Inteligência Artificial:
De Há 70 Anos Até Hoje em 10 Minutos

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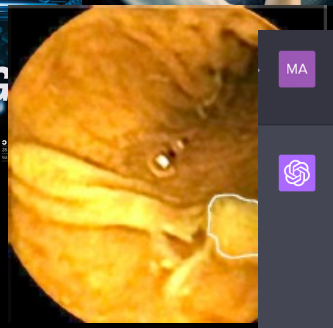
Intelligência Artificial (IA)

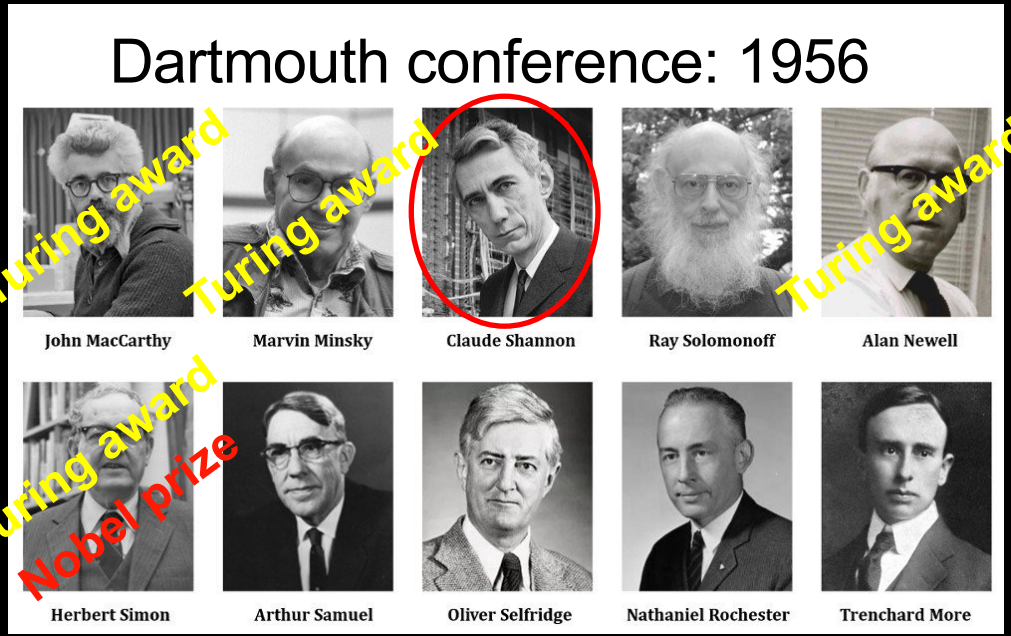
- Simulação de inteligência por máquinas
- Comportamento de um sistema artificial que os humanos vêem como inteligente



MA Provide a short definition of what is artificial intelligence.

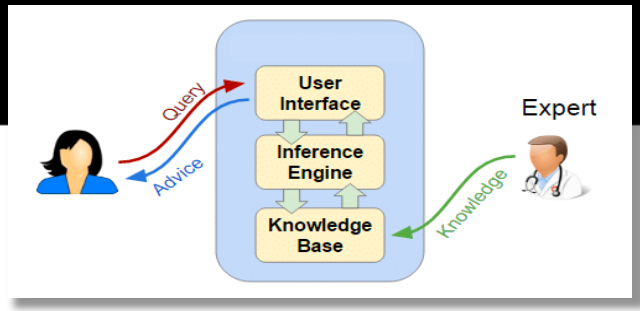
Artificial Intelligence (AI) is a field of computer science dedicated to the creation of systems capable of performing tasks that normally require human intelligence. These tasks include learning from experience, understanding natural language, recognizing patterns, solving problems, making decisions, and exhibiting creativity. The goal of AI is to make machines smarter and more human-like in their functioning, and it ranges from simple rule-based systems to complex machine learning and deep learning models.

