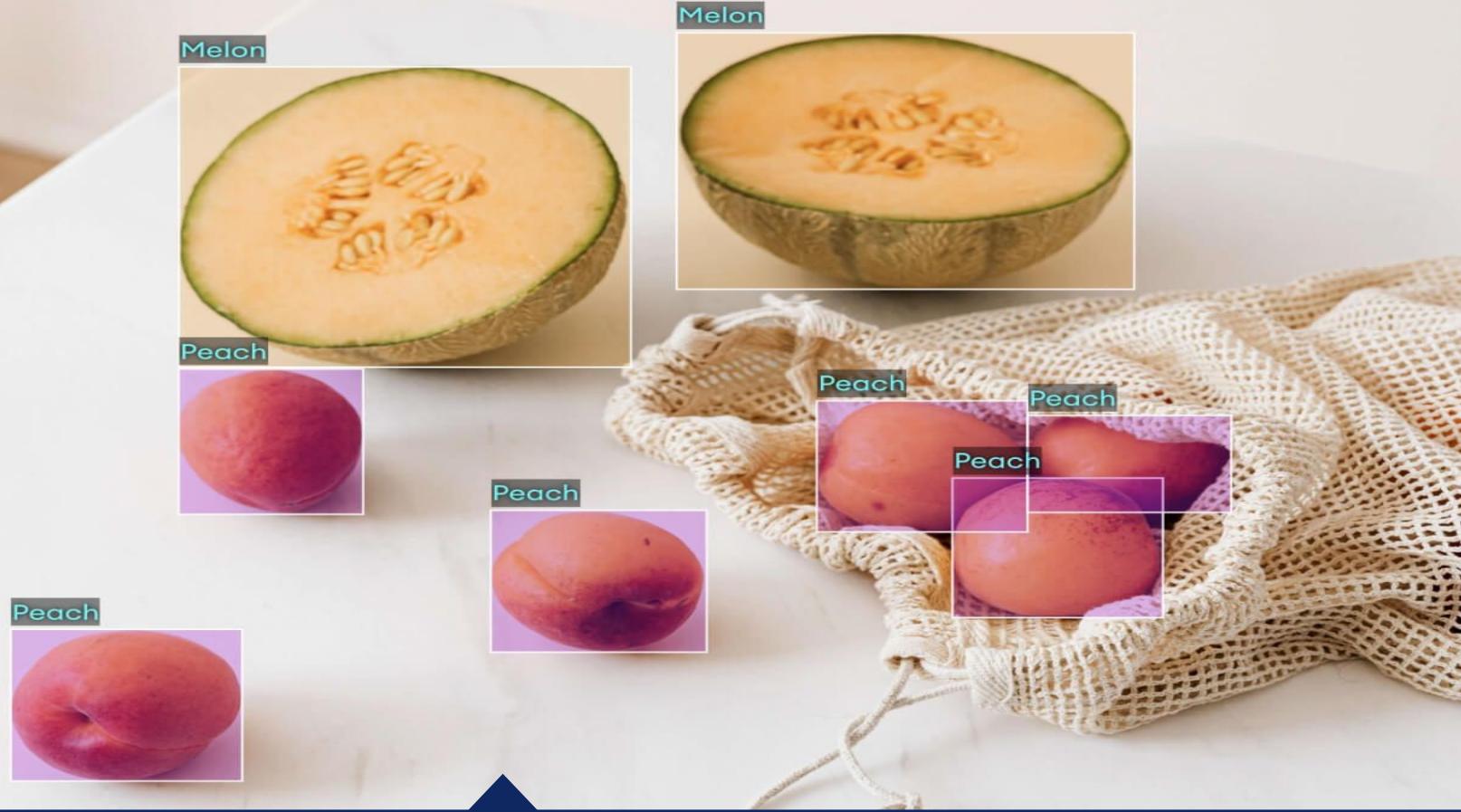


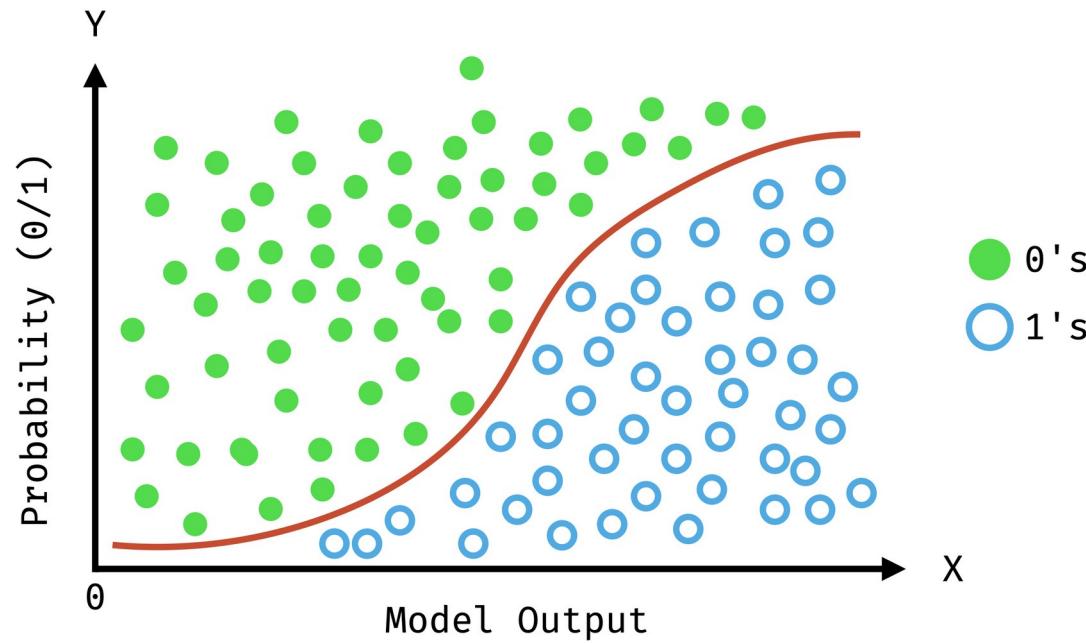
IAS subsimbólicas: modelos a partir de conjuntos de datos masivos.
Bottom-up. Razonamiento inductivo. Difícil de entender el proceso.

