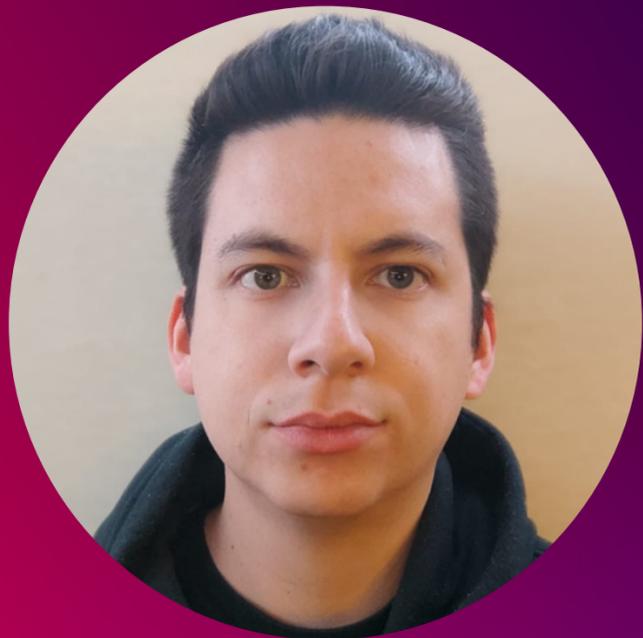


# ¿QUÉ ES LA INTELIGENCIA ARTIFICIAL?



 my future-AI

## Benjamín González Guerrero

- CEO & Chief Scientific Officer Myfuture-AI
- Científico de Datos
- Machine Learning Engineer
- Profesor
- Investigador
- Founder