Genesis


Dartmouth conference: 1956
Turing award
Turing award
Turing award
Turing award
Nobel prize
John MacCarthy
Marvin Minsky
Claude Shannon
Ray Solomonoff
Alan Newell
Herbert Simon
Arthur Samuel
Oliver Selfridge
Nathaniel Rochester
Trenchard More

A história da IA num slide...

good old-fashioned AI

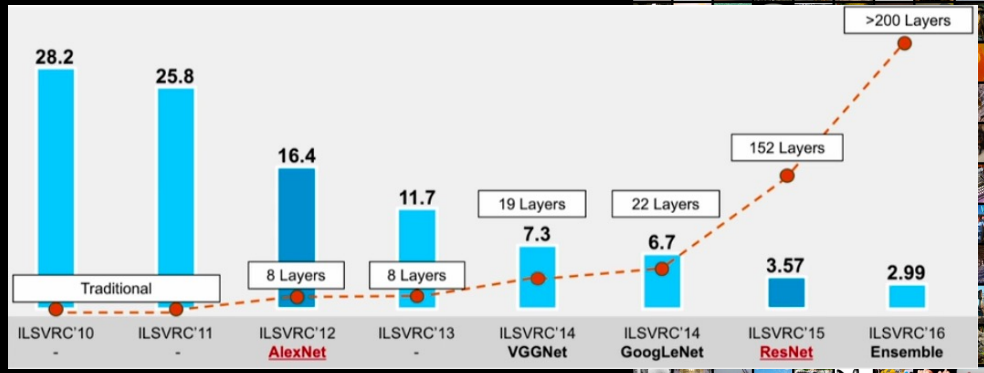


- Generalization of personal computers
- The **Internet** was born

amazon Google .....

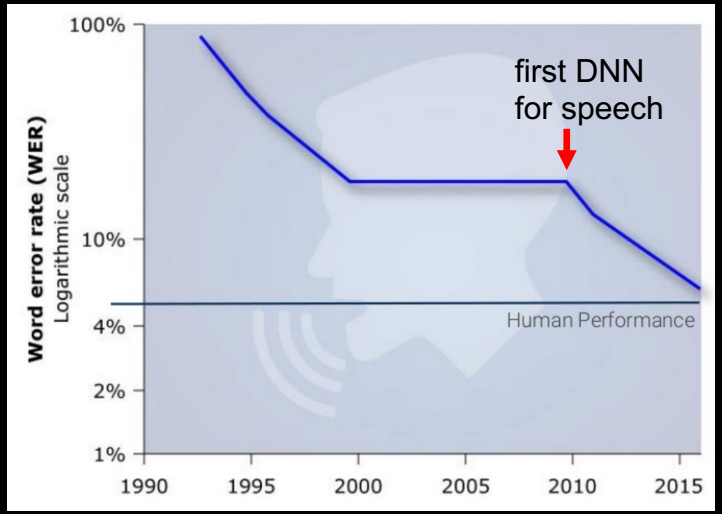
“momento Imagenet” 2012

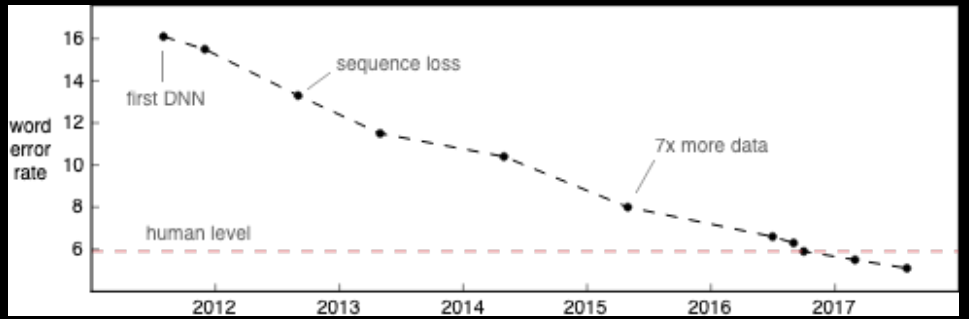
ImageNet (2009): 14 million images,
20000 categories