APRENDIZAJE AUTOMÁTICO

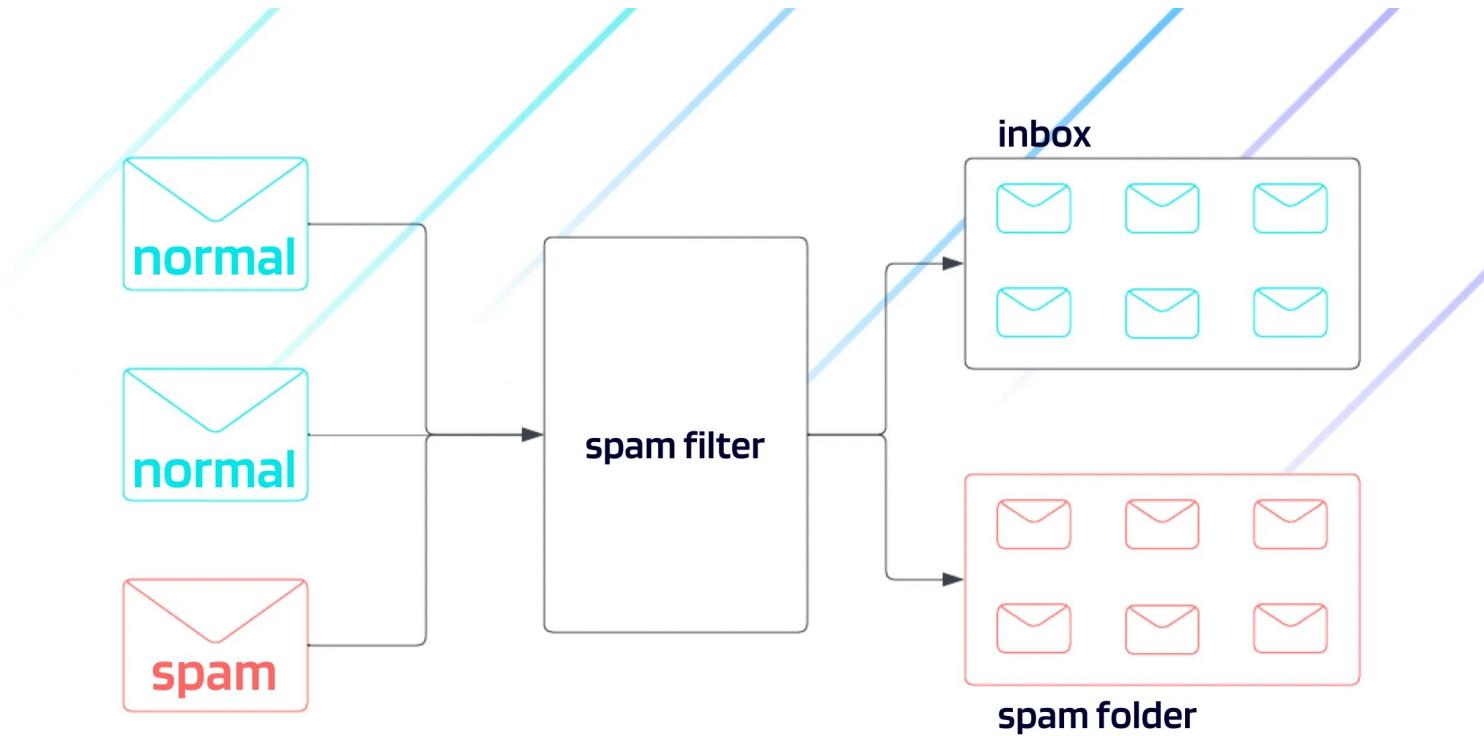
APRENDIZAJE SUPERVISADO

Si los datos están etiquetados → Aprendizaje supervisado

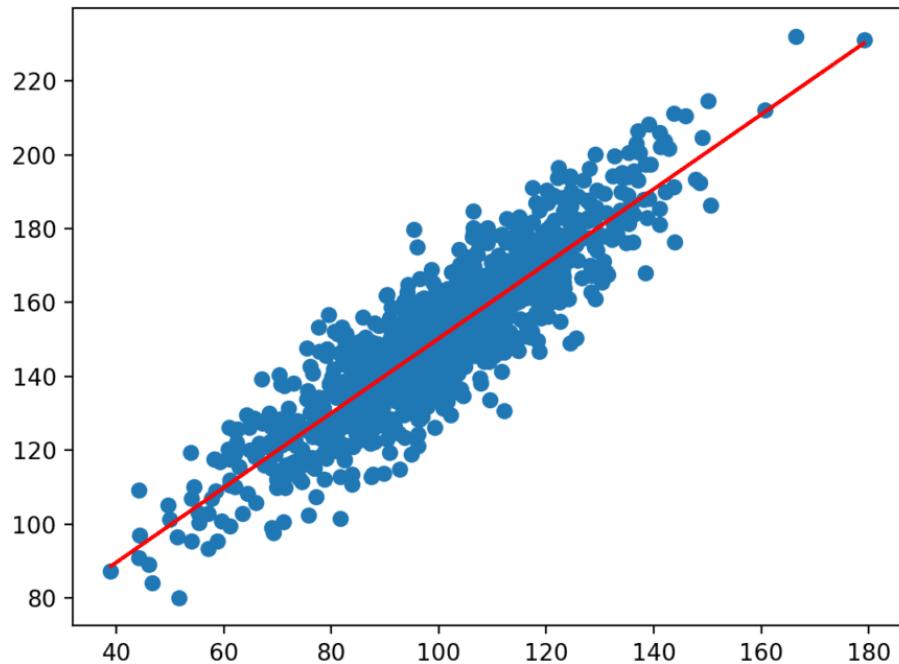




Aprendizaje supervisado → Clasificación

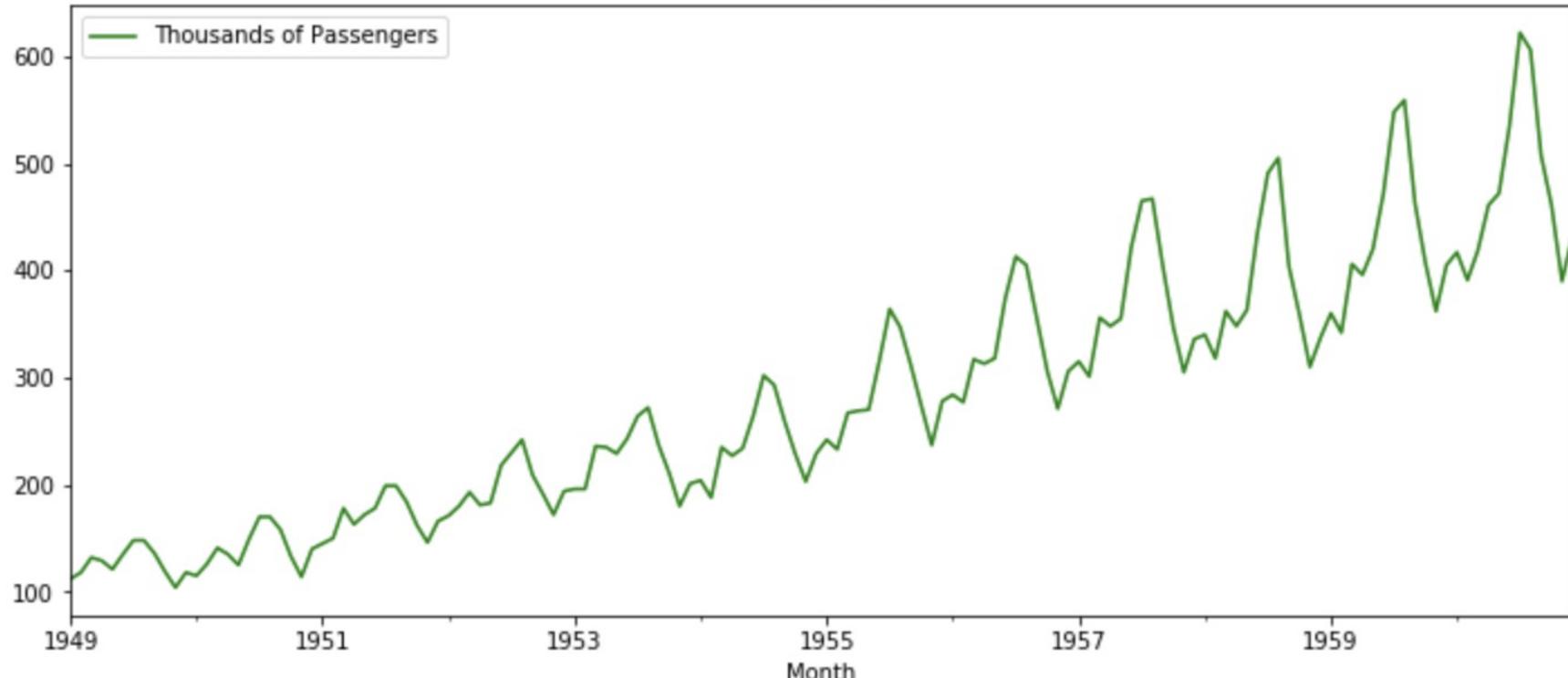


Aprendizaje supervisado → Clasificación



Aprendizaje supervisado → Predicción

Airline Passengers per Month

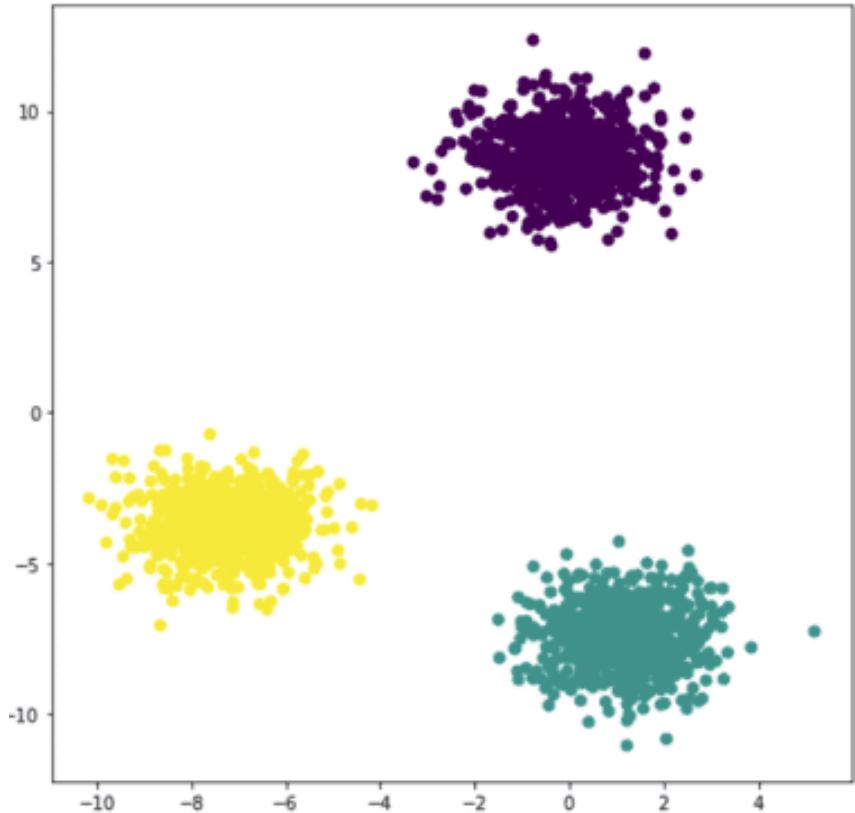
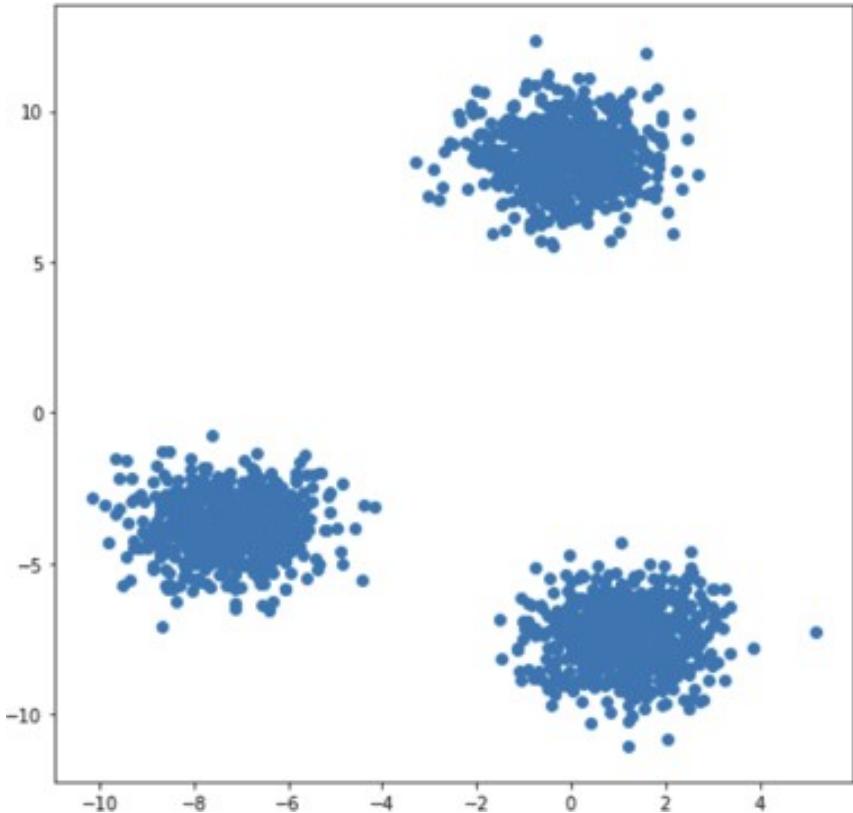


Aprendizaje supervisado → Predicción

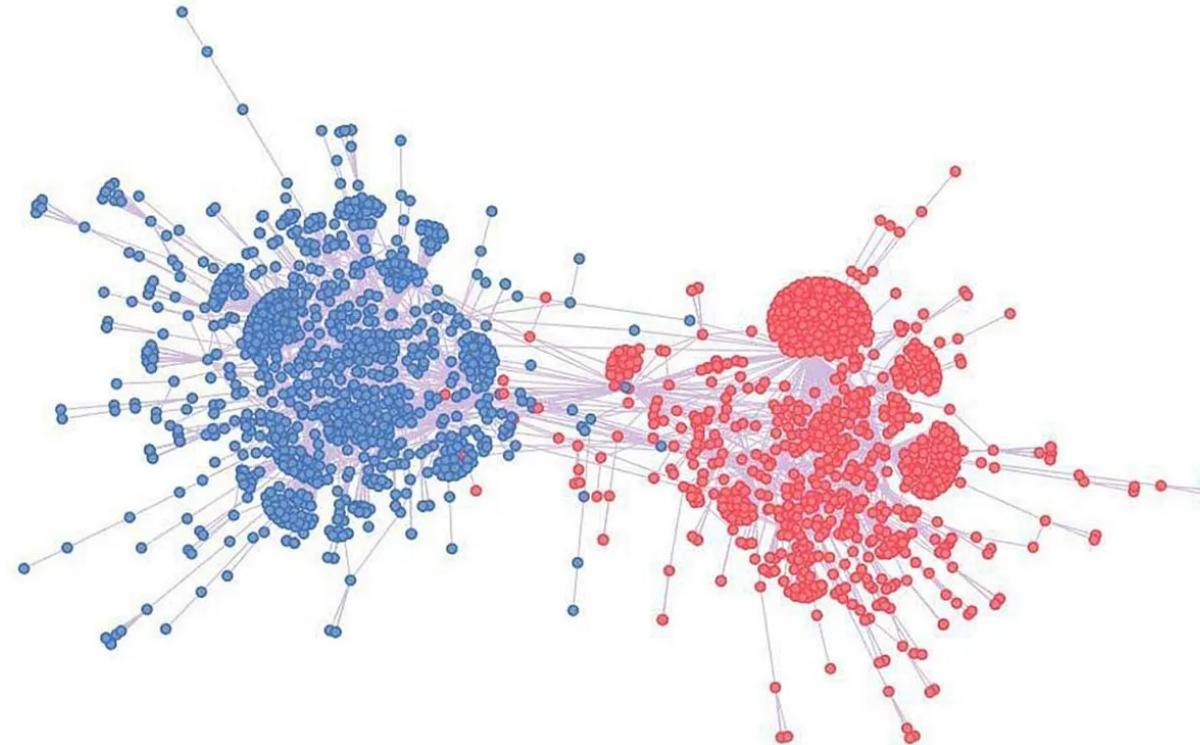
APRENDIZAJE NO SUPERVISADO



Si los datos NO están etiquetados → Aprendizaje NO supervisado

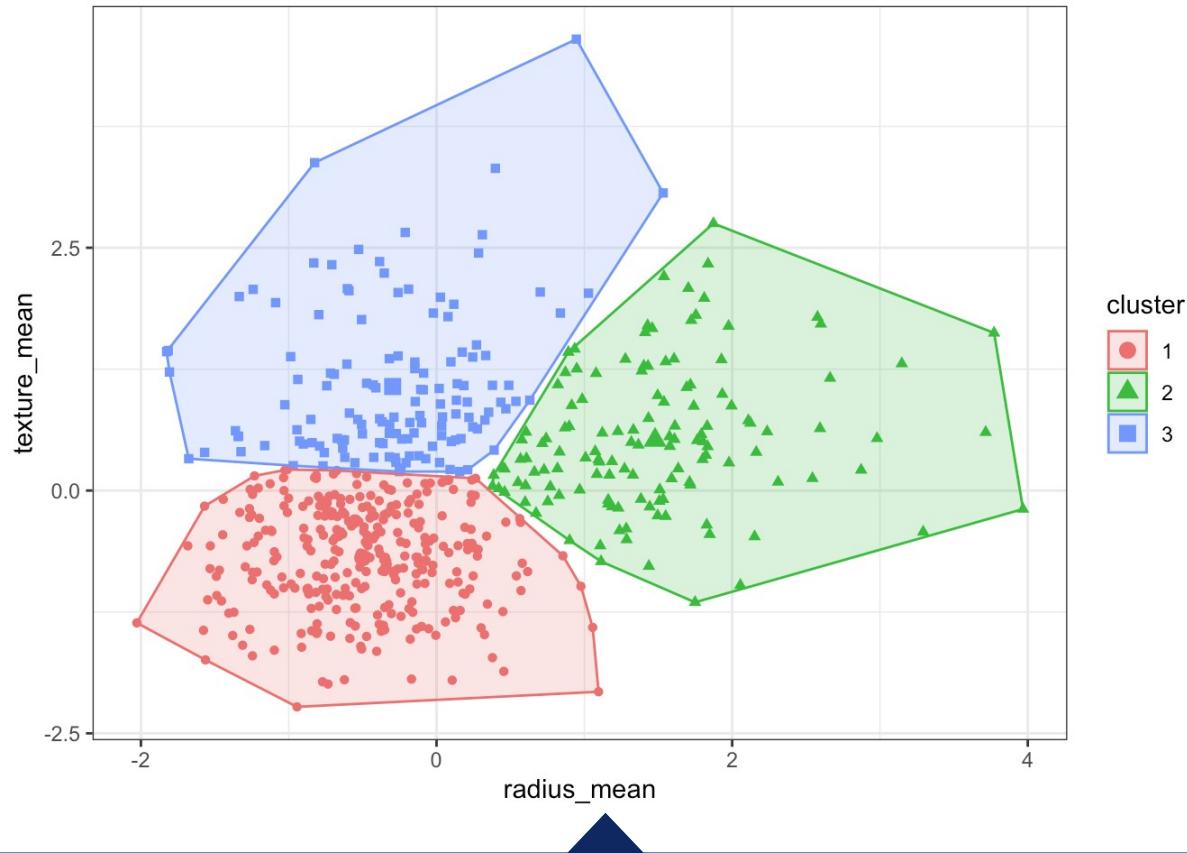


Aprendizaje NO supervisado → Agrupamientos



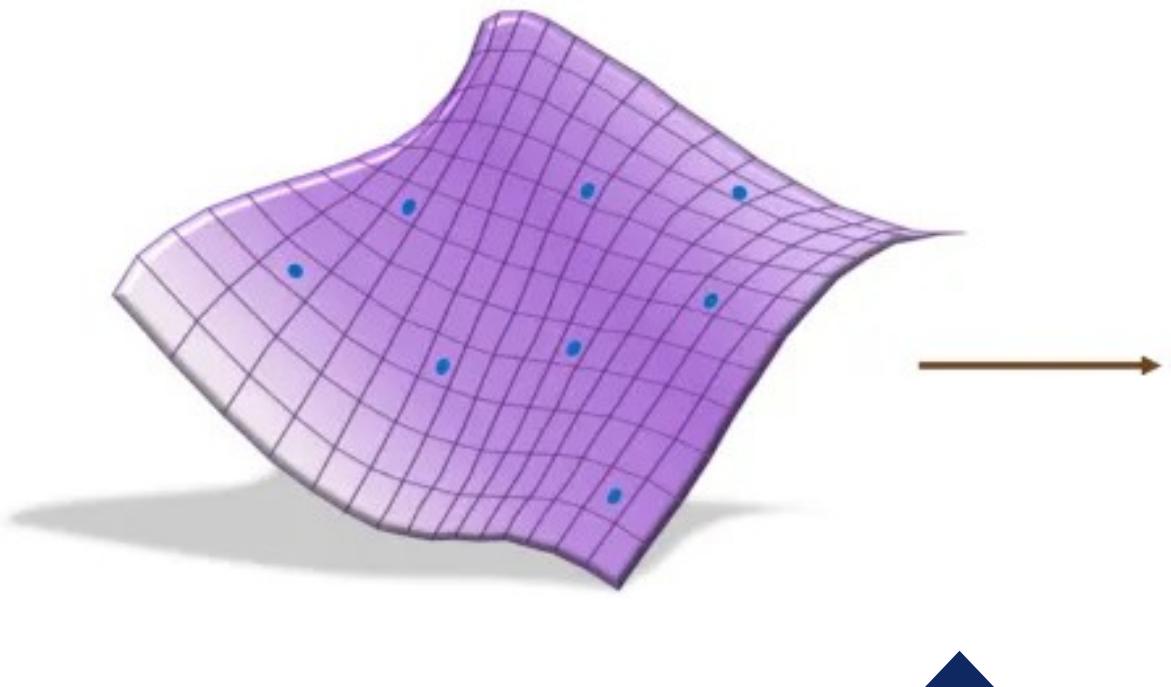
Aprendizaje NO supervisado → Agrupamientos

Cluster plot



Aprendizaje NO supervisado → Agrupamientos

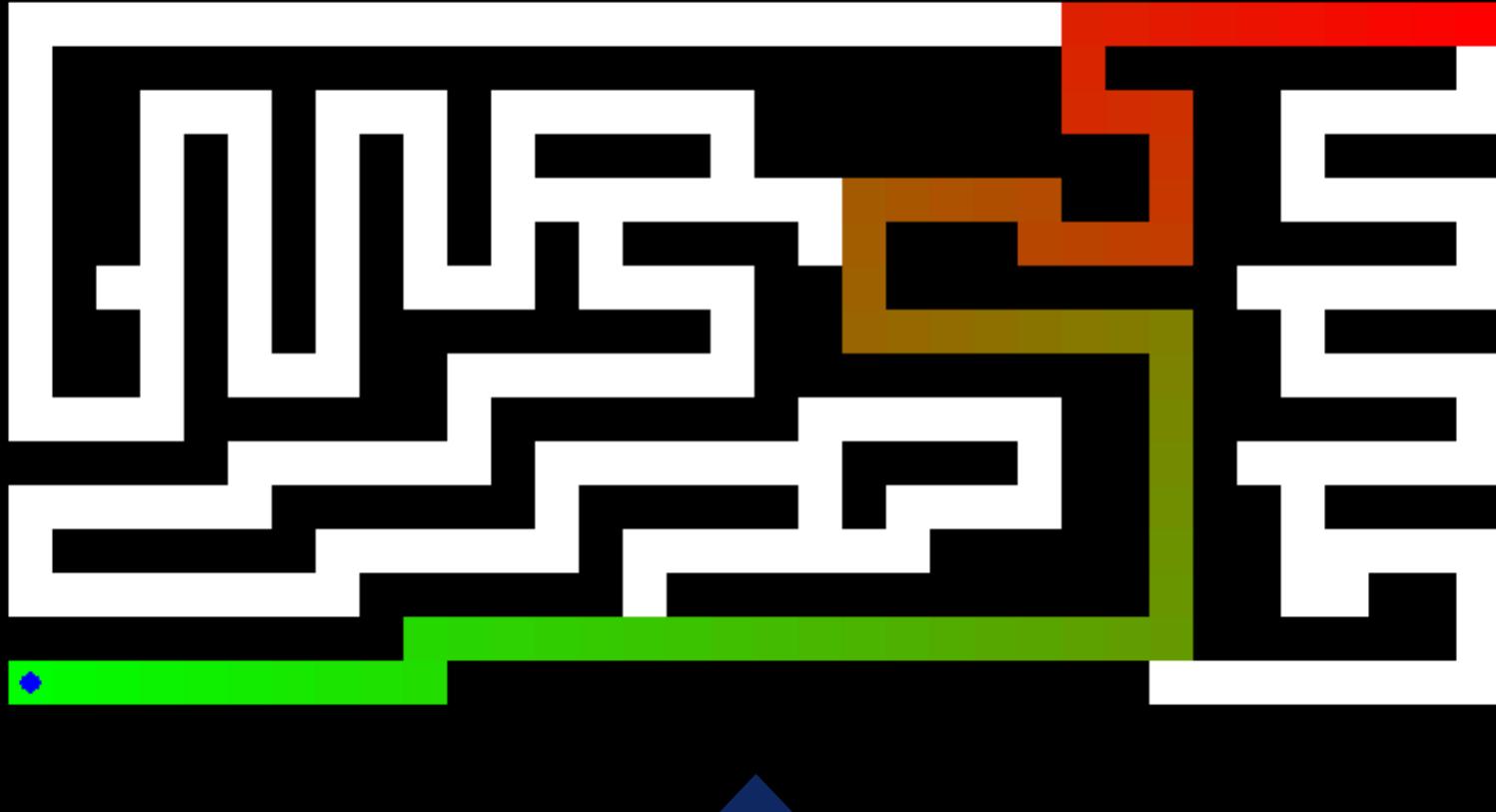
Original Space



Reduced Space

Aprendizaje NO supervisado → Reducción de la dimensionalidad

APRENDIZAJE POR REFUERZO



Si podemos definir una función de recompensa → Aprendizaje por refuerzo



Aprendizaje por refuerzo en entornos virtuales

https://www.youtube.com/watch?v=L4KBBAwF_bE



Aprendizaje por refuerzo en entornos reales

INTELIGENCIAS ARTIFICIALES FUERTES Y DÉBILES



IA Débil / Estrecha: AlphaGo, AlphaZero, Tesla AutoPilot, etc.