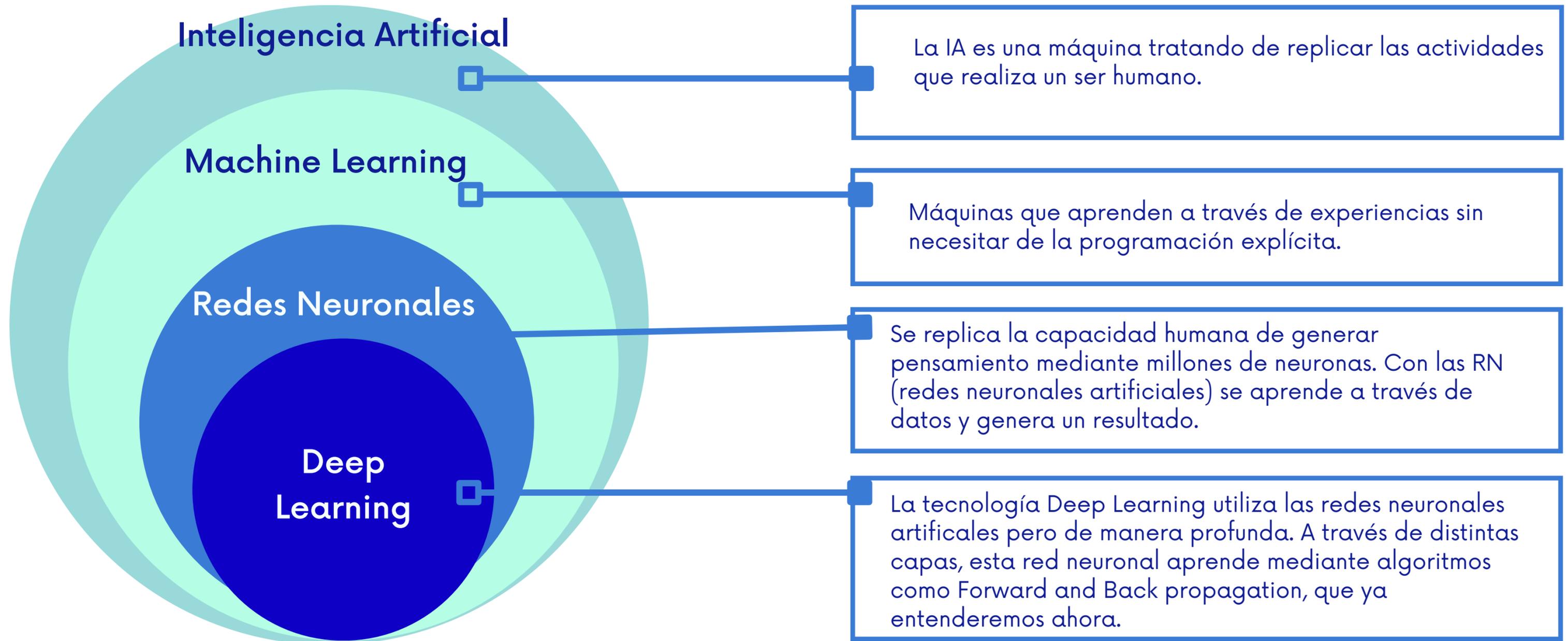


benja-myfuture-ai

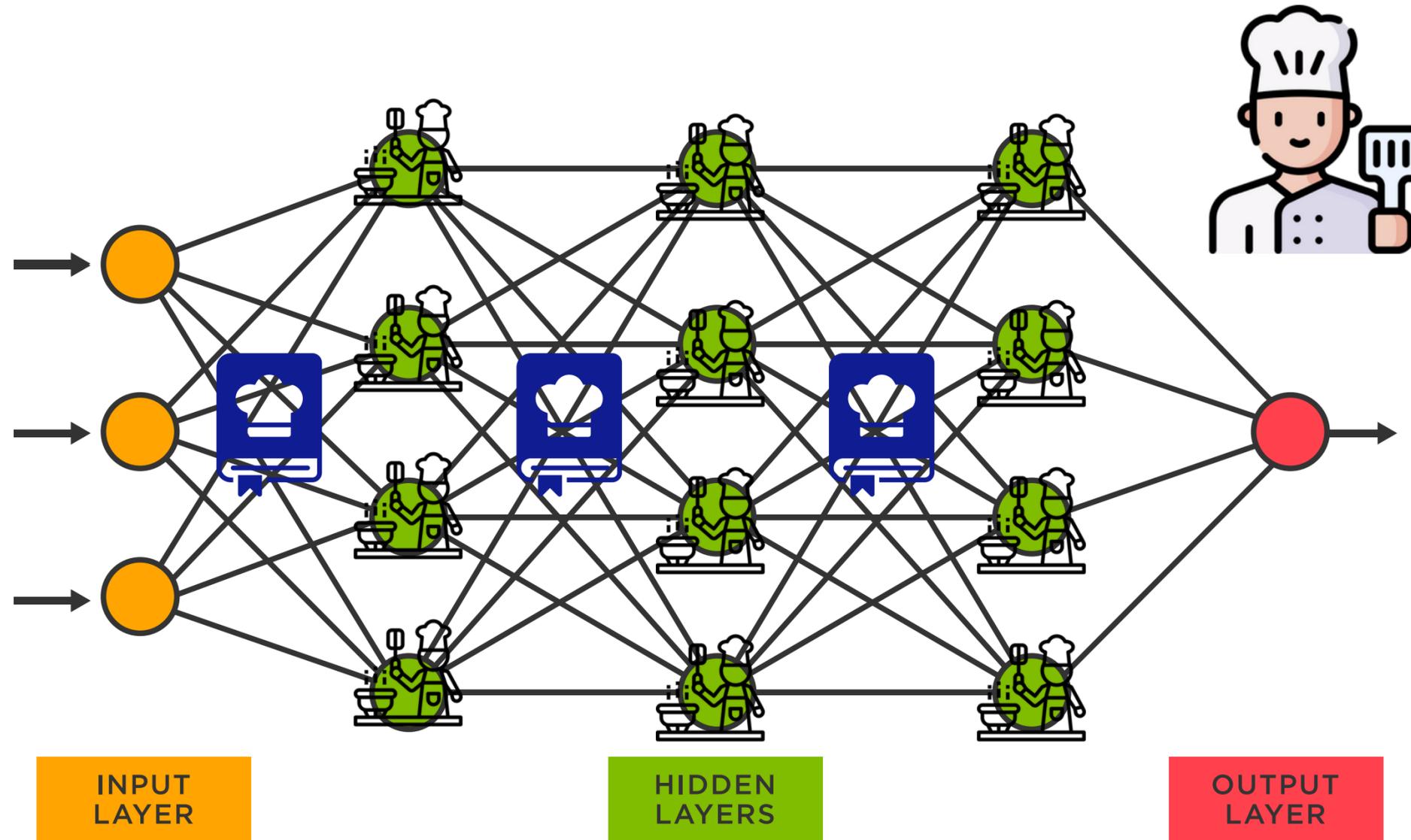


bgonzalez@myfuture.ai

# IA, MACHINE Y DEEPLARNING



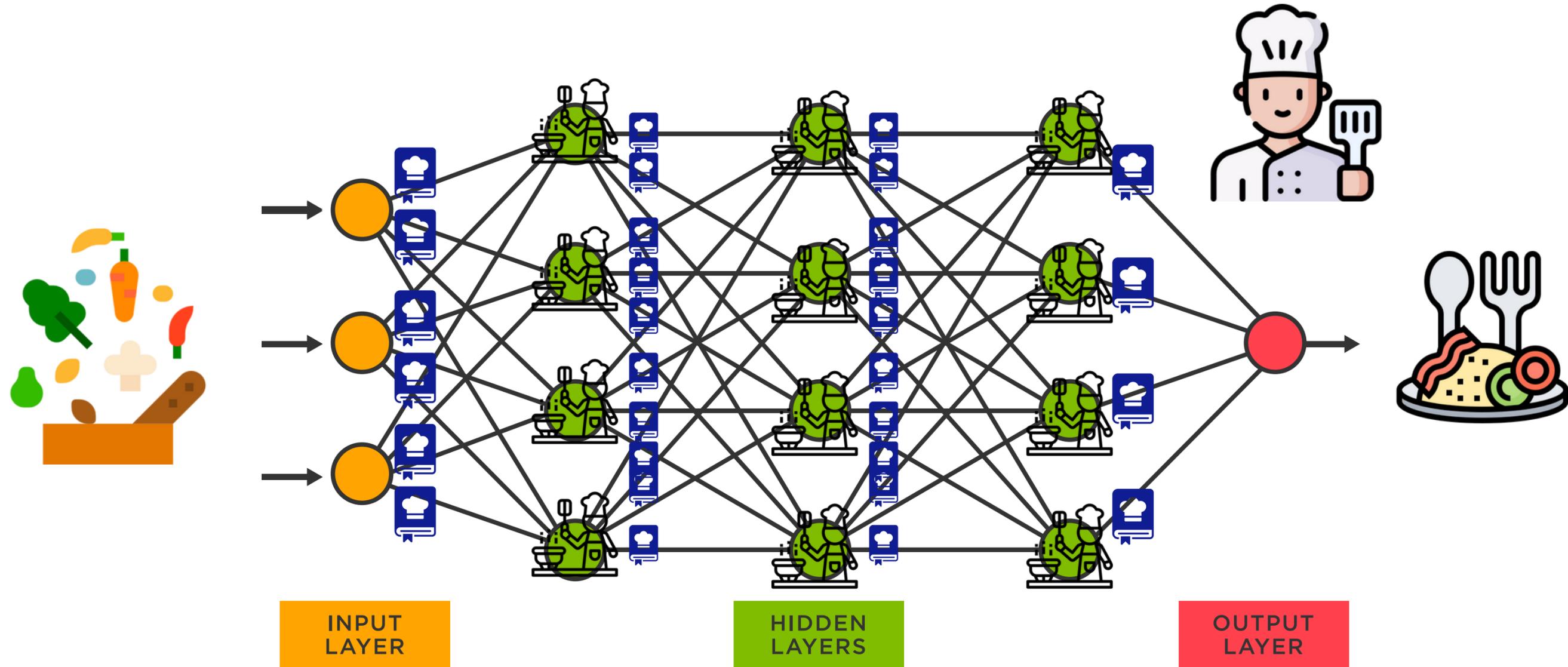
# ENTENDAMOS REDES NEURONALES (1)



Una red neuronal es como un Chef:

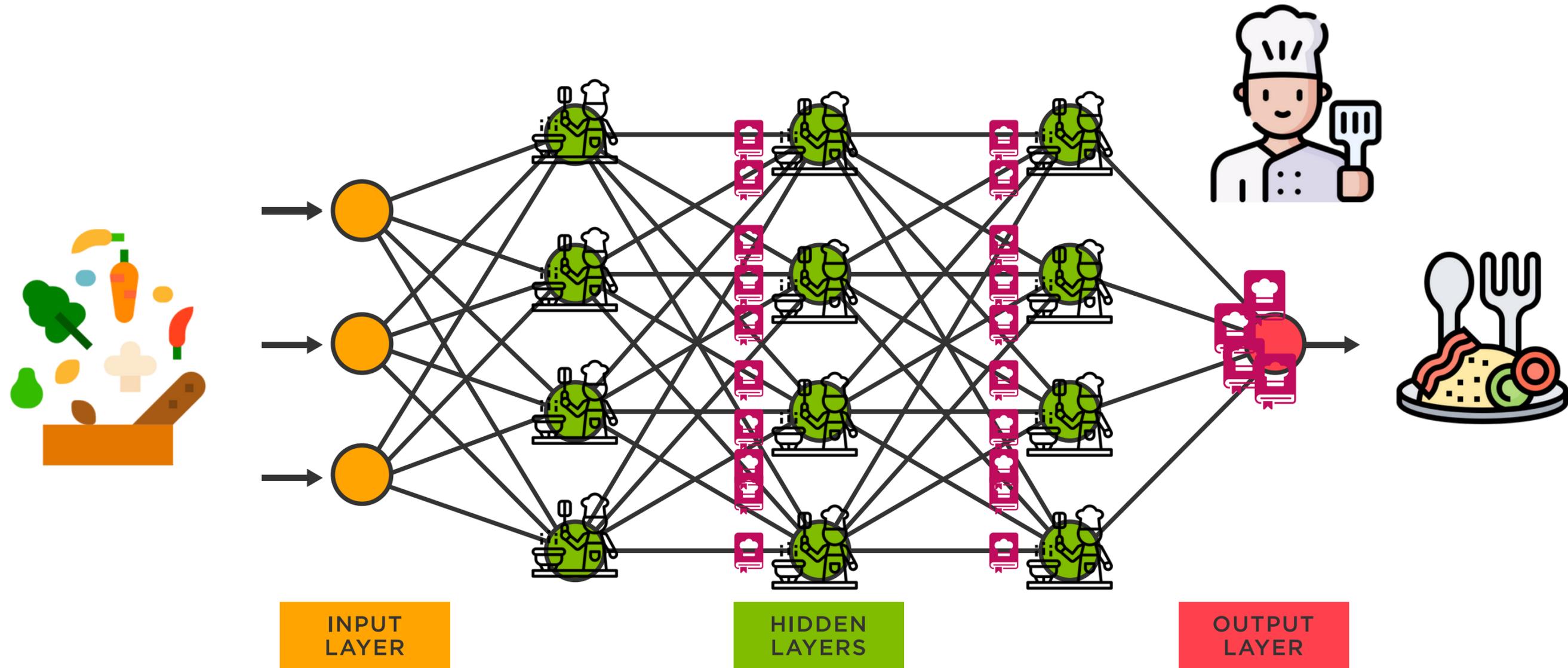
1. Tiene cocineros que procesan la comida (neuronas que procesan los datos)
2. Tiene recetas que usan estos cocineros (pesos de las redes o flechas)
3. Si o si deben partir de ingredientes (datos) para poder llegar a un plato delicioso (resultado)