ImageNet Large Scale Visual Recognition Challenge

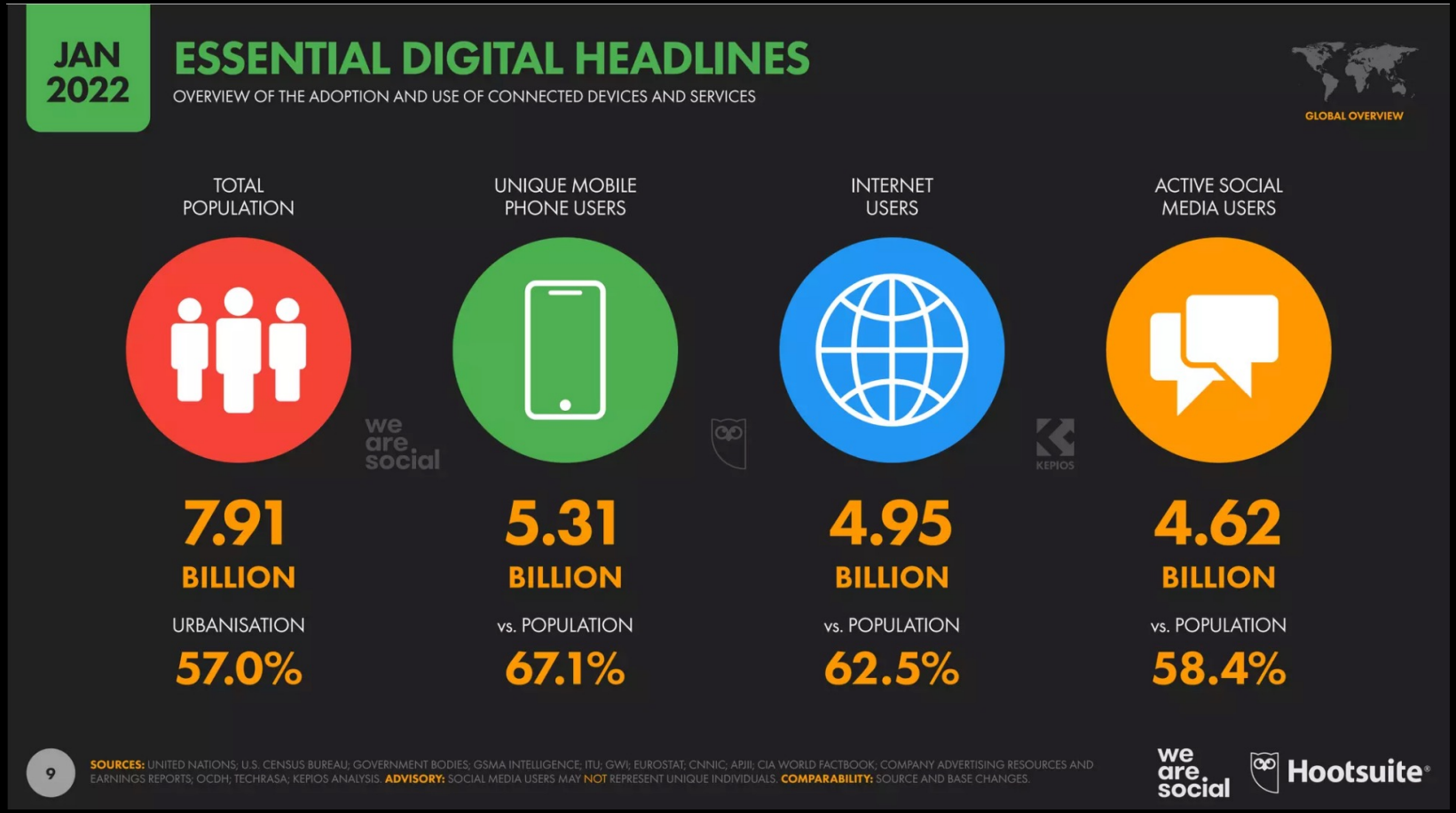
Também em reconhecimento de fala





Como é que isto aconteceu?