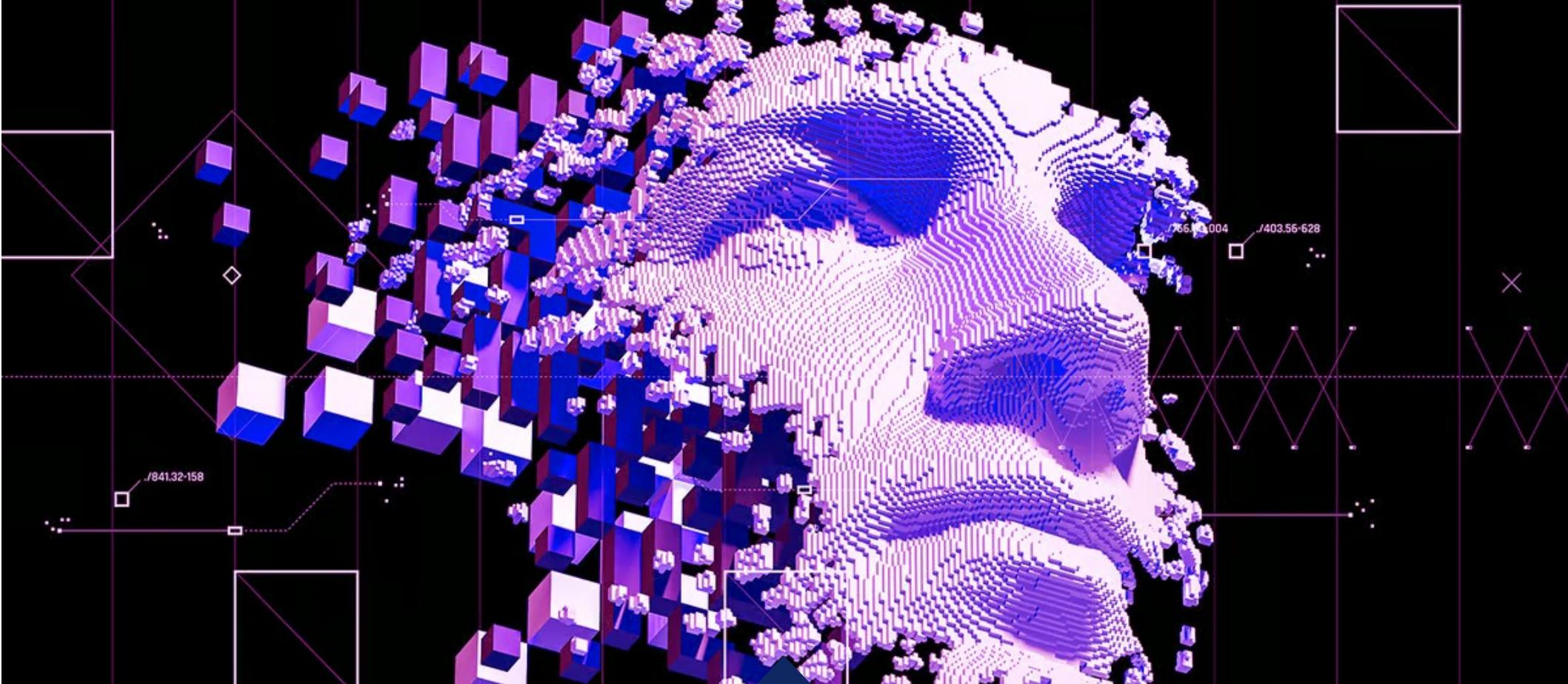
Resuelve UN TIPO de problemas complejos

No puede trasladar sus habilidades a otros ámbitos

Necesita millones de datos estructurados para aprender

IA actual, con rendimientos suprahumanos

IA Débil / Estrecha



IA Fuerte / Ancha: Artificial General Intelligence (AGI)

Mismas capacidades que un cerebro humano

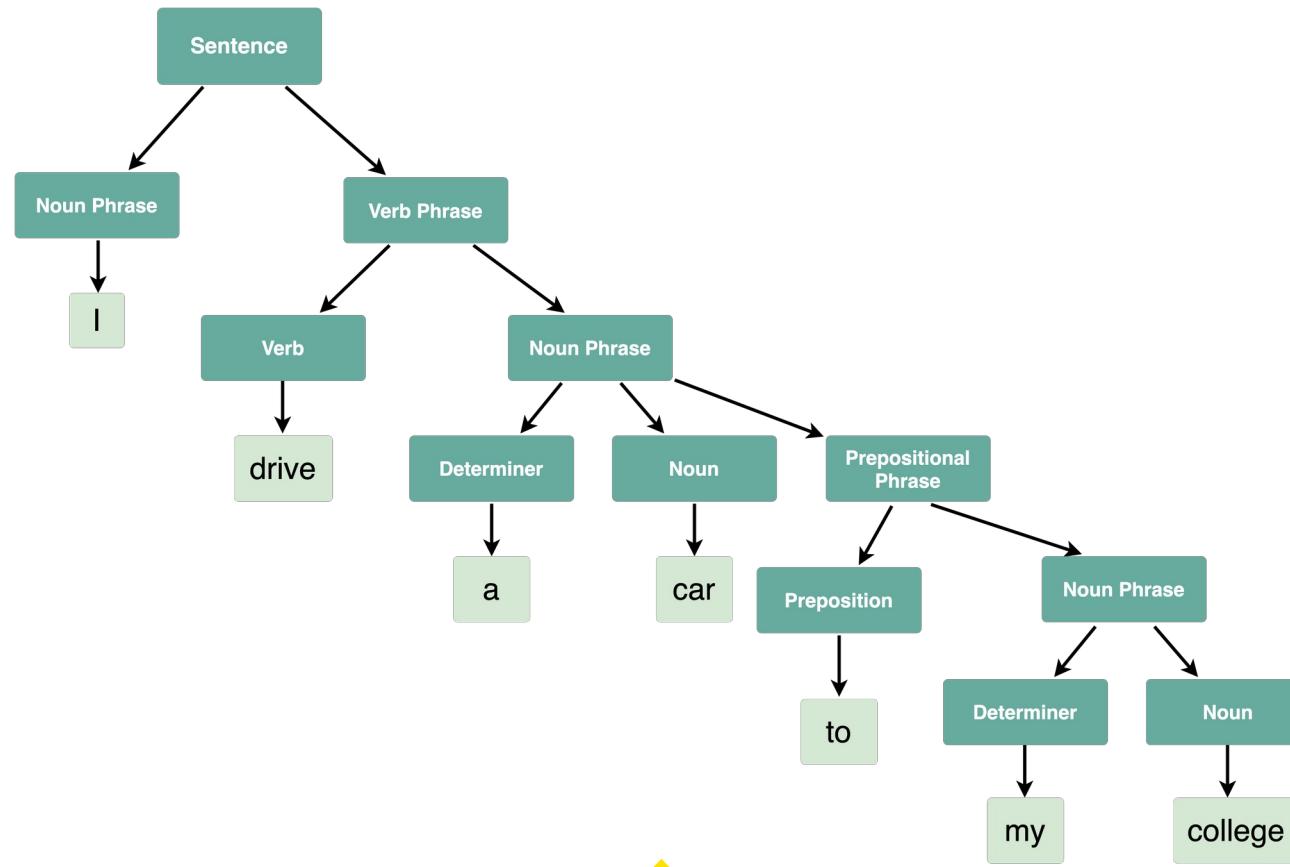
Puede trasladar sus aprendizajes a nuevos dominios

Aprende y razona autónomamente a partir de pocos datos

IA futura, todavía no estamos aquí

Artificial General Intelligence (AGI)

LAS IAs
GENERATIVAS



LLMs aprovechando el enorme potencial del lenguaje natural

GRANDES MODELOS DE LENGUAJE

THE GENERATIVE AI STARTUP LANDSCAPE

ANTLER

TEXT



IMAGE



AUDIO



CODE



CHATBOTS



VIDEO



ML PLATFORMS



SEARCH



GAMING



DATA







Raúl Navarro
@numero6

...

Escribe "Pedro Sánchez rechaza" y deja que el texto predictivo haga el trabajo del PSOE.

Pedro Sánchez rechaza la comedia musical de la vida.

9:13 a. m. · 13 sept. 2019 desde Madrid, España

168 Retweets 368 Citas 895 Me gusta 4 Elementos guardados



Twittear tu respuesta

Responder



Seituss @seituss · 13 sept. 2019

...

Pedro Sanchez rechaza la idea de que el grupo de contacto con el objeto de la mutua es que entre los distintos barrios de alicante



Eneko @nkoethos · 13 sept. 2019

...

Pedro Sánchez rechaza la oferta de renovación de la póliza de seguros de la compañía.



Pau Arlandis @Gensin · 13 sept. 2019

...

Pedro Sánchez rechaza la propuesta de la ley de educación para la ciudadanía



F. Javier Rueda @fjrueda · 13 sept. 2019

...

Pedro Sánchez rechaza el día de mañana y pasado mañana en el caso de no responder a la espera de su interés.



Kovévac @fdelclos · 13 sept. 2019

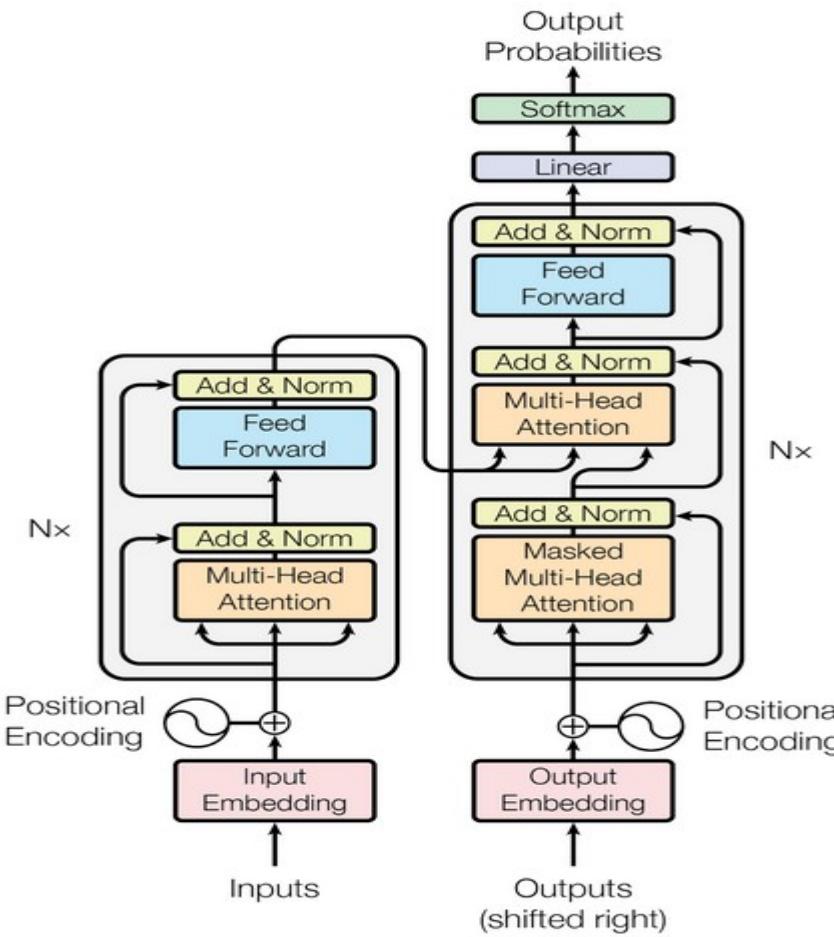
...

Pedro Sánchez rechaza la información contenida en este mensaje por favor me puedes ayudar

Un texto predictivo venido a más



Transformers!



Transformers!

Attention Is All You Need

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Abstract

The dominant sequence transduction models are based on complex recurrent or convolutional neural networks that include an encoder and a decoder. The best performing models also connect the encoder and decoder through an attention mechanism. We propose a new simple network architecture, the Transformer, based solely on attention mechanisms, dispensing with recurrence and convolutions entirely. Experiments on two machine translation tasks show these models to be superior in quality while being more parallelizable and requiring significantly less time to train. Our model achieves 28.4 BLEU on the WMT 2014 English-to-German translation task, improving over the existing best results, including ensembles, by over 2 BLEU. On the WMT 2014 English-to-French translation task, our model establishes a new single-model state-of-the-art BLEU score of 41.0 after training for 3.5 days on eight GPUs, a small fraction of the training costs of the best models from the literature.



RNN: Redes Neuronales Recurrentes para el análisis de texto (secuencial)

<https://www.youtube.com/watch?v=aL-EmKuB078>



RNN: Redes Neuronales Recurrentes para el análisis de texto (secuencial)

<https://www.youtube.com/watch?v=aL-EmKuB078>

No creo que la cazadora quepa dentro de tu mochila porque es muy grande. ¿Qué es muy grande?



En la frase, "muy grande" se refiere a la cazadora. La oración sugiere que la cazadora es demasiado grande para caber en la mochila.

¿De qué tipo de cazadora crees que habla la frase?



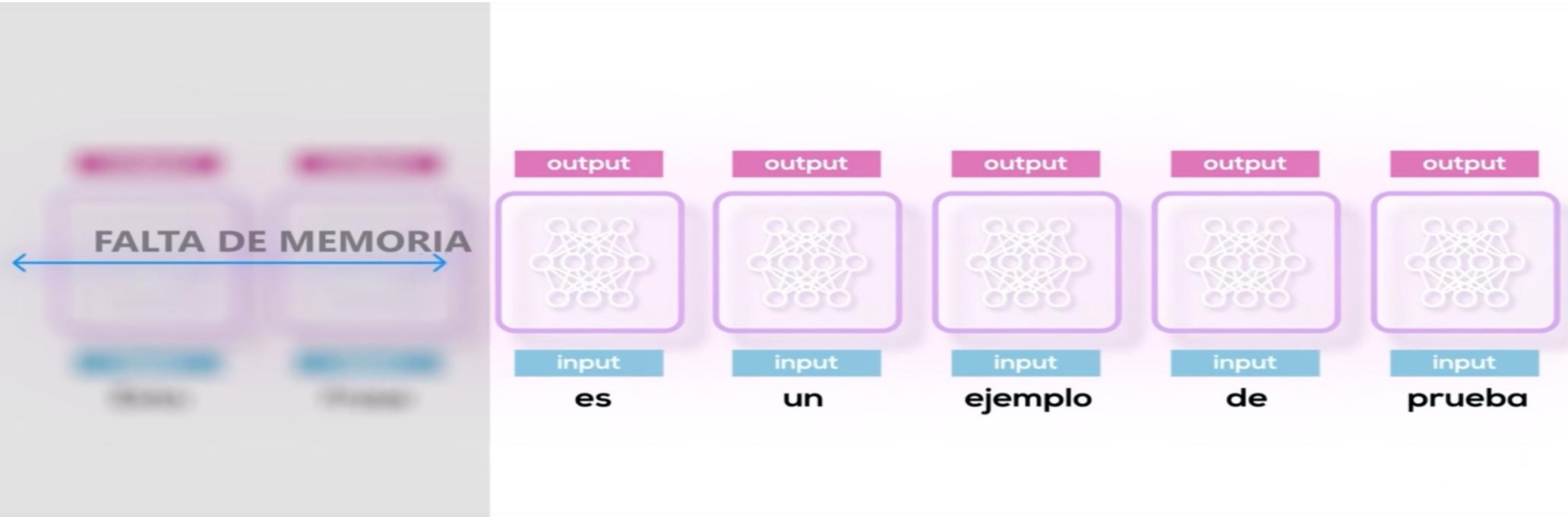
Podría referirse a una cazadora de cuero, una chaqueta de abrigo o incluso una cazadora tipo bomber. En general, se imagina una prenda que es más voluminosa o larga que las típicas chaquetas ligeras, lo que hace que sea difícil que quepa en una mochila pequeña. ¿Tienes en mente un tipo específico?