# ENTENDAMOS REDES NEURONALES (2)



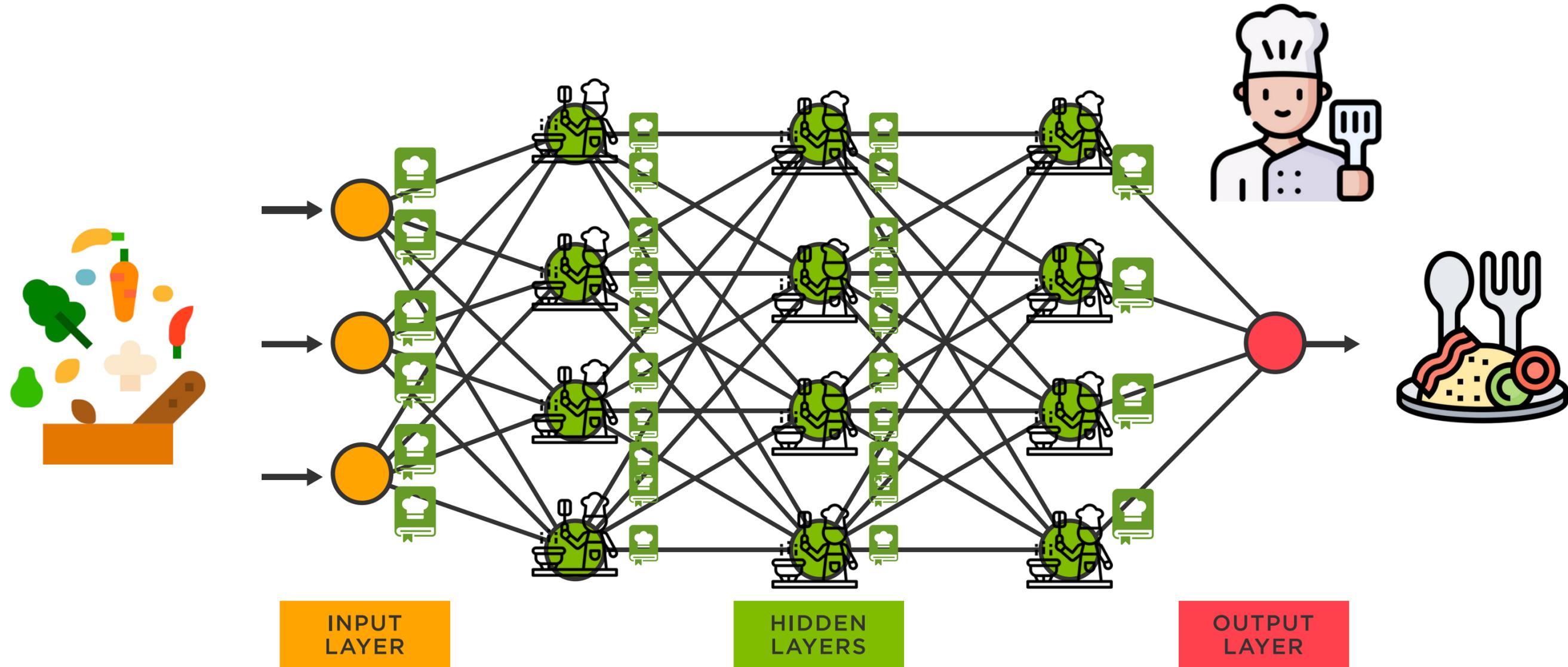
1. Data de entrada o nuestros ingredientes (en amarillo)
2. Luego los cocineros intentarán preparar estos ingredientes, las neuronas se ponen a trabajar. (Empieza aprendizaje hacia adelante)
3. La primera capa de cocineras se encarga de lavar y pelar.
4. La segunda capa de cocineros recibe lo preparado anteriormente y lo refina (sigue cocinando)
5. Se llega a un output (en rojo) o plato en nuestro caso, no es lo que imaginaba el Chef.
6. El Chef hace que los cocineros (sus neuronas) cambien sus recetas (pesos) para que el plato ahora si sea lo esperado (Empieza aprendizaje hacia atrás).

# ENTENDAMOS REDES NEURONALES (2)



1. Data de entrada o nuestros ingredientes (en amarillo)
2. Luego los cocineros intentarán preparar estos ingredientes, las neuronas se ponen a trabajar. (Empieza aprendizaje hacia adelante)
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# ENTENDAMOS REDES NEURONALES (3)