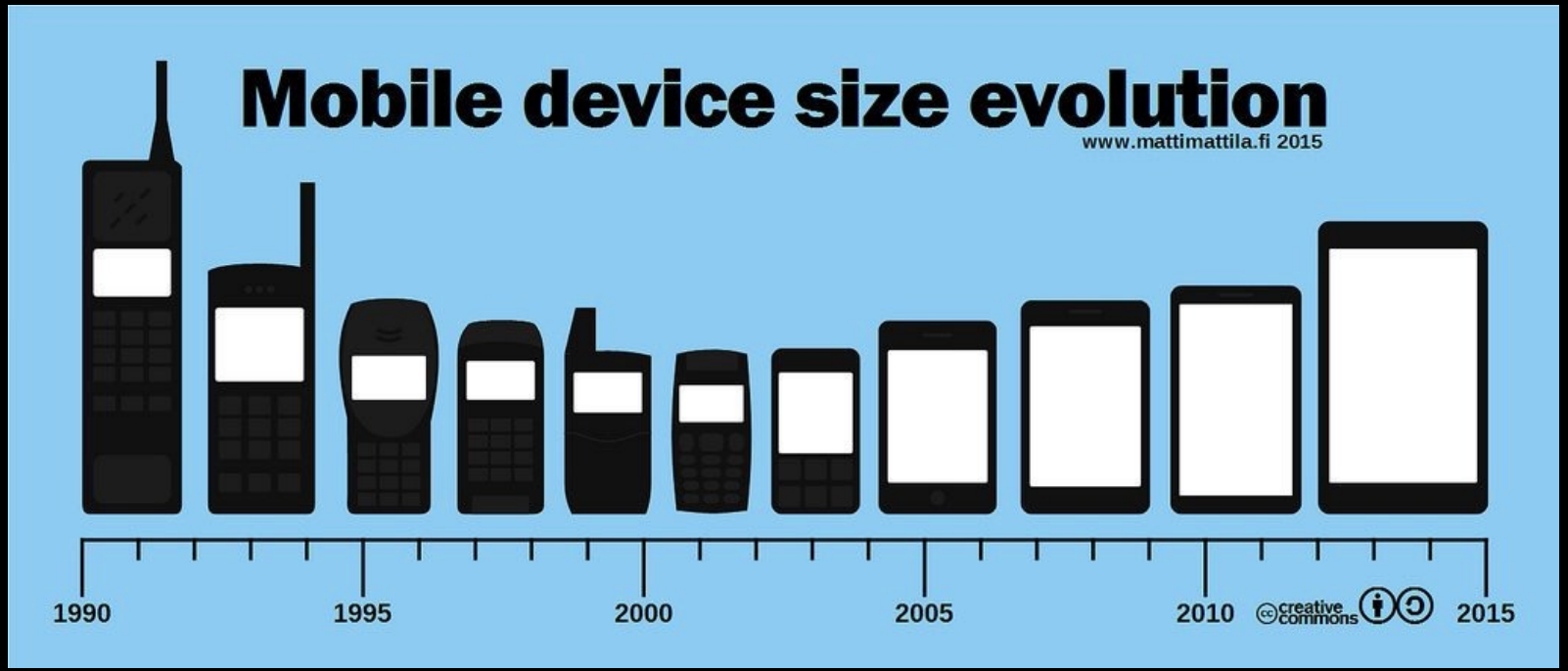
Revoluções tecnológicas