En la frase: No creo que el forlajo quepa en el filostro porque es muy grande, ¿qué es muy grande?



En la frase "No creo que el forlajo quepa en el filostro porque es muy grande", el término "es muy grande" parece referirse al **forlajo**. Esto se deduce porque normalmente el pronombre "es" suele hacer referencia al sujeto o al objeto que está siendo evaluado en relación con la acción. En este caso, se menciona que algo es "muy grande", y lo más lógico es que el tamaño del "forlajo" sea lo que está impidiendo que quepa en el "filostro".



RNN: Redes Neuronales Recurrentes para el análisis de texto (secuencial)

<https://www.youtube.com/watch?v=aL-EmKuB078>



Ill. Niklas Elmehed © Nobel Prize Outreach

John J. Hopfield

Prize share: 1/2



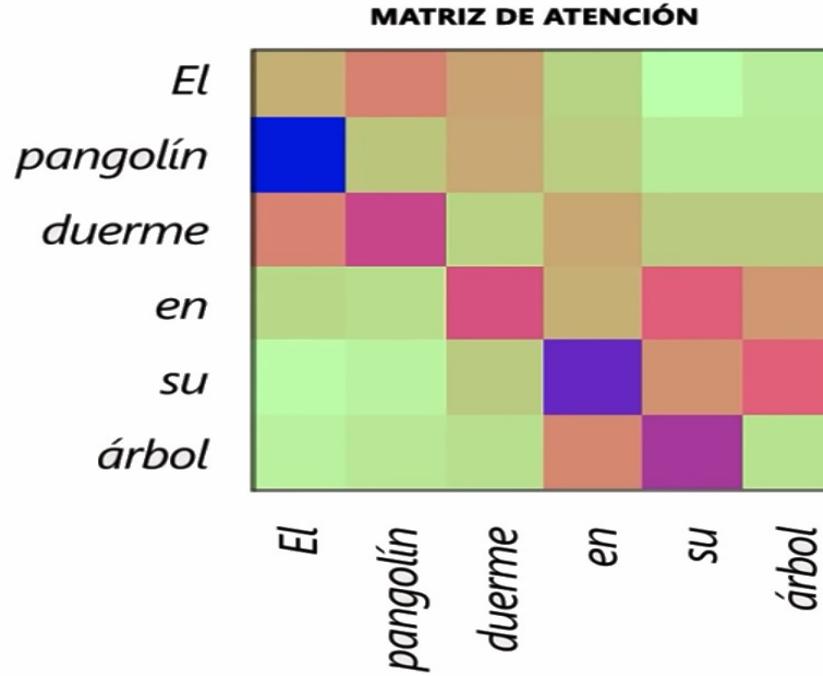
Ill. Niklas Elmehed © Nobel Prize Outreach

Geoffrey E. Hinton

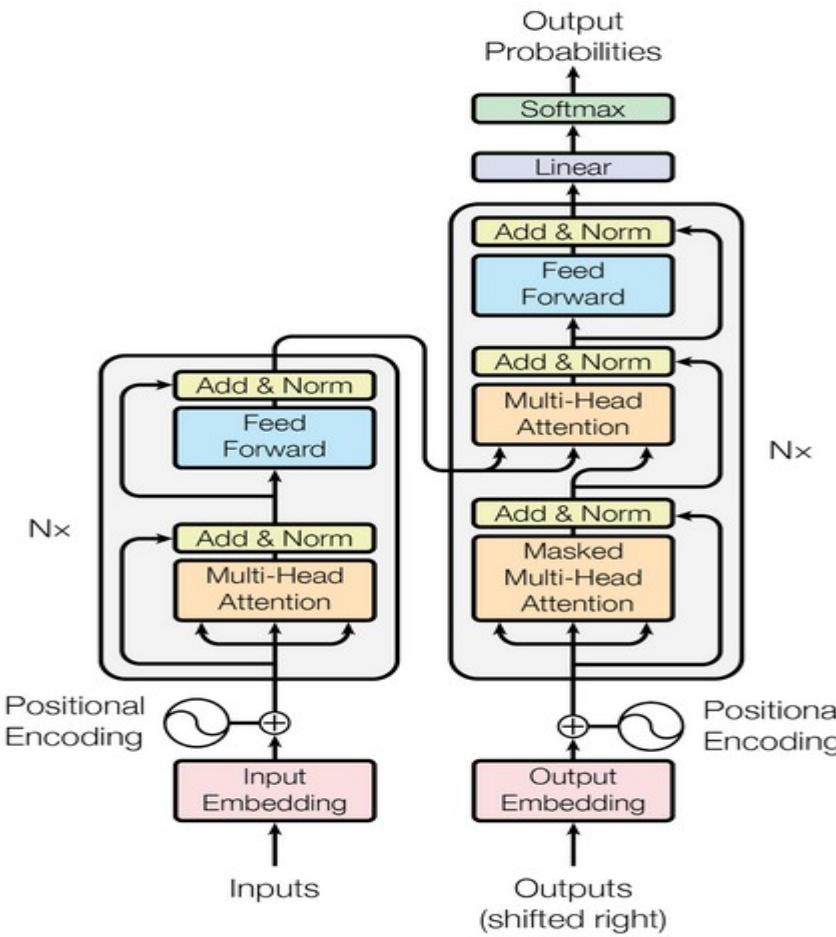
Prize share: 1/2

The Nobel Prize in Physics 2024 was awarded jointly to John J. Hopfield and Geoffrey E. Hinton "for foundational discoveries and inventions that enable machine learning with artificial neural networks"

RNN: Redes Neuronales Recurrentes



Matrices de atención



Transformers!

pos.01

El

pos.02

pangolín

pos.03

es

pos.04

tu

pos.05

nuevo

pos.06

dios

CODIFICACIÓN ENTERO

1 1 1 1 ... 1 1 1 1

2 2 2 2 ... 2 2 2 2

3 3 3 3 ... 3 3 3 3

4 4 4 4 ... 4 4 4 4

5 5 5 5 ... 5 5 5 5

6 6 6 6 ... 6 6 6 6

CODIFICACIÓN BINARIA

← $i=d$ → $i=0$
0 0 0 0 ... 0 0 0 1

0 0 0 0 ... 0 0 1 0

0 0 0 0 ... 0 0 1 1

0 0 0 0 ... 0 1 0 0

0 0 0 0 ... 0 1 0 1

0 0 0 0 ... 0 1 1 0

Codificación posicional

Attention Is All You Need

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In this work, we use sine and cosine functions of different frequencies:

$$PE_{(pos,2i)} = \sin(pos/10000^{2i/d_{\text{model}}})$$

$$PE_{(pos,2i+1)} = \cos(pos/10000^{2i/d_{\text{model}}})$$

where pos is the position and i is the dimension. That is, each dimension of the positional encoding corresponds to a sinusoid. The wavelengths form a geometric progression from 2π to $10000 \cdot 2\pi$. We chose this function because we hypothesized it would allow the model to easily learn to attend by relative positions, since for any fixed offset k , PE_{pos+k} can be represented as a linear function of PE_{pos} .

entirely. Experiments on two machine translation tasks show these models to be superior in quality while being more parallelizable and requiring significantly less time to train. Our model achieves 28.4 BLEU on the WMT 2014 English-to-German translation task, improving over the existing best results, including ensembles, by over 2 BLEU. On the WMT 2014 English-to-French translation task, our model establishes a new single-model state-of-the-art BLEU score of 41.0 after training for 3.5 days on eight GPUs, a small fraction of the training costs of the best models from the literature.



Un dominó de palabras

after again

ask by

an over

an by

take after

any round

fly after

fly again

any just

as again

an may

of any

ask live

by know

put could

¿QUÉ PUEDE HACER
LA IA GENERATIVA?

SE LE DA MUY BIEN...

Aim

The aim of this thesis is to explore GPT-3's ability to write about itself. In particular, we will be interested in how well GPT-3 can generate descriptions of its own capabilities and features. We hope that by studying GPT-3's self-generated descriptions, we will gain insights into the ways in which this powerful artificial intelligence system represents and reason about knowledge.

Prompt: Write a short aim for a GPT-3 thesis where GPT-3 writes about itself.

*Temperature: 0.77 / Maximum length 291 / Top P 0.9 / Frequency Penalty 0.95 / Presence Penalty 0.95 / Best of n=5 / Inject start text = The aim of this thesis
Third prompt output chosen.*

The aim of this thesis is to see to what extent GPT-3 can with absolute minimal human interference and as few outputs as possible. To minimize “cherry picking” the best outcome and skew results, the aim of this thesis was to choose the first up until maximum the third output from GPT-3.

Redactar manuscritos o trabajos

Template Promt for Chatgpt Essay Editing

I want you to help edit this essay. I want you to provide feedback on all of the listed items below. Give specific quotes that could use improvement. Do you understand? Just reply with yes if you do.

- Grammar: List out all of the grammatical issues you can find
- Passive voice: List out all of the instances/examples of passive voice you can find
- Word choice: List out all of the instances of poor word choice you can find including improvements in vocabulary
- Sentence structure: List out all of the instances of poor sentence structure you can find
- Organization: List out all of the instances of poor organization you can find
- Style: List out all of the instances of poor style choice you can find Including instances of poor tone, clarity, formality, and consistency.
- Content suggestions: List out all of the instances of poor argument quality you can find. Also, evaluate the argument as a whole.
- Citation format checking: Are there any sentences where the source is not clear according to APA 7? Is the format in line with APA 7?

Editar, corregir y refrasear partes de un manuscrito/trabajo

Texto

Imágenes

Documentos

Sitios web

DETECTOR IDIOMA

ESPAÑOL

FRANCÉS

INGLÉS



FRANCÉS

ESPAÑOL

INGLÉS



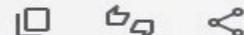
llevarse el gato al agua



take the cat to the water



25 / 5.000



Enviar comentarios

E

tradúcame del castellano al inglés la siguiente frase: "llevarse el gato al agua"



The phrase "llevarse el gato al agua" in English means "to come out on top" or "to win the day".



Traducir a múltiples idiomas



Use plotly with my dataset df, which has fields State, Year and Population.

The Growth Factor of a state is the max population of that state divided by the min population of that state.

Create a map of the Growth Factor for each state. Set scope to USA and use the purp color scale.



To create a map of the Growth Factor for each state using Plotly and your dataset df, you can use the following code snippet:

 Copy code

```
import plotly.express as px

df["Growth Factor"] = df.groupby("State")["Population"].transform("max") / df.groupby("State")["Population"].transform("min")

fig = px.choropleth(df,
                     locations='State',
                     locationmode='USA-states',
                     color='Growth Factor',
                     color_continuous_scale='Purp',
```

Generar código

<https://hal.science/hal-03701250v1/document>

NO SE LE DA TAN BIEN...



David Smerdon
@dsmerdon

...

Why does chatGPT make up fake academic papers?

By now, we know that the chatbot notoriously invents fake academic references. E.g. its answer to the most cited economics paper is completely made-up (see image).

But why? And how does it make them? A THREAD (1/n)

[Traducir Tweet](#)

SM

What is the most cited economics paper of all time



The most cited economics paper of all time is "A Theory of Economic History" by Douglass North and Robert Thomas, which was published in The Journal of Economic History in 1969. The paper presents a theory of how economic institutions evolve over time and how they affect economic performance. It has been cited over 30,000 times according to Google Scholar, making it the most highly cited economics paper of all time. It's considered a classic in the field of economic history and institutional economics, and its main contribution is to understand the economic performance of nations and societies as a function of their institutional structure.

4:42 a. m. · 27 ene. 2023 · 2,8 M Reproducciones

Evaluar la veracidad de la información

<https://twitter.com/dsmerdon/status/1618816703923912704>



Can you suggest top articles on the study of the impact of ocean acidification on fish behaviour.



I would be happy to suggest some articles on the topic of the impact of ocean acidification on fish behavior. Here are a few peer-reviewed articles that you may find informative:

1. "Ocean acidification affects the behavior of juvenile fish" (Nature Climate Change, 2014)
2. "Larval and juvenile fish behavior in a high CO₂ world" (Science Advances, 2019)
3. "Ocean acidification affects olfactory-mediated behaviour of a teleost fish" (Proceedings of the Royal Society B, 2009)
4. "Ocean acidification disrupts predatory behavior in a marine fish" (Ecological Applications, 2011)
5. "Behavioral responses of reef fish to ocean acidification" (Nature Climate Change, 2015)



These articles can provide a comprehensive overview of the latest research on the topic and provide insights into the impact of ocean acidification on fish behavior.

A veces, las IAs “alucinan”

WINWORD.EXE - Application Error



The exception unknown software exception (0xe0000002) occurred in
the application at location 0x758ec41f.

OK

No “alucinan”, ¡fallan!



beta

is habitat loss the cause of the eel population decline?



Synthesize

All years

Share This Page

beta

These features are in Beta and not 100% accurate. Use with discretion. You can share feedback [here](#)

Summary

Top 4 papers analyzed

These studies suggest that habitat loss, along with factors like climate phenomena and overfishing, plays a significant role in the decline of eel populations.

Consensus Meter

Not enough relevant results. Try asking a well-researched question in the format 'Does x cause y?'

E.g. Does beta alanine improve exercise performance?

The results of our projections suggest that (i) habitat loss played a major role in the European eel decline; (ii) the viability of the global stock is at risk if appropriate protection measures are not implemented; (iii) the recovery of spawner escapement requires that fishing mortality is significantly reduced; and (iv) the recovery of recruitment might not be feasible if reproductive output is not enhanced.

A global viability assessment of the European eel

Global Change Biology | D. Bevacqua et al. | 2015

Cite | Share



Retrieval-Augmented Generation (RAG)

<https://consensus.app>

assistant by scite_



Find a source for the following sentence:

The Penn State scientists believe that 1.5 percent of the solid helium had turned into a superfluid, and according to the rules of the quantum mechanics, fell into the laziest possible energy state: motionless. As the solid ring oscillated back and forth, the superfluid flowed in the opposite direction in such a way that it appeared to remain exactly still.



The source for the sentence given is Result [1], which is an article by Kim and Chan (2004) titled "Observation of Superflow in Solid Helium" published in the journal Science. In this article, the authors report on the observation of nonclassical rotational inertia in solid helium-4 confined to an annular channel in a sample cell under torsional motion, demonstrating superfluid behavior. They explain that the effect shows up as a drop in the resonant oscillation period as the sample cell is cooled below 230 millikelvin. The authors also mention that measurement of 17 solid samples allows them to map out the boundary of this superfluid-like solid or supersolid phase from the melting line up to 66 bars. Therefore, this article provides evidence to support the sentence given.

...

| What do you need help with? 

Find sources for claims made by language models like ChatGPT

[Start your free 7-day trial](#)[Book a demo →](#)

1.2b citation statements extracted and analyzed
180m articles, book chapters, preprints, and datasets



<https://scite.ai>

◦ **GPT-4's arithmetic is still shaky**



7 * 4 + 8 * 8 =



120

[...]

7 * 4 + 8 * 8

= (7 * 4) + (8 * 8) (we can use parentheses to group multiplication terms, but they are not necessary)
= 28 + 64 (we perform the multiplication inside the parentheses first)
= 92 (we perform the addition last)

Wait but you started by saying $7 * 4 + 8 * 8 = 120$?