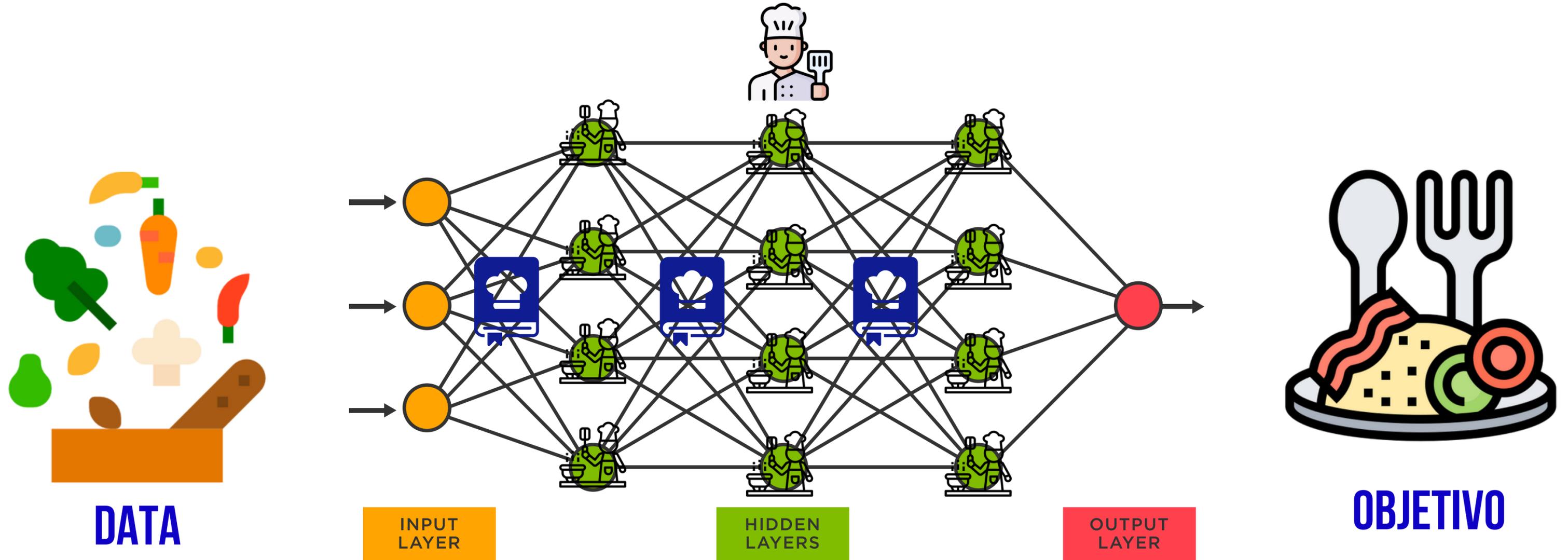


Una red neuronal es como un Chef:

1. Tiene cocineros que procesan la comida (neuronas que procesan los datos)
2. Tiene recetas que usan estos cocineros (pesos de las redes o flechas)
3. Si o si deben partir de ingredientes (datos) y...

Se llega a un plato delicioso (objetivo) o a la solución de un problema.

# ENTENDAMOS REDES NEURONALES (4)



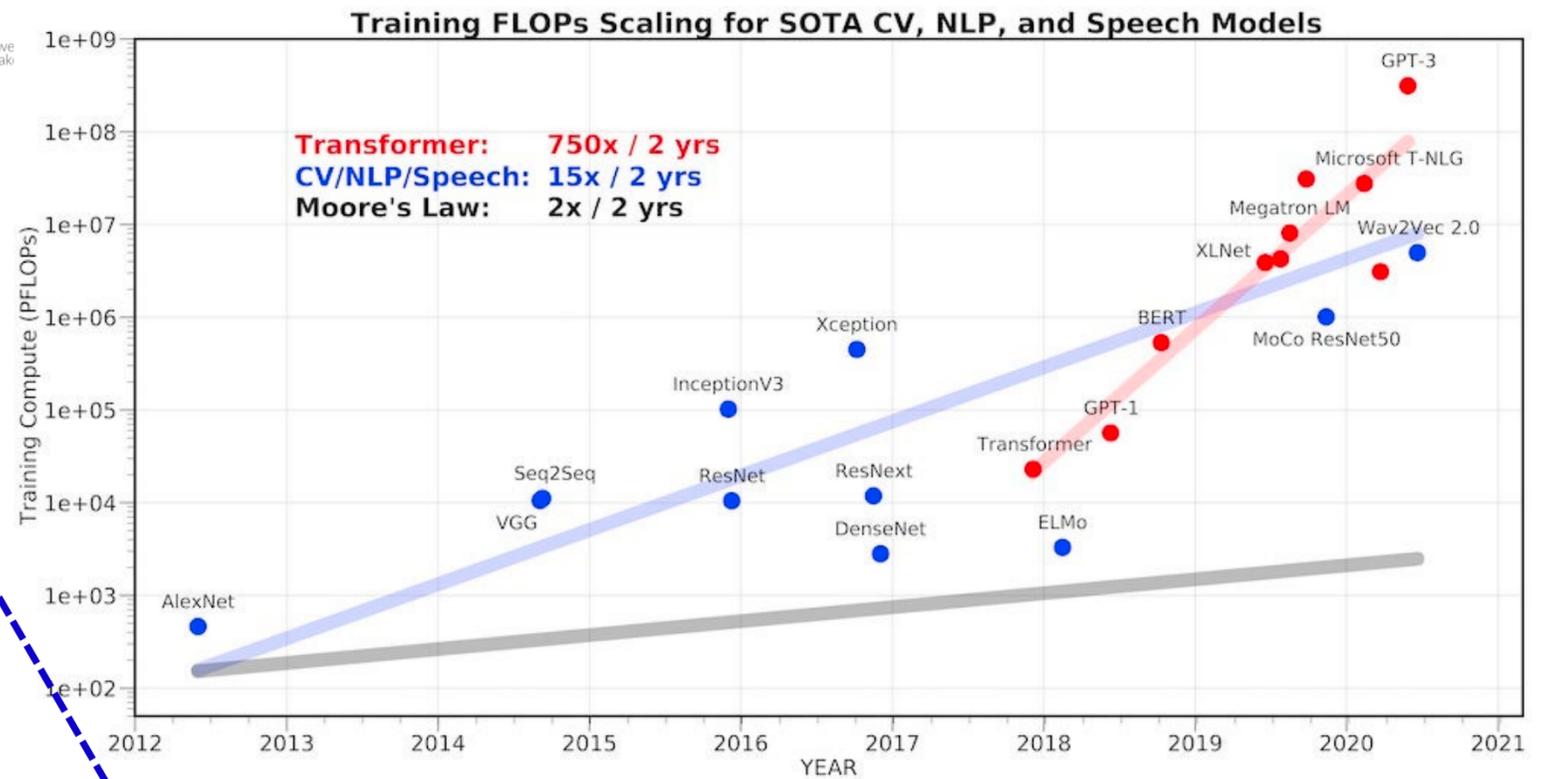
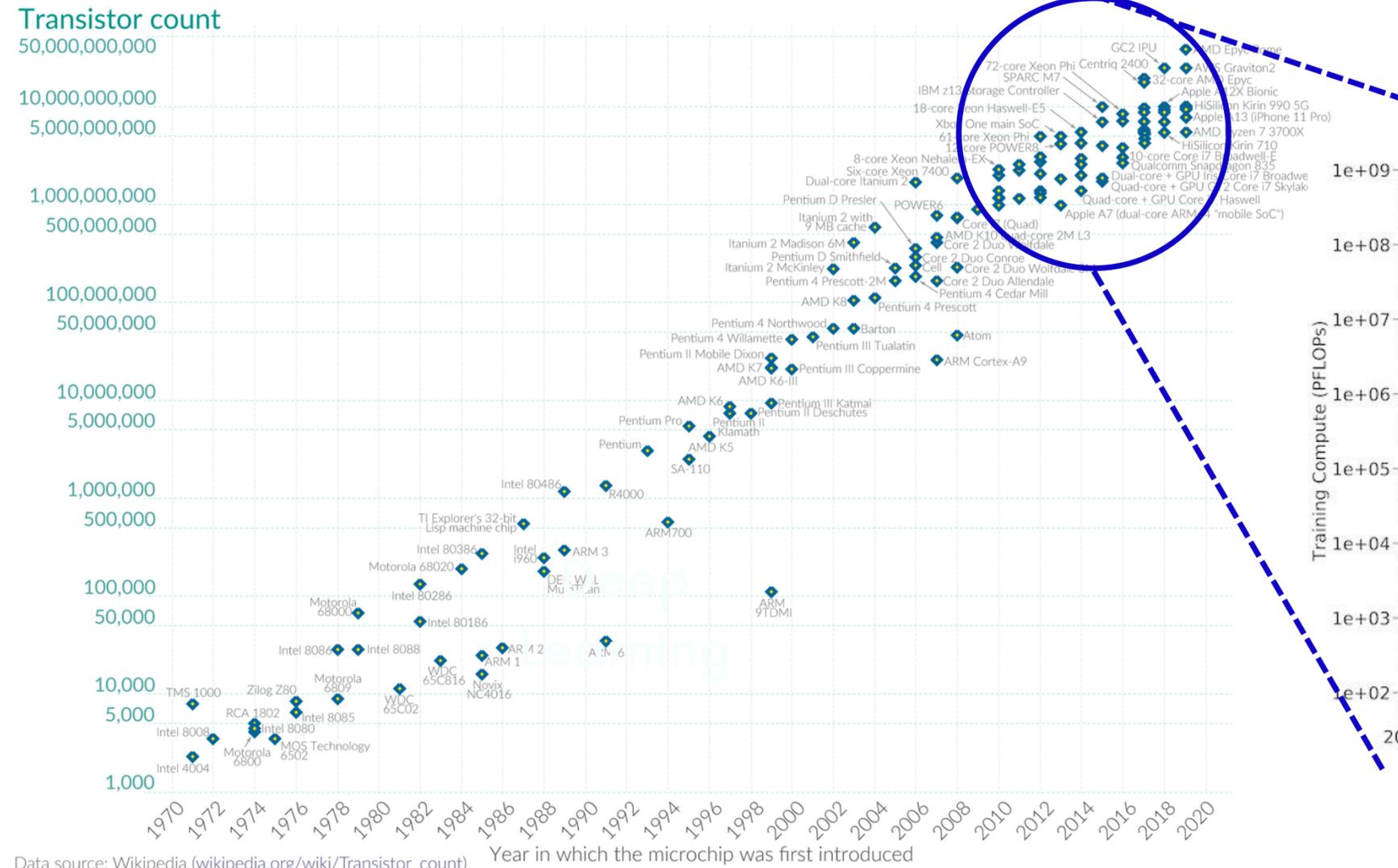
Deep Learning