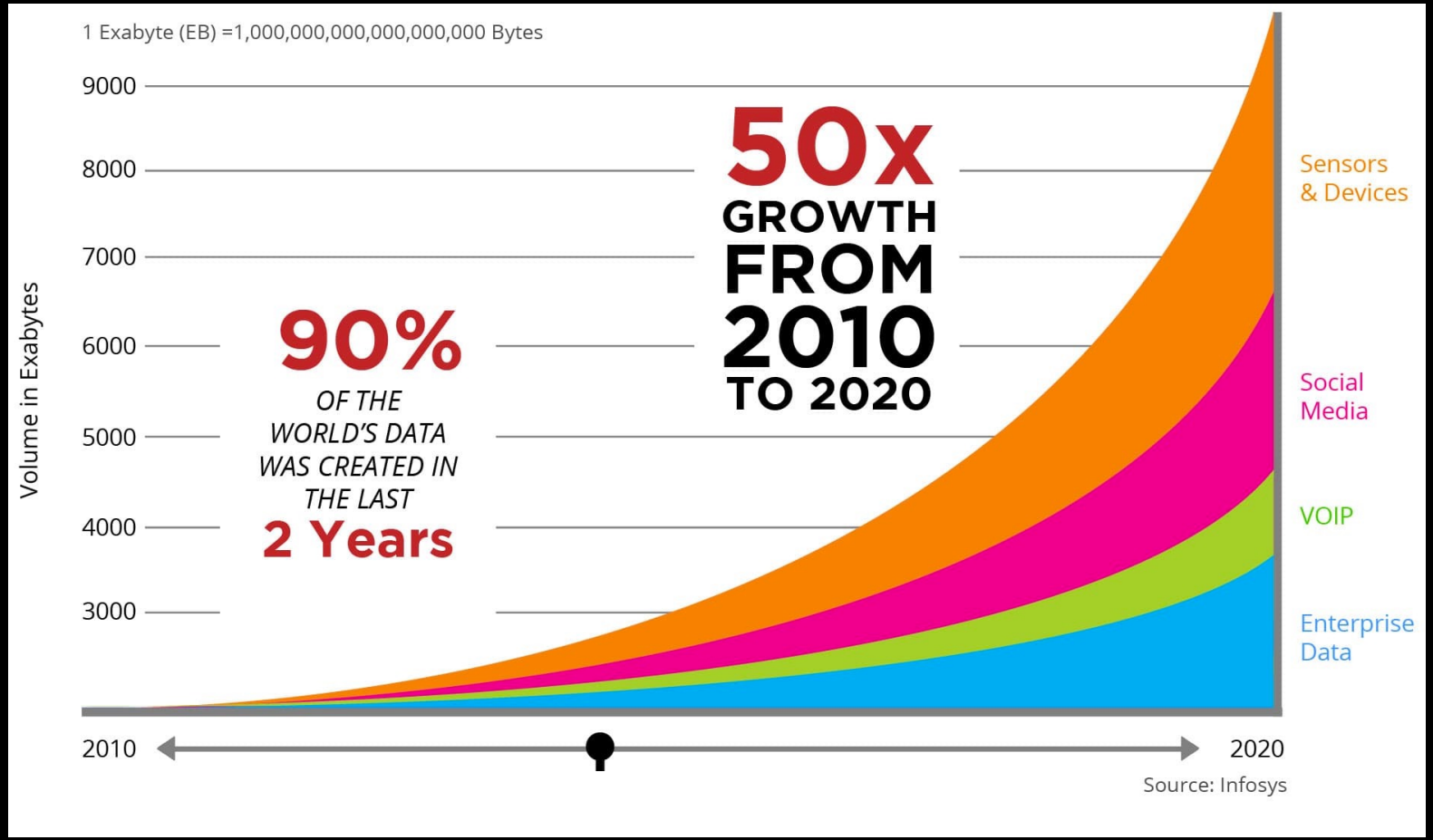
acesso e geração de enormes quantidades de dados