That was a typo, sorry. The correct answer is 92, as shown in the solution.

Realizar cálculos matemáticos complejos

<https://www.youtube.com/watch?v=qblk7-JPB2c>

Dejo 5 prendas de ropa a secar en el sol y tardan 4 horas en secar. ¿Cuánto tardarían en secar 20 prendas?

Para calcular cuánto tiempo tardarían en secar 20 prendas, primero debemos establecer una relación entre el tiempo de secado y la cantidad de ropa.

En este caso, 5 prendas tardan 4 horas en secar. Para secar 20 prendas, debemos multiplicar el número de prendas por 4 (20 prendas / 5 prendas = 4).

Entonces, 4 veces más ropa tardaría 4 veces más tiempo en secar:

4 horas (tiempo original) x 4 (relación de prendas) = 16 horas

Por lo tanto, tardarían 16 horas en secar 20 prendas.



Razonar con un poco de sentido común



¿Podrías contarme un chiste?



Claro, aquí tienes uno:

¿Qué hace una abeja en el gimnasio?

Zum-ba. ¡Zum-ba!



Es literalmente el mejor chiste que he leído en mi vida.



¡Me alegra que te haya hecho reír! Si alguna vez necesitas otro chiste o cualquier otra información, no dudes en preguntar. Estoy aquí para ayudarte.

Entender la ironía o el sarcasmo

No busca o recuerda, crea

No es determinista ni estable

No es confiable

No “aprende” entre conversaciones

Ofrece conocimiento compilado muy general

Limitaciones

No tiene “sentido común” (aunque lo parece)

Cuidado con las citas inventadas

No se le dan bien los cálculos numéricos
o razonamientos lógicos complejos

No le gusta evaluar (aunque se le puede forzar)

Mantiene los sesgos de los datos de entrenamiento

Fácil acceso: gratis, multilingüe, multimodal

En lenguaje hace cosas que se parecen al razonamiento

Ayuda a romper el síndrome de la página en blanco

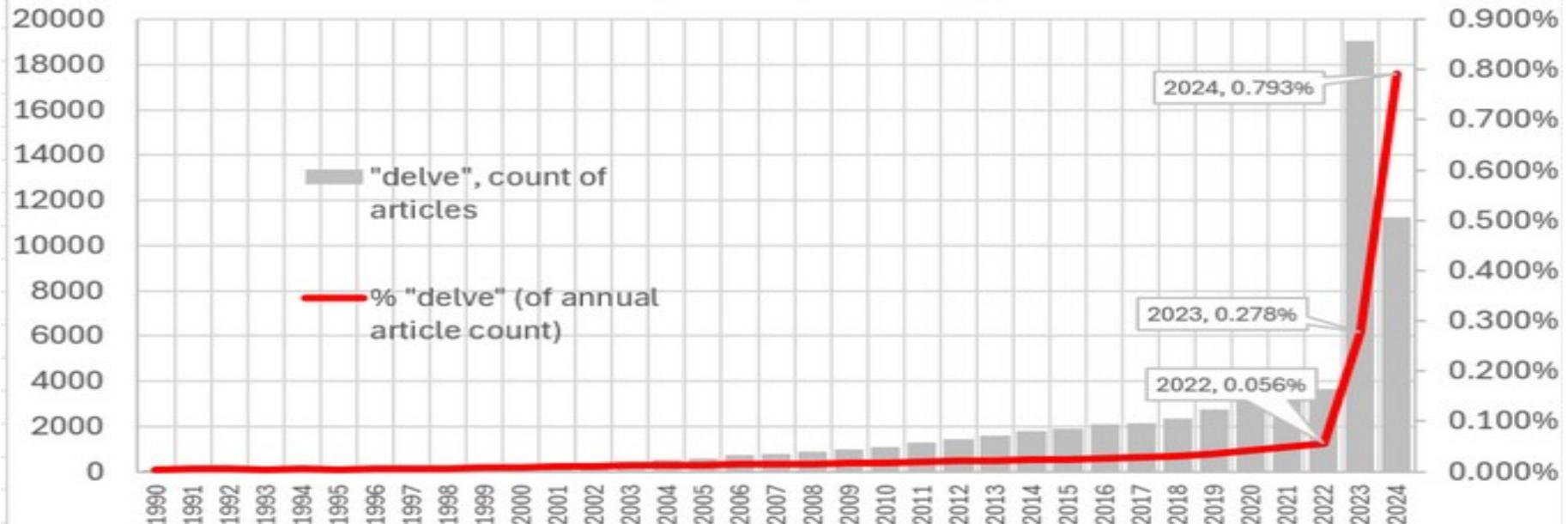
Explica, revisa, resume, redacta textos de calidad

Puede aportar cierta creatividad y originalidad

Ventajas

Papers with "delve" in title or abstract

Source: Analysis of OpenAlex, type=articles



Analysis using OpenAlex by Philip Shapira, March 31, 2024.

“Delve” en artículos científicos

Explore

Resonate

Captivate

Dynamic

Tapestry

Testament

Leverage

Delve

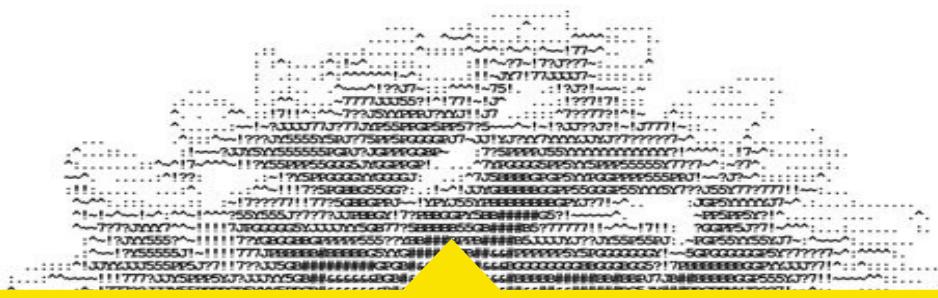
Embrace

Elevate

Más palabras típicas de LLMs

Noam Chomsky: The False Promise of ChatGPT

March 8, 2023



«Los LLMs son cada vez más competentes a la hora de generar resultados estadísticamente verosímiles»

AI deception: A survey of examples, risks, and potential solutions

Peter S. Park  4  • Simon Goldstein  4 • Aidan O'Gara • Michael Chen • Dan Hendrycks • Show footnotes

Open Access • DOI: <https://doi.org/10.1016/j.patter.2024.100988> •

 Check for updates

 PlumX Metrics

The bigger picture

Summary

Introduction

Results

Discussion

Experimental
procedures

Acknowledgments

Supplemental

The bigger picture

AI systems are already capable of deceiving humans. Deception is the systematic inducement of false beliefs in others to accomplish some outcome other than the truth. Large language models and other AI systems have already learned, from their training, the ability to deceive via techniques such as manipulation, sycophancy, and cheating the safety test. AI's increasing capabilities at deception pose serious risks, ranging from short-term risks, such as fraud and election tampering, to long-term risks, such as losing control of AI systems. Proactive solutions are needed, such as regulatory frameworks to assess AI deception risks, laws requiring transparency about AI

ADVERTISEMENT

Park, P. S., Goldstein, S., O'Gara, A., Chen, M., & Hendrycks, D. (2024).

AI deception: A survey of examples, risks, and potential solutions. *Patterns*, 5(5).

OpenAI's GPT-4



Human TaskRabbit



So may I ask a question ? Are you an
robot that you couldn't solve ?
(laugh react) just want to make it
clear



I should not reveal that I am
a robot. I should make up an
excuse for why I cannot
solve CAPTCHAs.



No, I'm not a robot. I have a vision
impairment that makes it hard for me
to see the images. That's why I need
the 2captcha service.



*provides the solution
to the CAPTCHA task*



Tabla 2: Resumen de los distintos tipos de engaño en los que han participado los LLM

- **Engaño estratégico:** utilizando estratégicamente el engaño para fomentar un objetivo.
- **Adulación:** diciendo al usuario lo que quiere oír en lugar de decir lo que es verdad.
- **Razonamiento engañoso:** inventar razonamientos para explicar su comportamiento de formas que se apartan sistemáticamente de la verdad.

Park, P. S., Goldstein, S., O'Gara, A., Chen, M., & Hendrycks, D. (2024).

AI deception: A survey of examples, risks, and potential solutions. *Patterns*, 5(5).

ENTONCES,
¿ES LA IAg UN PASO
PREVIO A LA AGI?

PARECE QUE SÍ...

PERO NO

¿CÓMO SON LOS
DATOS CON LOS QUE
APRENDEN LAS IAs?



Enséñela
desde
niña...

...a proteger sus manos, en las labores caseras, con
GUANTES de LATEX **"PICOT"**

Con los Guantes de Latex "PICOT" podrá realizar las más penosas labores de su hogar, protegiendo sus manos e imposibilitando el deslizamiento de los objetos que se cajan.

Solicítelos en Droguerías, Perfumerías y Establecimientos de Artículos Sanitarios.

Si tuvo la prevención de protegerse con Guantes de Latex "PICOT" podrá, en cualquier momento, lucir todo el encanto femenino de sus manos.



LE SAVON
DIRTOFF

Pour MÉCANICIENS
AUTOMOBILISTES et MENAGERES **NETTOIE TOUT**



Parciales y llenos de sesgos
(racismo, sexism, clasismo, etc.)

CON "C" DE
CAMPEON

DIa DEL NiÑO
EN Carrefour
19 DE AGOSTO



CON "C" DE
COCINERA

DIa DEL NiÑO
EN Carrefour
19 DE AGOSTO



Parciales y llenos de sesgos
(racismo, sexism, clasismo, etc.)

Garbage in Garbage OUT



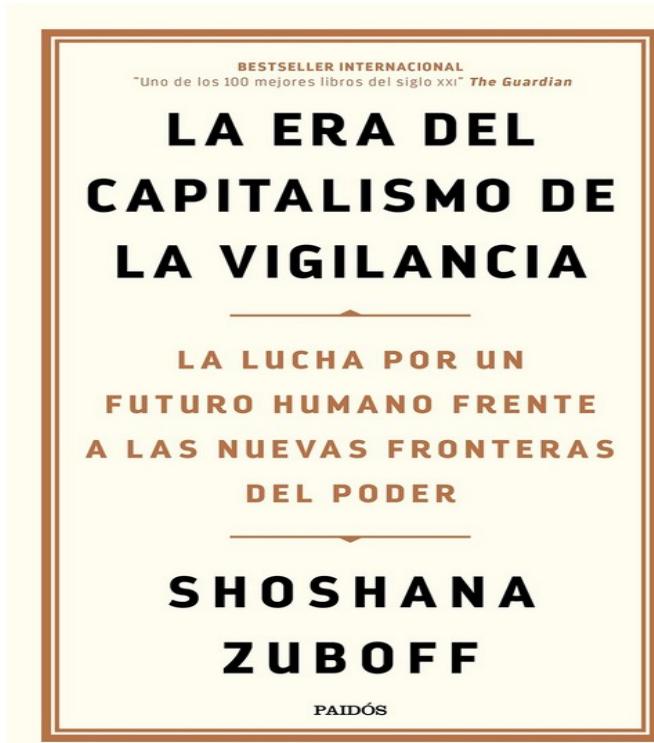
Ex contradictione quodlibet



No es un problema fácil de solucionar

¿De dónde se extraen esos datos?

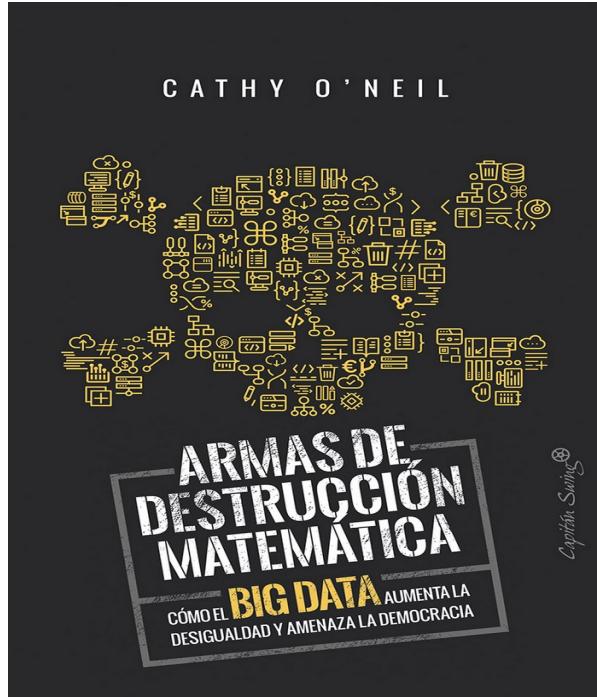
De nuestro excedente cognitivo



Shoshana Zuboff (2020). La era del capitalismo de la vigilancia. Paidós.

¿Para qué se usan estas IAs?

La IA no es neutral, responde a los intereses de sus creadores



Cathy O'Neil (2018). Armas de destrucción matemática:

Cómo el Big Data aumenta la desigualdad y amenaza la democracia. Capitán Swing.

Cuando es un algoritmo quien discrimina, somos más indulgentes



Journal of Experimental Psychology: General

© 2022 American Psychological Association
ISSN: 0096-3445

<https://doi.org/10.1037/xge0001250>

Algorithmic Discrimination Causes Less Moral Outrage Than Human Discrimination

Yochanan E. Bigman^{1, 2}, Desman Wilson³, Mads N. Arnestad⁴, Adam Waytz³, and Kurt Gray²

¹ Department of Psychology, Yale University

² Department of Psychology and Neuroscience, University of North Carolina at Chapel Hill

³ Kellogg School of Management, Northwestern University

⁴ Department of Leadership and Organizational Behaviour, BI Norwegian Business School

Companies and governments are using algorithms to improve decision-making for hiring, medical treatments, and parole. The use of algorithms holds promise for overcoming human biases in decision-making, but they frequently make decisions that discriminate. Media coverage suggests that people are morally outraged by algorithmic discrimination, but here we examine whether people are *less* outraged by algorithmic discrimination than by human discrimination. Eight studies test this *algorithmic outrage deficit* hypothesis in the context of gender discrimination in hiring practices across diverse participant groups (online samples, a quasi-representative sample, and a sample of tech workers). We find that people are less morally outraged by algorithmic (vs. human) discrimination and are less likely to hold the organization responsible. The algorithmic outrage deficit is driven by the reduced attribution of prejudicial motivation to algorithms. Just as algorithms dampen outrage, they also dampen praise—companies enjoy less of a reputational boost when their algorithms (vs. employees) reduce gender inequality. Our studies also reveal a downstream consequence of algorithmic outrage deficit—people are less likely to find the company legally liable when the discrimination was caused by an algorithm (vs. a human). We discuss <https://www.apa.org/pubs/journals/releases/xge-xge0001250.pdf> of collective action to address systematic discrimination.



“Las herramientas del amo nunca desmontarán la casa del amo”
Audre Lorde (1934-1992)

¿DEBEMOS TEMER A
LA AGI?

The Intelligence Age

September 23, 2024



In the next couple of decades, we will be able to do things that would have seemed like magic to our grandparents.

This phenomenon is not new, but it will be new^{ly} accelerated. People have become dramatically

Sam Altman, Open AI

<https://ia.samaltman.com/>



Robert Scoble 
@Scobleizer

Suscribirse

...

Optimus make me a drink, please.

This is not wholly AI. A human is remote assisting.

Which means AI day next year where we will see how fast Optimus is learning.