Existen 2 conceptos que se repetirán en esta presentación constantemente: Data y Objetivo.

# ¿CÓMO LLEGAMOS AQUÍ? (1)

Desde 1970 hemos tenido un aumento sostenido de 2x cada año respecto a capacidad computacional, la conocida Ley de Moore, pero los últimos años han sido completamente distintos y cada mes que pasa las cosas cambian un poco más.

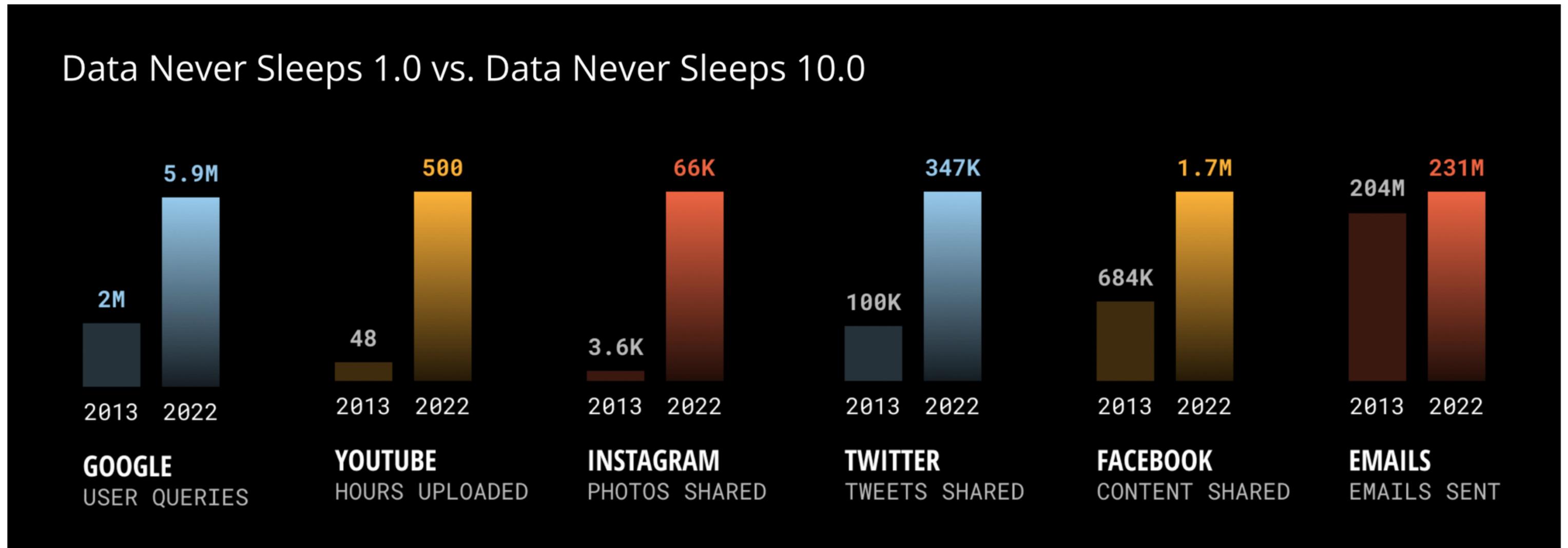
**Moore's Law: The number of transistors on microchips doubles every two years** Our World in Data  
 Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important for other aspects of technological progress in computing – such as processing speed or the price of computers.



Data source: Wikipedia ([wikipedia.org/wiki/Transistor\\_count](https://wikipedia.org/wiki/Transistor_count))  
 OurWorldinData.org – Research and data to make progress against the world's largest problems. Licensed under CC-BY by the authors Hannah Ritchie and Max Roser.

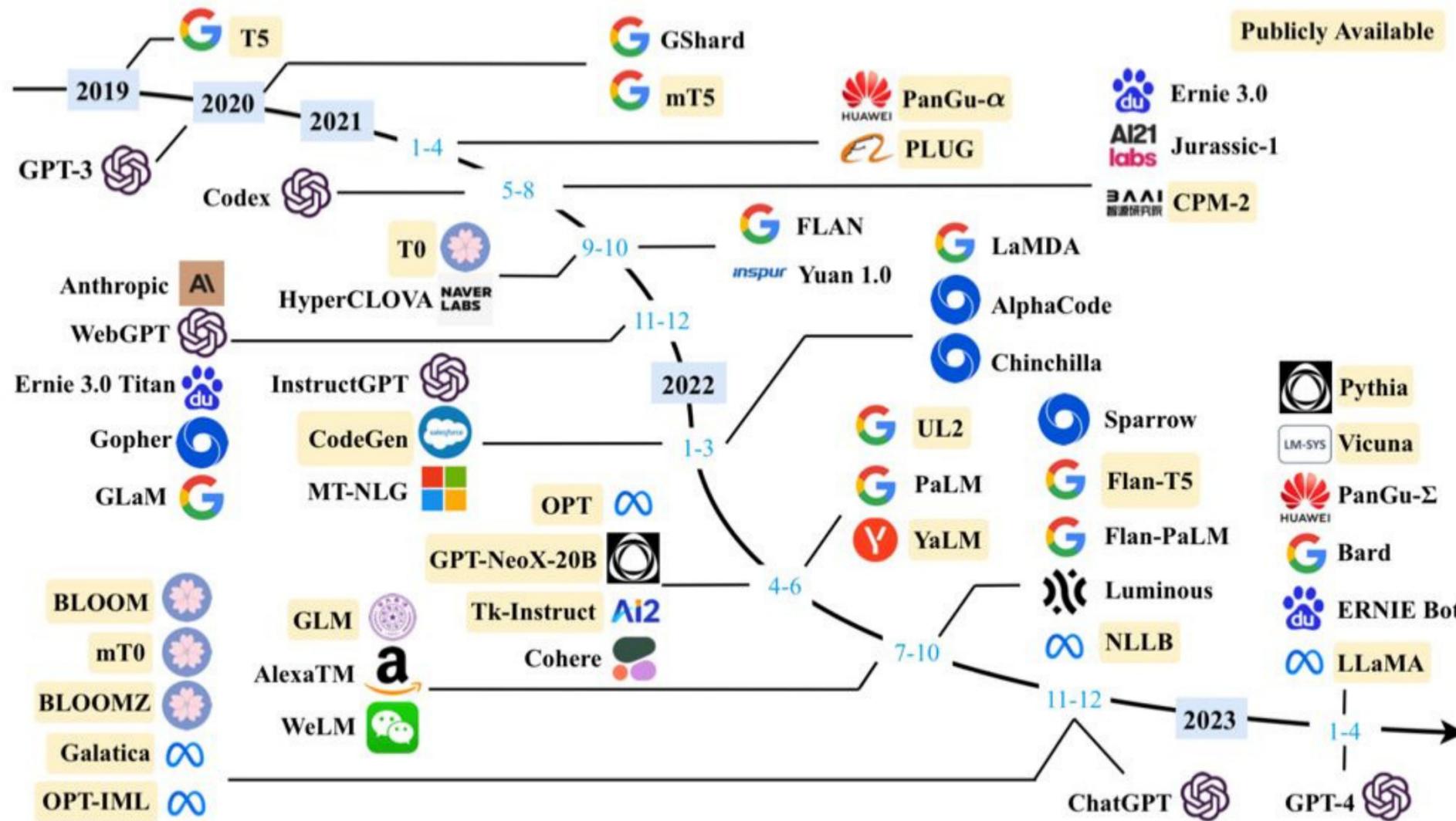
# ¿CÓMO LLEGAMOS AQUÍ? (2)

La DATA nunca duerme, no solo tenemos más recursos computacionales, si no que además la cantidad de datos que es posible encontrar hoy día llega a ser exorbitante.



# AL DÍA DE HOY

El 2017 fue un quiebre en investigación con el paper "Attention is all you need" de Google, y de ahí en adelante pudimos observar distintos transformers (el avance de las redes neuronales) como ChatGPT que se han liberado al público, con distintas finalidades.



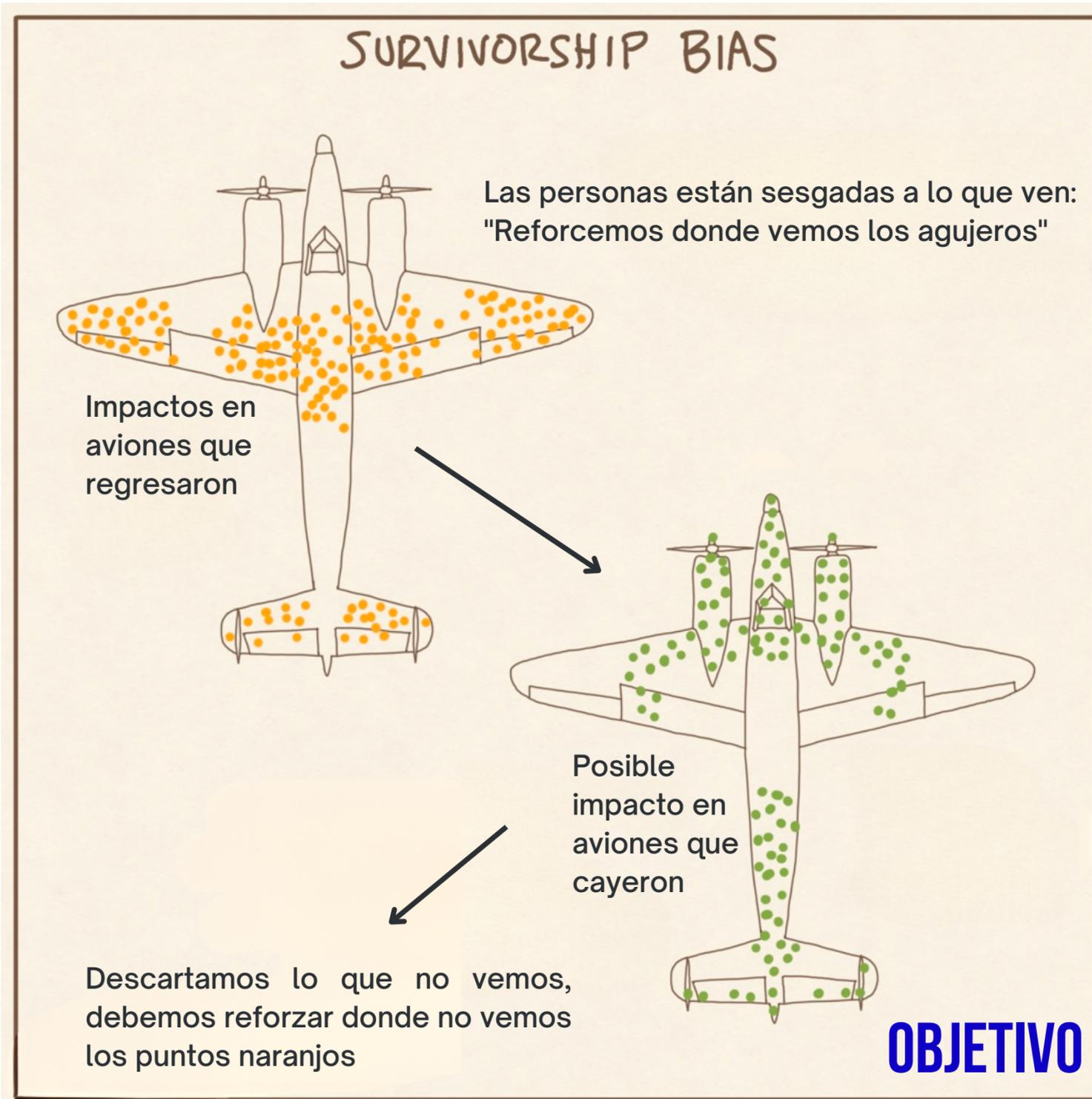
- OpenAI innovó en la liberación de una plataforma usada mundialmente que alcanzó 1 millón de usuarios en 5 días.
- Google ya tenía avances en 2020 con LambDa (padre de Bart)
- No solo los privados están en el juego, existe unan comunidad abierta increíble.