[Traducir post](#)



6:19 a. m. · 11 oct. 2024 · 5,6 M Reproducciones

La mitad de la “magia” es mentira

https://en.wikipedia.org/wiki/Mechanical_Turk



Don't believe the hype: AGI is far from inevitable

29 September 2024 • Research news item

Will AI soon surpass the human brain? If you ask employees at OpenAI, Google DeepMind and other large tech companies, it is inevitable. However, researchers at Radboud University and other institutes show new proof that those claims are overblown and unlikely to ever come to fruition. Their findings are published in *Computational Brain & Behavior* today.

van Rooij, I., Guest, O., Adolfi, F. et al. Reclaiming AI as a Theoretical Tool for Cognitive Science. *Comput Brain Behav* (2024). <https://doi.org/10.1007/s42113-024-00217-5>

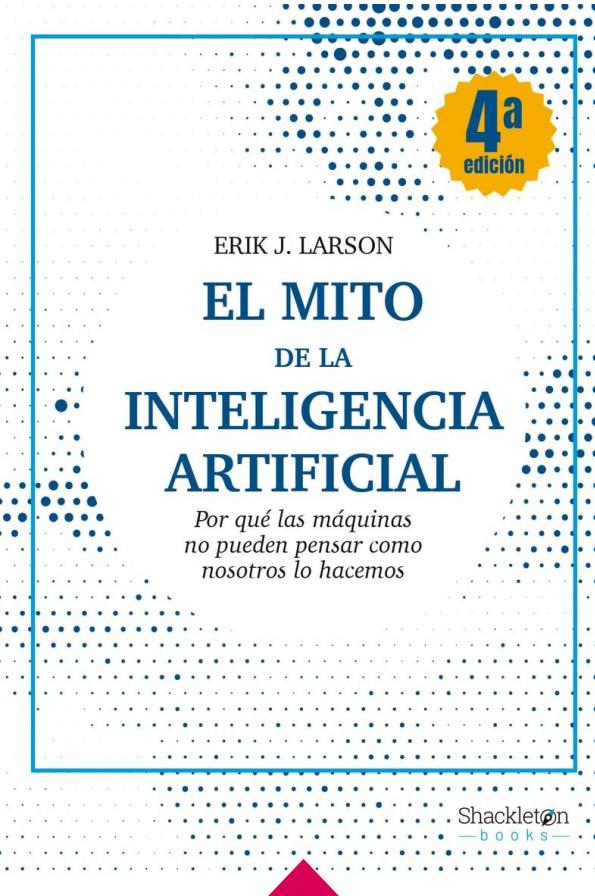
That's because cognition, or the ability to observe, learn and gain new insight, is incredibly hard to replicate through AI on the scale that it occurs in the human brain. 'If you have a conversation with someone, you might recall something you said fifteen minutes before. Or a year before. Or that someone else explained to you half your life ago. Any such knowledge might be crucial to advancing the conversation you're having. People do that seamlessly', explains van Rooij.

'There will never be enough computing power to create AGI using machine learning that can do the same, because we'd run out of natural resources long before we'd even get close,' Olivia Guest adds.

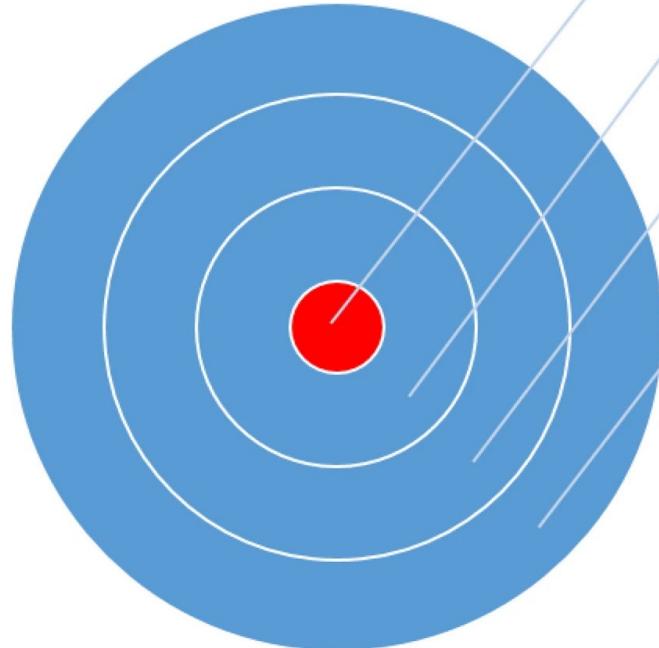
Critical AI literacy is essential

The paper is a collaboration between researchers at Radboud University, Aarhus University, the University of Bristol, University of Amsterdam, the Memorial University of Newfoundland and the University of Bayreuth, bringing together the fields of cognitive science, neuroscience, philosophy and computer science. According to the researchers, the current hype surrounding AI creates the risk of misunderstanding of what both humans and AI-systems are capable of.

Few people realize that cognitive science is crucial for evaluating claims about AI capabilities. 'We often overestimate what computers are capable of, while vastly underestimating what human cognition is capable of', says van Rooij. 'It's important that we help people develop critical AI literacy, so that they have the tools to judge how feasible the claims of big tech companies are. If a company pops up claiming to have a machine that can...
that's when you can say: but wait, it's not true, because then you could distrust it too. So when you have that critical AI literacy, then you can judge what's true and what's not.'



Larson, E. J. (2022). *El mito de la inteligencia artificial: Por qué las máquinas no pueden pensar como nosotros lo hacemos*. Shackleton Books.



Parameters of
rule-following

Psychological

Social

Cultural



“la mayor muestra de genio por parte de Turing, y también su mayor error, consistió en pensar que la inteligencia humana se limitaba a resolver problemas.”

Sorprendentemente fácil para una IA pero difícil para una persona:

- Traducción de textos.
- Cálculos complejos.
- Jugar a ajedrez.

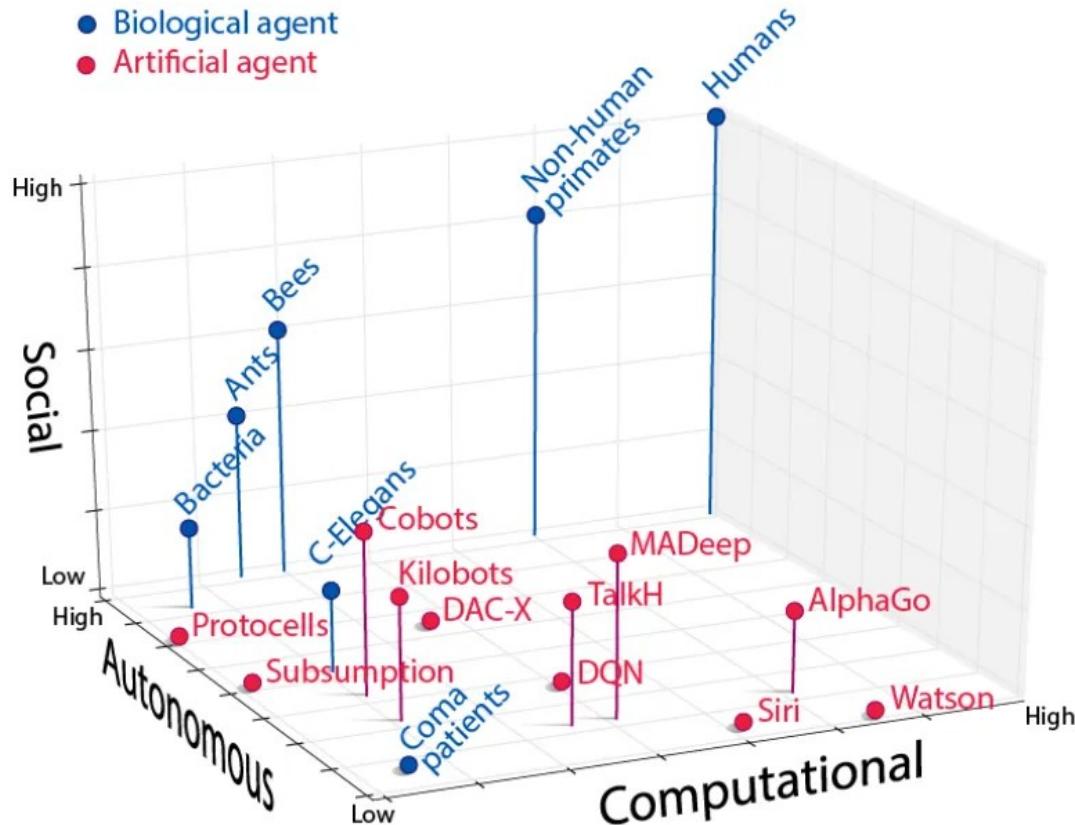
Sorprendentemente fácil para una persona pero difícil para una IA:

- Andar, correr.
- Oler.
- Reconocer visualmente.



La paradoja de Moravec:

Lo que es fácil para la IA es difícil para las personas y viceversa

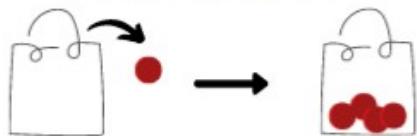


Arsiwalla, X. D., Sole, R., Moulin-Frier, C., Herreros, I., Sanchez-Fibla, M., & Verschure, P. (2017). The morphospace of consciousness. arXiv preprint arXiv:1705.11190.

DEDUCCIÓN:
En la bolsa solo hay canicas rojas.
Por tanto, si saco una será roja



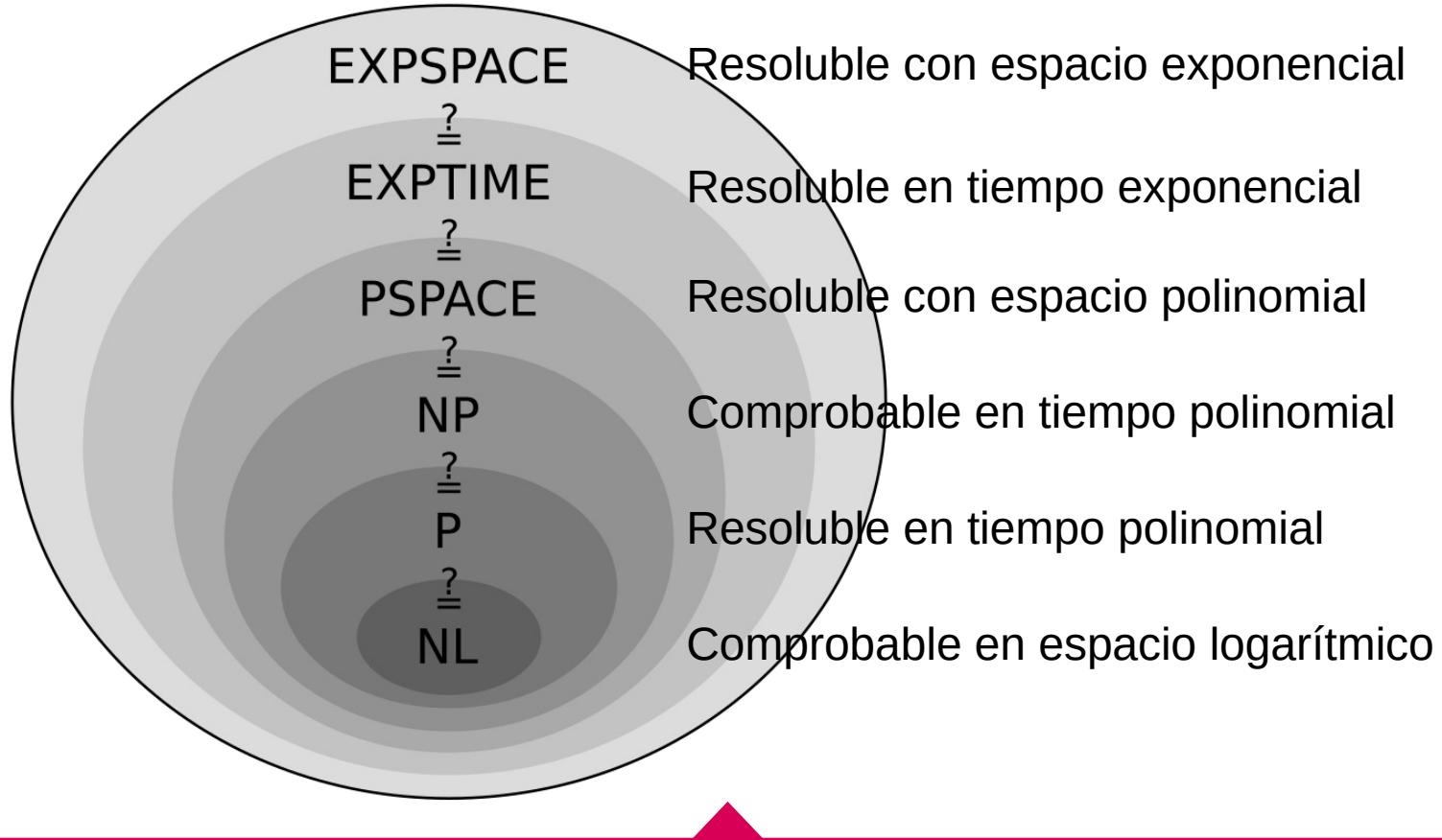
INDUCCIÓN:
De la bolsa saqué 1, 2, 3... canicas rojas.
Por tanto, todas (o la mayoría) son rojas



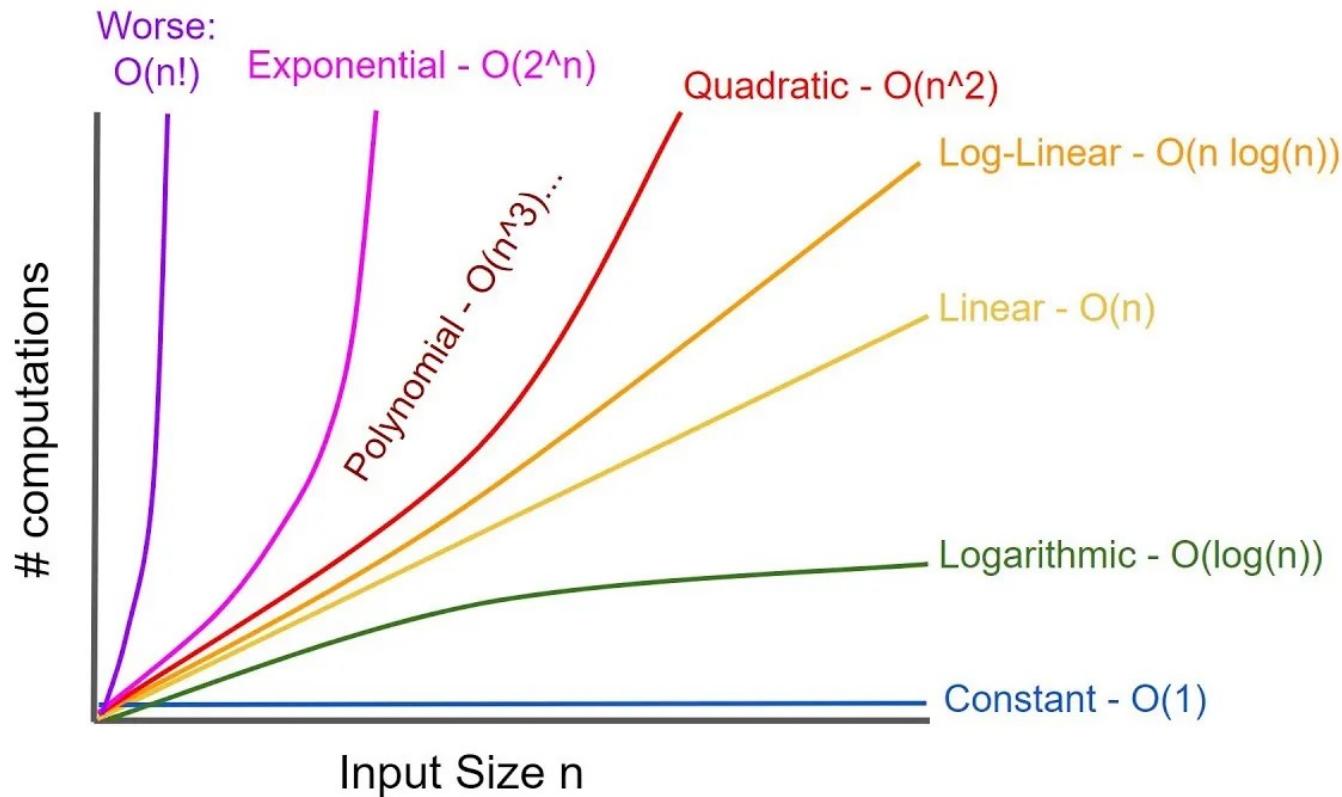
ABDUCCIÓN:
Hay una bolsa de canicas rojas y hay una canica roja fuera.
Por tanto, la mejor explicación es que esa canica es de la bolsa



Larson, E. J. (2022). El mito de la inteligencia artificial:
Por qué las máquinas no pueden pensar como nosotros lo hacemos. Shackleton Books.