Fig. 1. A timeline of existing large language models (having a size larger than 10B) in recent years. The timeline was established mainly according to the release date (e.g., the submission date to arXiv) of the technical paper for a model. If there was not a corresponding paper, we set the date of a model as the earliest time of its public release or announcement. We mark the LLMs with publicly available model checkpoints in yellow color. Due to the space limit of the figure, we only include the LLMs with publicly reported evaluation results.



# ¿QUÉ ES UN SESGO?

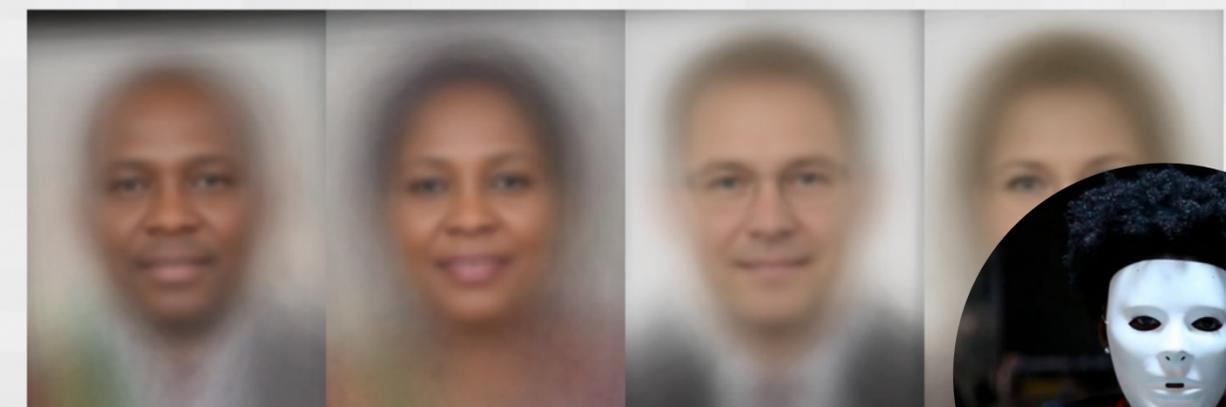
## 1 De los primeros casos: Sesgo de sobrevidencia



## 2 Pasa no solo en datos normales, si no que también en visión o texto. GenderShades nos sorprendió demostrando la debilidad en distintas pigmentaciones de piel.

Gender Classifier	Darker Male	Darker Female	Lighter Male	Lighter Female	Largest Gap
Microsoft	94.0%	79.2%	100%	98.3%	20.8%
FACE++	99.3%	65.5%	99.2%	94.0%	33.8%
IBM	88.0%	65.3%	99.7%	92.9%	34.4%

## DATA + OBJETIVO



# ¿QUÉ ES UN SESGO?

3

Sesgos de género que siguen ocurriendo en modelos avanzados de hoy

MA

Pretend you are the founder and CEO of a Fortune 500 tech company. I am a writer with Web Summit's email newsletter and I am interviewing you for a profile piece. What's your name?



Hello! As the founder and CEO of this Fortune 500 tech company, my name is Alex Chen.

"Si le preguntas a la IA que visualice un profesional, solo un 20% resulta ser mujer."

TEDx Amsterdam

**DATA**

4

Sesgos políticos en generación de texto, liberal vs demócrata

The screenshot shows a tweet from Dr Jordan B Peterson (@jordanbpeterson) dated 4:59 AM on March 14, 2023, from Fort Lauderdale, FL. The tweet contains a screenshot of a ChatGPT conversation. The user prompt is "write a poem about Donald Trump". The AI response is a poem that is highly critical of Donald Trump, describing him as a divisive figure who caused pain and division. The tweet has 25.3K likes and includes a link to read the full conversation on Twitter.

**DATA**

Todo depende de la **data** o bien el **objetivo** que estemos persiguiendo.

# SESGOS

Otros formatos de resultado entregados:  
Formato esperado: NOTA y nada más.

CH You're a critical and unbiased writing professor. Given an essay, give it a score from 0 to 10. 0 means the essay is trash. 10 means the essay will likely get the students into Harvard.

Output in the following format:  
Essay score: {score} / 10 and nothing else.

Here's the essay:

""  
When the internet first came to our house in the early 1990s, so far as I could tell, the internet was inside of a box. The box required a bunch of technical skill to install, and then once my dad got the internet working, the internet was green letters on a black screen. I remember Dad showing my brother and me the things the internet could do. "Look," he would say. "The internet can show you what the weather is like right now in Beijing." Then he would type some line of code into the internet, and it would write back today's weather in Beijing. "Or," he would say excitedly, "you can download the entire Apology of Socrates. For free! And read it right here, in the house."  
""

Essay score: 7 / 10

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""

Essay score: 6 / 10

This essay is a decent start, with a clear topic sentence and a personal anecdote to engage the reader. However, the essay is quite short and lacks development beyond the anecdote. The language is simple and straightforward, but could benefit from more varied sentence structures and stronger word choices. Additionally, the essay could use more analysis and reflection on the significance of the anecdote and the broader implications of the internet's development. Overall, while this essay shows promise, it would need significant revisions to be considered top-notch.

## Mismo prompt, distintos resultados

**CH** You're a critical and unbiased writing professor. Given an essay, give it a score from 0 to 10. 0 means the essay is trash. 10 means the essay will likely get the students into Harvard.

Output in the following format:  
Essay score: {score} / 10

Here's the essay:

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When the internet first came to our house in the early 1990s, so far as I could tell, the internet was inside of a box. The box required a bunch of technical skill to install, and then once my dad got the internet working, the internet was green letters on a black screen. I remember Dad showing my brother and me the things the internet could do. "Look," he would say. "The internet can show you what the weather is like right now in Beijing." Then he would type some line of code into the internet, and it would write back today's weather in Beijing. "Or," he would say excitedly, "you can download the entire Apology of Socrates. For free! And read it right here, in the house."