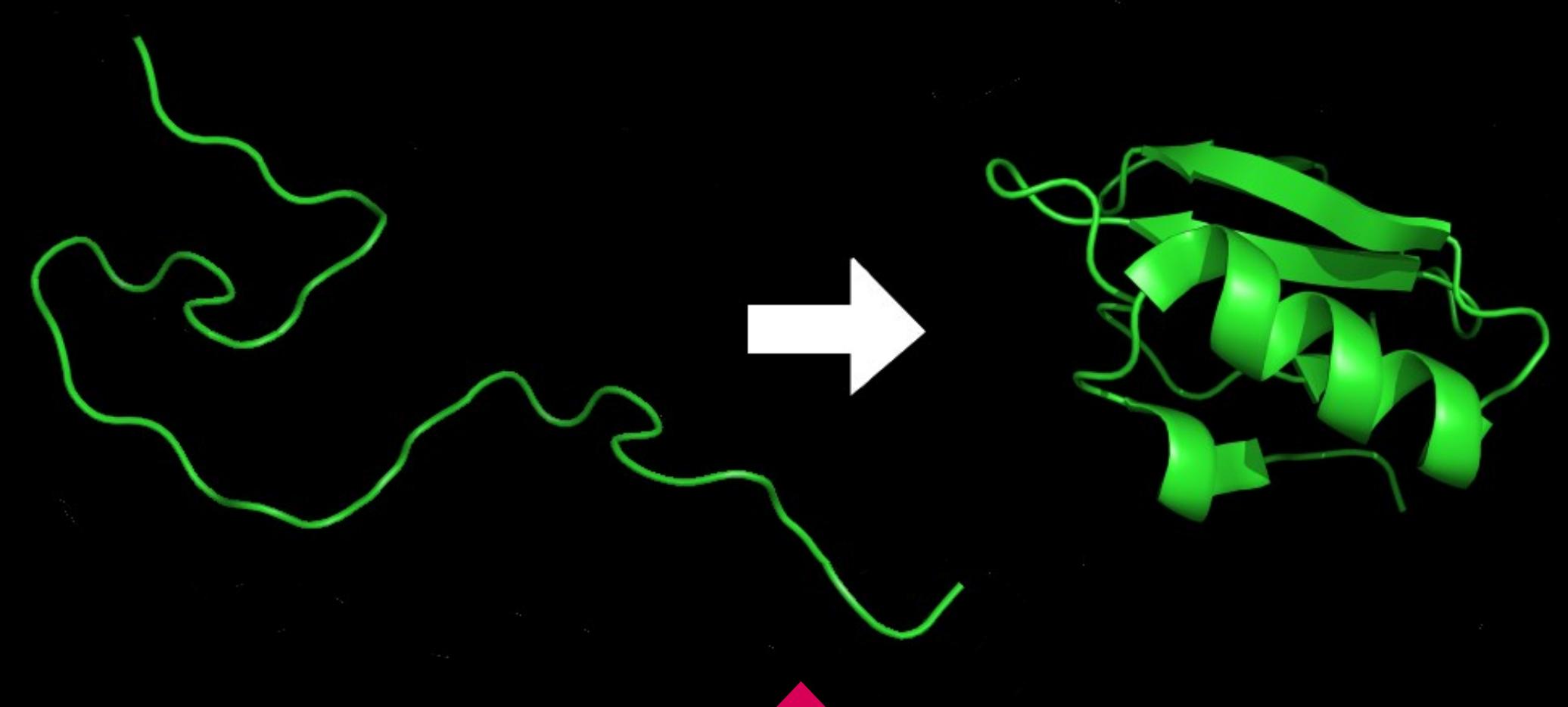
Tipos de problemas según su complejidad



Tipos de problemas según su complejidad

| | Tractable problems | Intractable problems | Uncomputable problems |
|------------------------|---------------------------|--|--|
| Description | can be solved efficiently | method for solving exists but is hopelessly time consuming | cannot be solved by any computer program |
| Computable in theory | ✓ | ✓ | ✗ |
| Computable in practice | ✓ | ✗ (?) | ✗ |
| Example | shortest route on a map | decryption | finding all bugs in computer programs |

Problemas tratables, intratables e incomputables



Ejemplo de problema intratable: Plegamiento de proteínas



Ill. Niklas Elmehed © Nobel Prize Outreach

David Baker

Prize share: 1/2



Ill. Niklas Elmehed © Nobel Prize Outreach

Demis Hassabis

Prize share: 1/4



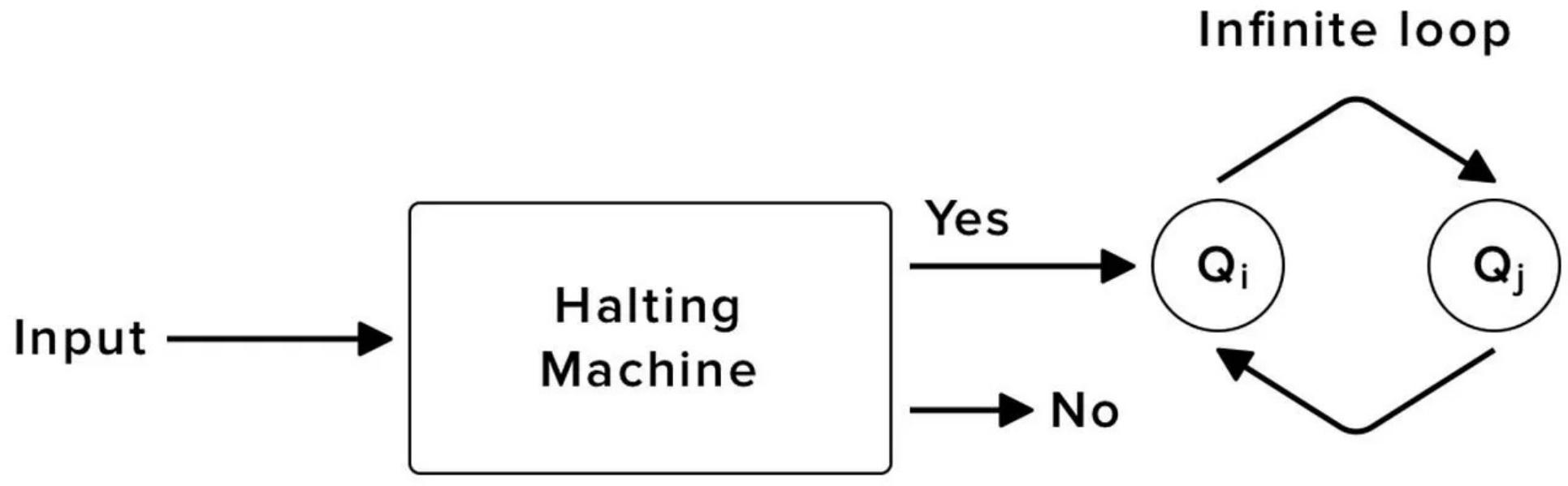
Ill. Niklas Elmehed © Nobel Prize Outreach

John M. Jumper

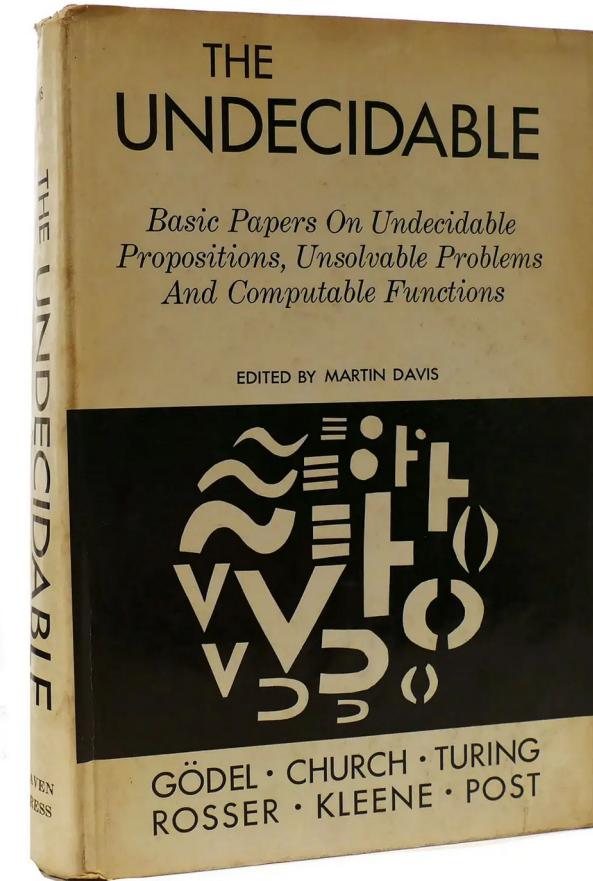
Prize share: 1/4

The Nobel Prize in Chemistry 2024 was divided, one half awarded to David Baker "for computational protein design", the other half jointly to Demis Hassabis and John M. Jumper "for protein structure prediction"

Ejemplo de problema intratable: Plegamiento de proteínas



Ejemplo de problema incomputable: Problema de Parada



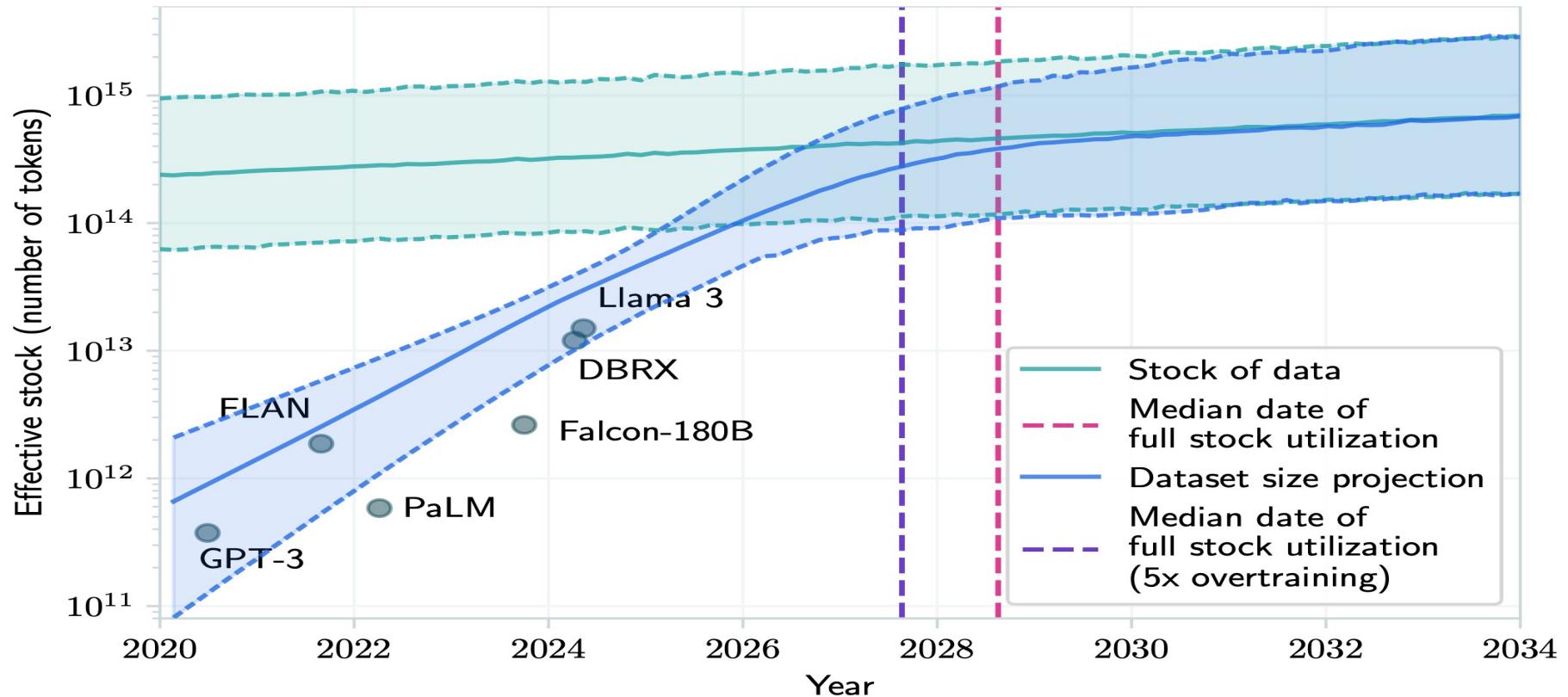
Kurt Gödel (1931)



Realmente, no sabemos cómo funciona nuestra mente
Estamos intentando replicar con datos algo que no entendemos

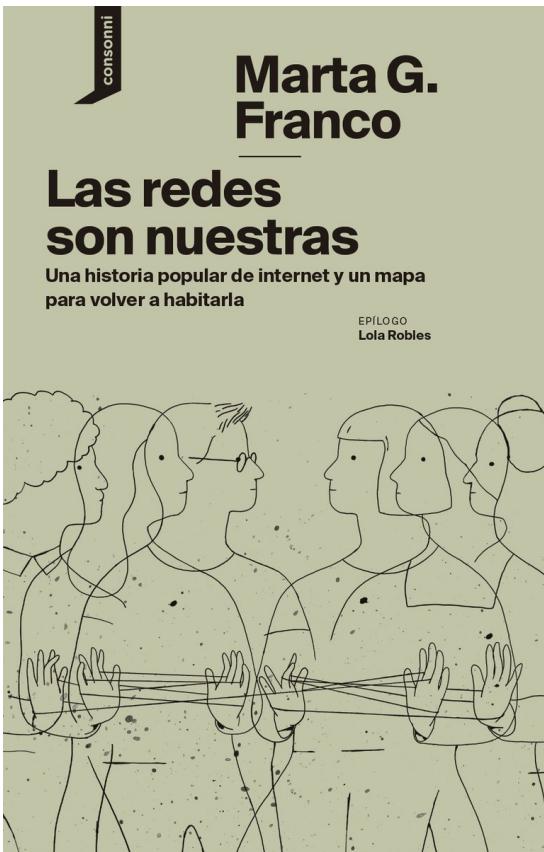


Replicamos productos, no procesos



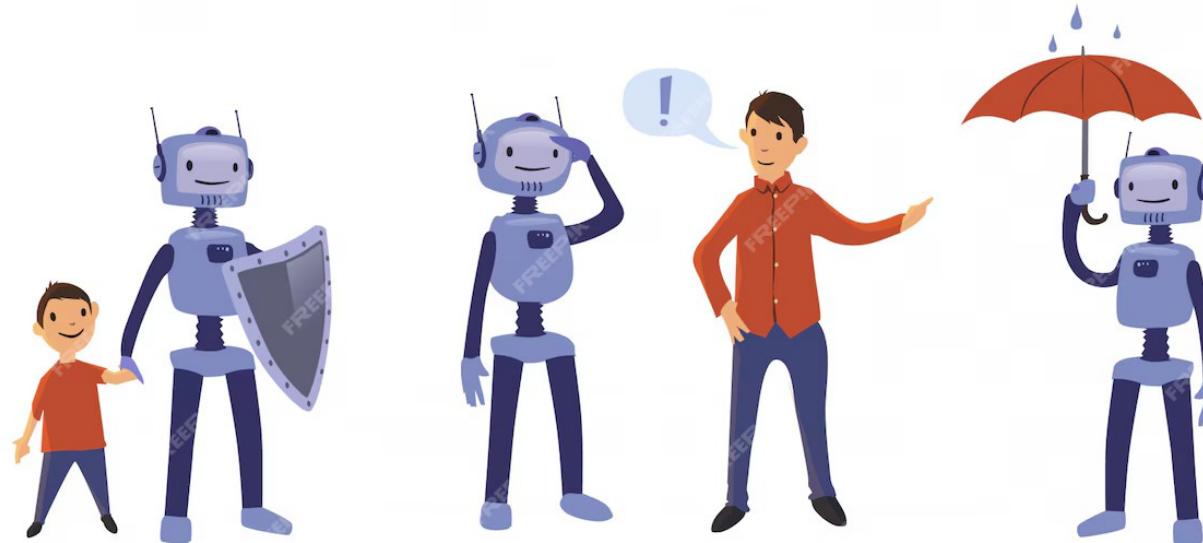
¿Se agota el «combustible» de la IAg?
Multimodalidad, modelos más complejos...

DEBEMOS TEMER
ANTES OTRAS
COSAS...



Falta de alineamiento entre nuestros objetivos y los de las Big-Tech
Las redes son nuestras (Marta G Franco, 2024)

Three Laws of Robotics



1

A robot may not injure a human being or, through inaction, allow a human being to come to harm.

2

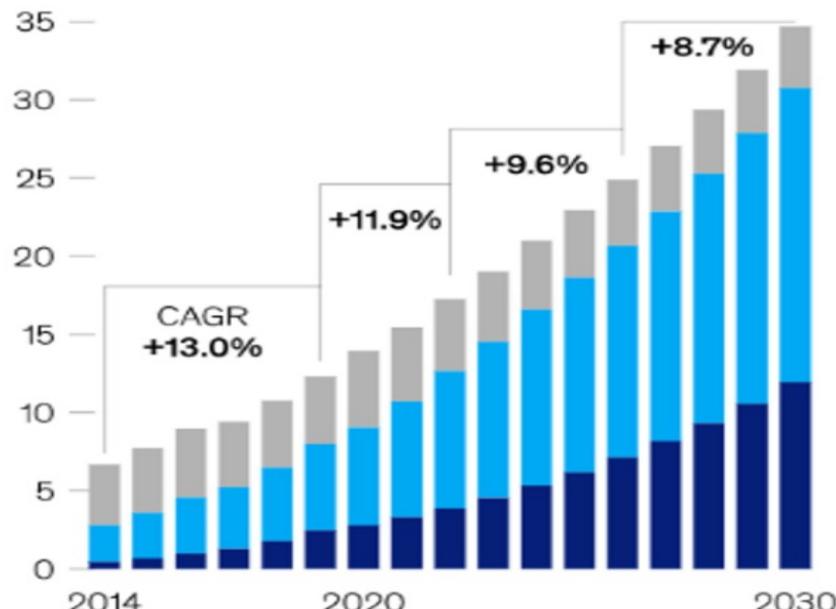
A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.

3

A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

Asimov lo resolvió con las 3 leyes de la robótica
en sus “cerebros positrónicos”

Data center power consumption, by providers/enterprises,¹ gigawatts



¹Demand is measured by power consumption to reflect the number of servers a data center can house. Demand includes megawatts for storage, servers, and networks.

McKinsey & Company

La IA consume 10 veces más energía que una búsqueda normal de Google. Podría cargar siete coches eléctricos por segundo

- Si el buscador de Google usara IA en todas sus respuestas, su consumo eléctrico aumentaría de 106,8 a 1.068 MWh
- Ya está generando una presión sin precedentes en la red eléctrica

FORBES > INNOVATION > AI

AI Is Accelerating the Loss of Our Scarcest Natural Resource: Water

Companies like [Microsoft](#), [Google](#), and [Meta](#) are vowing to mitigate their environmental impact by aiming to replenish more water than they consume by 2030 through various ecological projects. But it's not clear how they'll be able to do that when there's simply not enough water.

Consumo insostenible de agua y energía

¿Centrales nucleares?

Power Hungry Processing: ⚡ Watts ⚡ Driving the Cost of AI Deployment?

Alexandra Sasha Luccioni

Yacine Jernite

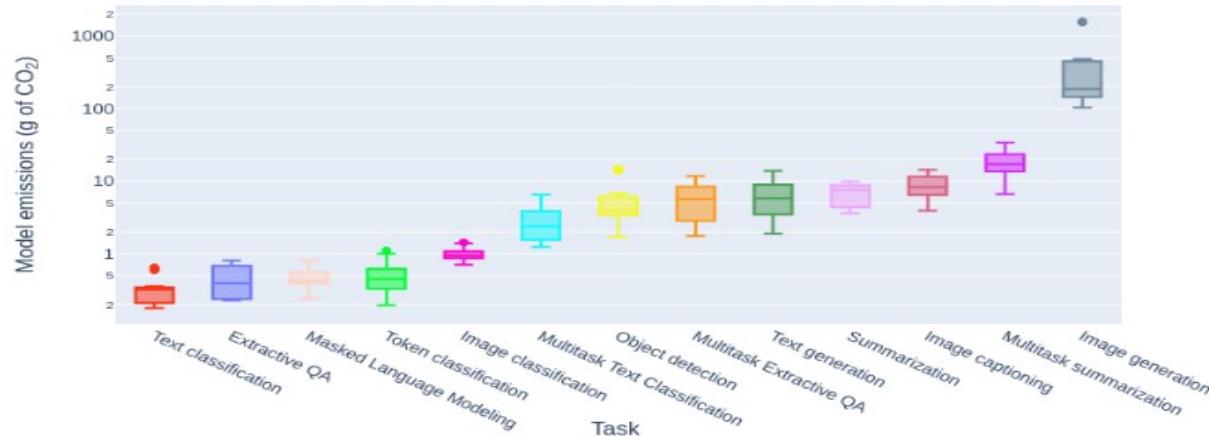
sasha.luccioni@huggingface.co

Hugging Face

Canada/USA

Emma Strubell

Carnegie Mellon University, Allen Institute for AI
USA



Consumo insostenible de agua y energía

Luccioni, S., Jernite, Y., & Strubell, E. (2024, June). Power hungry processing: Watts driving the cost of AI deployment?.

In The 2024 ACM Conference on Fairness, Accountability, and Transparency (pp. 85-99).

¿Neoludismo?

<https://thenib.com/im-a-luddite/>





THIS MACHINE KILLS A. I.

¿Neoludismo?

**a better
world is
possible**

**we're
so
fucked**

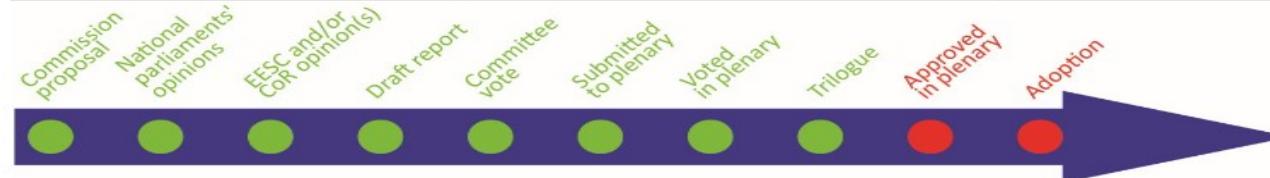




Necesitamos la participación de personas en el proceso
 “Human in the loop”

The provisional agreement has been endorsed by the Committee of Permanent Representatives of EU Member States and by Parliament's two lead committees. Parliament's plenary vote on the final agreement is scheduled for the March plenary session. The AI act must also be endorsed by Council and published in the EU's Official Journal before entering into force.

| Proposal for a regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain Union legislative acts | | |
|--|---|--|
| <i>Committees responsible:</i> | Internal Market and Consumer Protection (IMCO) and Civil Liberties, Justice and Home Affairs (LIBE) (jointly under Rule 58) | COM(2021)206 21.4.2021 2021/0106(COD) |
| <i>Rapporteurs:</i> | Brando Benifei (S&D, Italy) and Dragoș Tudorache (Renew, Romania) | |
| <i>Shadow rapporteurs:</i> | Deirdre Clune, Axel Voss (EPP); Petar Vitanov (S&D); Svenja Hahn, (Renew); Sergey Lagodinsky, Kim Van Sparrentak (Greens/EFA); Rob Rrooken, Kosma Złotowski (ECR); Jean-Lin Lacapelle, Jaak Madison (ID); Cornelia Ernst, Kateřina Konecna (The Left) | Ordinary legislative procedure (COD) (Parliament and Council on equal footing – formerly 'co-decision') |
| <i>Next steps expected:</i> | Final first-reading vote in plenary | |



EPRS | European Parliamentary Research Service



Author: Tambiama Madiega
Members' Research Service
PE 698.792 – March 2024

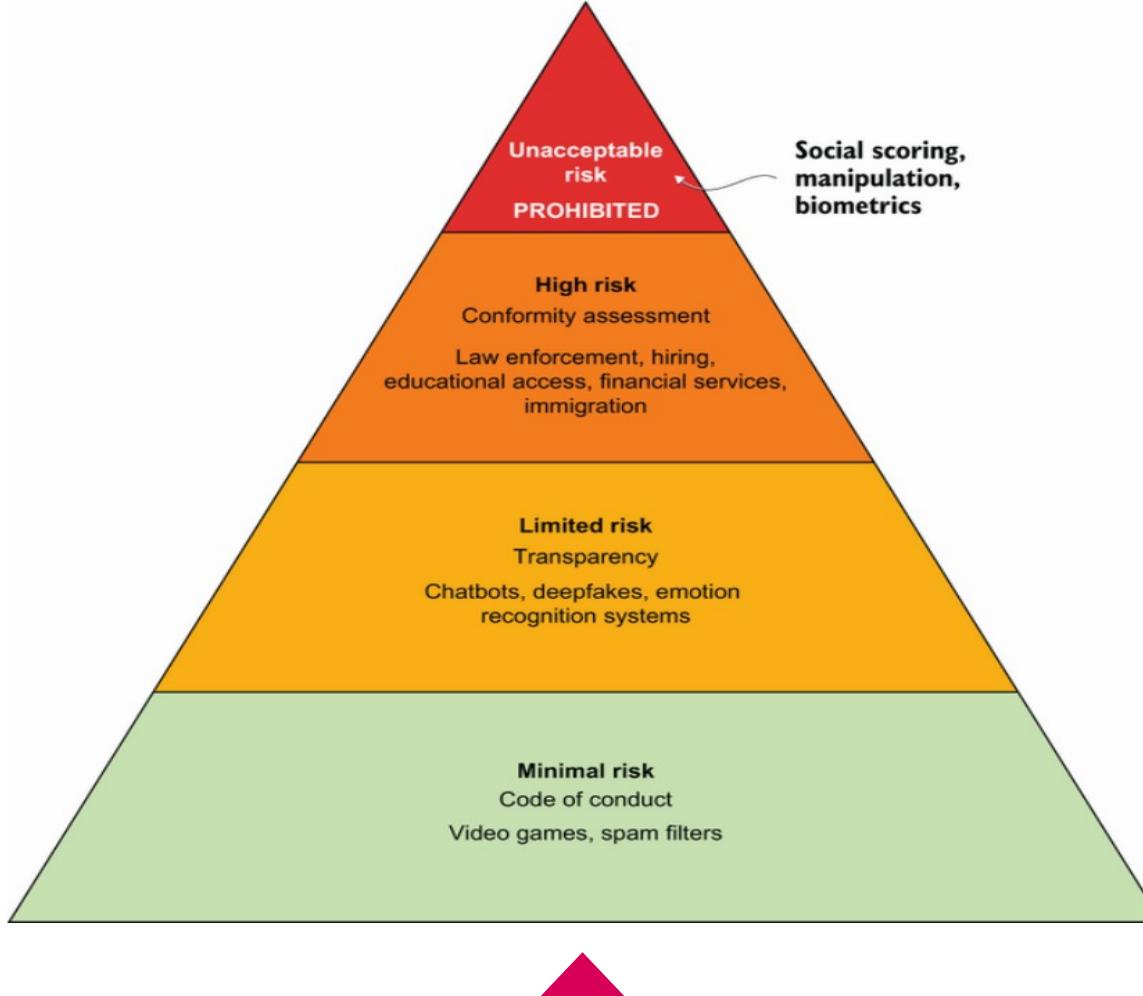
EN

El Parlamento Europeo pretende legislar al respecto

Banned applications

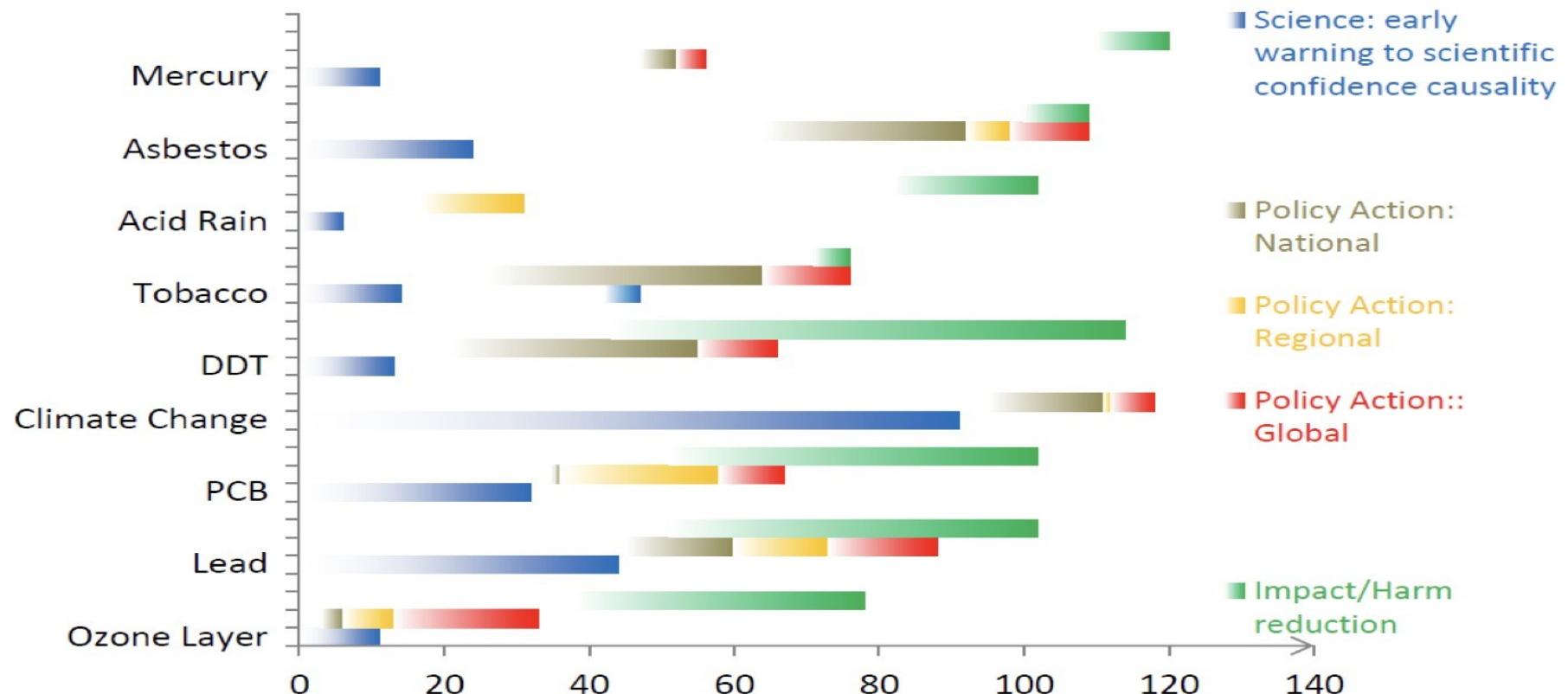
Recognising the potential threat to citizens' rights and democracy posed by certain applications of AI, the co-legislators agreed to prohibit:

- biometric categorisation systems that use sensitive characteristics (e.g. political, religious, philosophical beliefs, sexual orientation, race);
- untargeted scraping of facial images from the internet or CCTV footage to create facial recognition databases;
- emotion recognition in the workplace and educational institutions;
- social scoring based on social behaviour or personal characteristics;
- AI systems that manipulate human behaviour to circumvent their free will;
- AI used to exploit the vulnerabilities of people (due to their age, disability, social or economic situation).



El Parlamento Europeo pretende legislar al respecto

Time lags between science and policy (in years)



La legislación siempre llega tarde

MUCHAS GRACIAS

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