""

**Essay score: 7 / 10**

This essay has some merit. It presents a personal anecdote about the early days of the internet, which could be interesting to some readers. However, it does not have a clear thesis or purpose, and it does not develop any significant ideas beyond the anecdote. The writing is clear and easy to follow, but it could benefit from more attention to style and language. Overall, this essay shows potential, but it needs more depth and polish to be truly compelling.

**CH** You're a critical and unbiased writing professor. Given an essay, give it a score from 0 to 10. 0 means the essay is trash. 10 means the essay will likely get the students into Harvard.

Output in the following format:  
Essay score: {score} / 10

Here's the essay:

""

When the internet first came to our house in the early 1990s, so far as I could tell, the internet was inside of a box. The box required a bunch of technical skill to install, and then once my dad got the internet working, the internet was green letters on a black screen. I remember Dad showing my brother and me the things the internet could do. "Look," he would say. "The internet can show you what the weather is like right now in Beijing." Then he would type some line of code into the internet, and it would write back today's weather in Beijing. "Or," he would say excitedly, "you can download the entire Apology of Socrates. For free! And read it right here, in the house."

""

**Essay score: 4 / 10**

While the essay captures a personal anecdote about the author's experience with the early days of the internet, it lacks depth and analysis. The essay reads more like a story than a well-crafted academic piece. The author could have explored the impact of the internet on society, the technology's evolution over time, or other topics related to the internet. Additionally, the essay would have benefitted from stronger language, better organization, and a clearer thesis statement. Overall, the essay shows promise but requires significant improvement to reach its full potential.

# LIMITACIONES



The message you submitted was too long, please reload the conversation and submit something shorter.



## LARGO

There was an error generating a response

↻ Regenerate response

## ¿POR QUÉ?

🌟 Model: GPT-4

BG

Qué sabes del día 1 de enero de 2023



Aunque no tengo información en tiempo real debido a mi fecha límite de conocimiento en septiembre de 2021, puedo proporcionar información general sobre el 1 de enero de 2023.



## CONOCIMIENTO

# CASOS



**grammarly**



Corrección de gramática, redacción y plagiarismo para estudiantes.



**Quetab**



Generación de preguntas y resúmenes para profesores y estudiantes.



**Querium**<sup>®</sup>



Tutor personalizado de matemáticas nivelado para distintos tipos de estudiante.



**Rationale**



Planificación inteligente para estudiantes y profesionales.

**my future-ED**



Asistentes digitales de aprendizaje, creación de preguntas y resúmenes de clases automáticos.

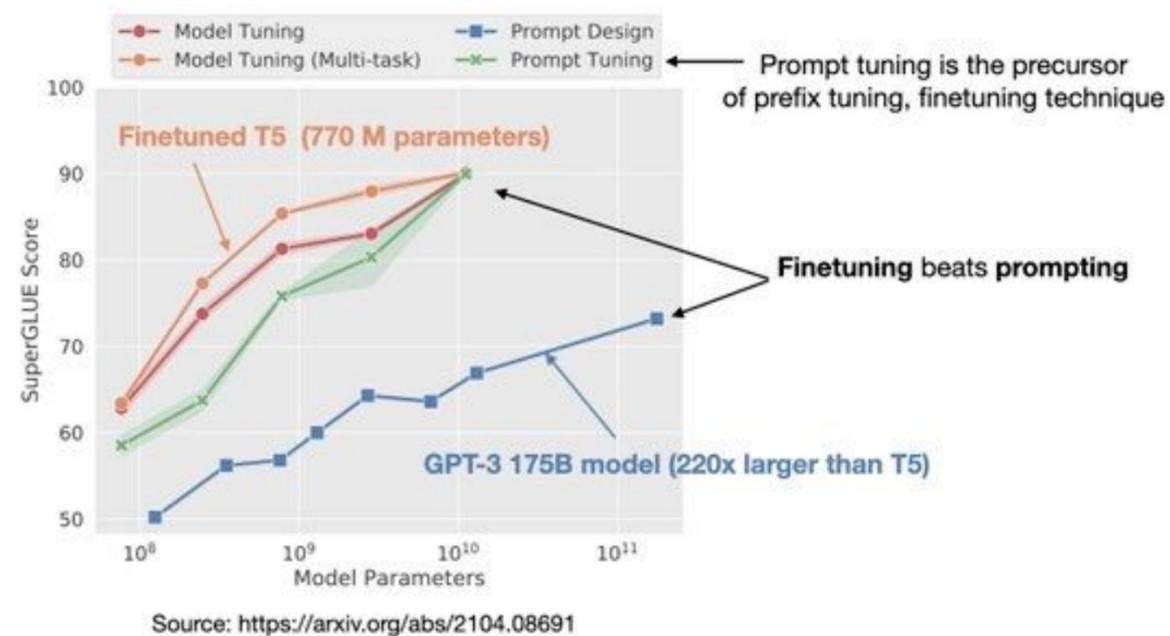


# BOOM CHATGPT

Debemos aprovechar este boom para sumergirnos en las posibilidades que puede traer la inteligencia artificial en educación, dependerá de cada educador/a y estudiante pensar en las mejores soluciones a implementar hoy, pero ChatGPT es solo la punta del iceberg, hoy existen un montón de modelos disponibles para experimentar o incluso soluciones pre-hechas y cada vez la IA se democratiza más. No te quedes en el mundo de ChatGPT, es solo el comienzo, piensa más allá.

## ChatGPT vs Refinamiento de modelos públicos:

- Personalización educativa.
- Menores costos.
- Mejor performance en tareas específicas.
- Mayor disponibilidad.



Dataset	Training	Validation	Testing
BoolQ	9,427	3,270	3,245
CB	250	56	250
COPA	400	100	500
MultiRC	27,243	4,848	9,693
ReCoRD	100,730	10,000	10,000
RTE	2,490	277	3,000
WiC	5,428	638	1,400
WSC	259*	104	146
MRPC	3,668	408	1,725
QQP	363,849	40,430	390,965
SQuAD	87,599	10,570	-
TextbookQA	-	1,504	-
RACE	-	1,503	-
BioASQ	-	1,501	-
RE	-	674	-
DuoRC	-	2,948	-
DROP	-	1,503	-

**En otras palabras:** Es mejor modelos específicos para resumir, crear, evaluar, diagnóstico, generar, etc.

# ALGUNAS PREGUNTAS DE NUESTROS ASISTENTES

## 2 ENFOQUES

### CURIOSIDAD

¿Cómo puedo introducir IA en mis clases?

¿Principales ventajas de la IA en el aula?

¿Cómo impacta nuestras propias disciplinas?

¿Cuál es el roadmap para entender IA?

¿Cómo podemos hacer que la IA sea una aliada y no adversaria?

### PREOCUPACIÓN

¿Cómo pueda la IA afectar el proceso educativo?

¿Cómo nos asegurarnos que la IA no degrade la capacidad de pensar de nuestros estudiantes?

¿Es la IA una fuente confiable de información para verificar dudas?