video, fotos, localização, compras, redes sociais, medicina/saúde, ciência, …

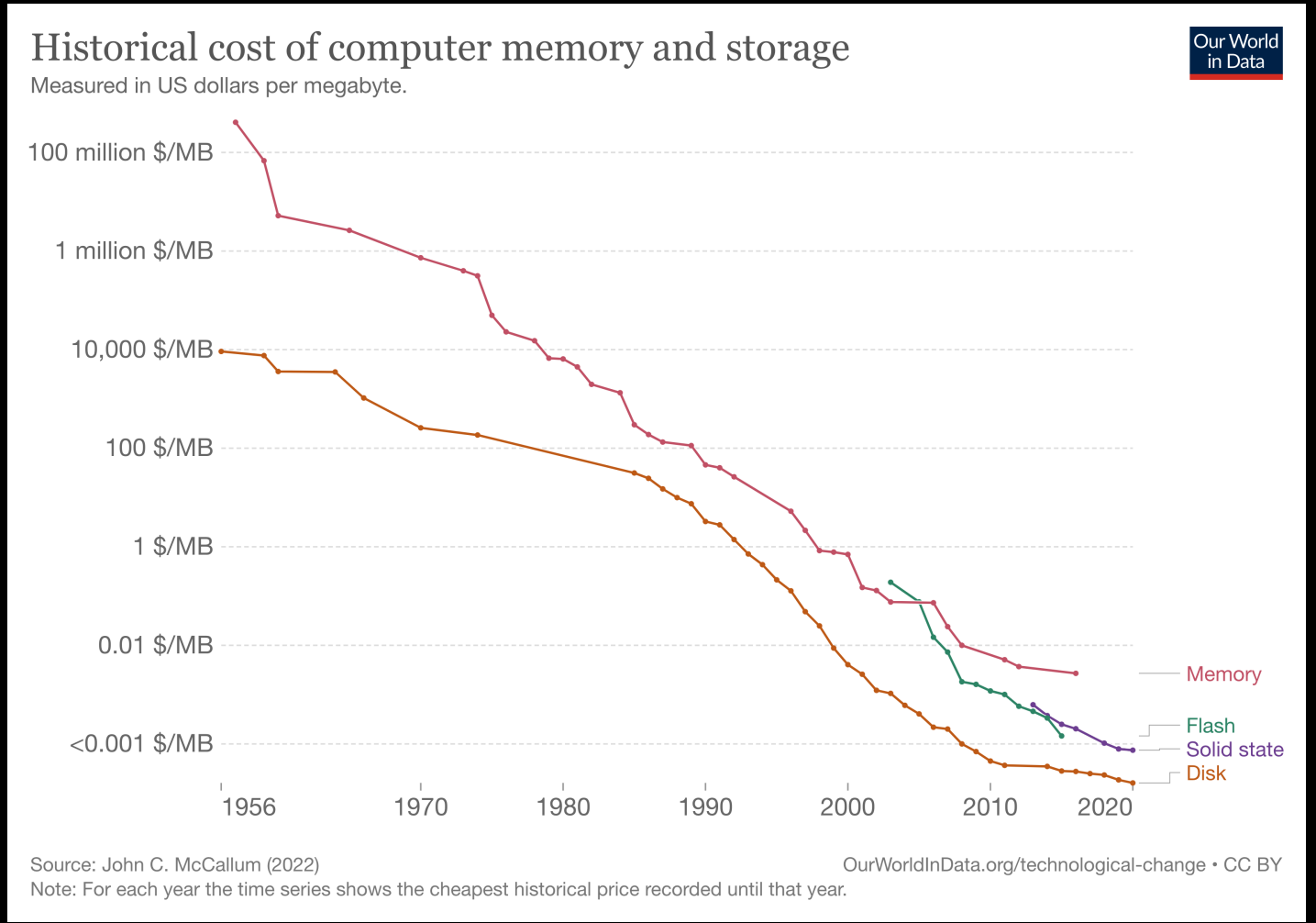
Revoluções tecnológicas



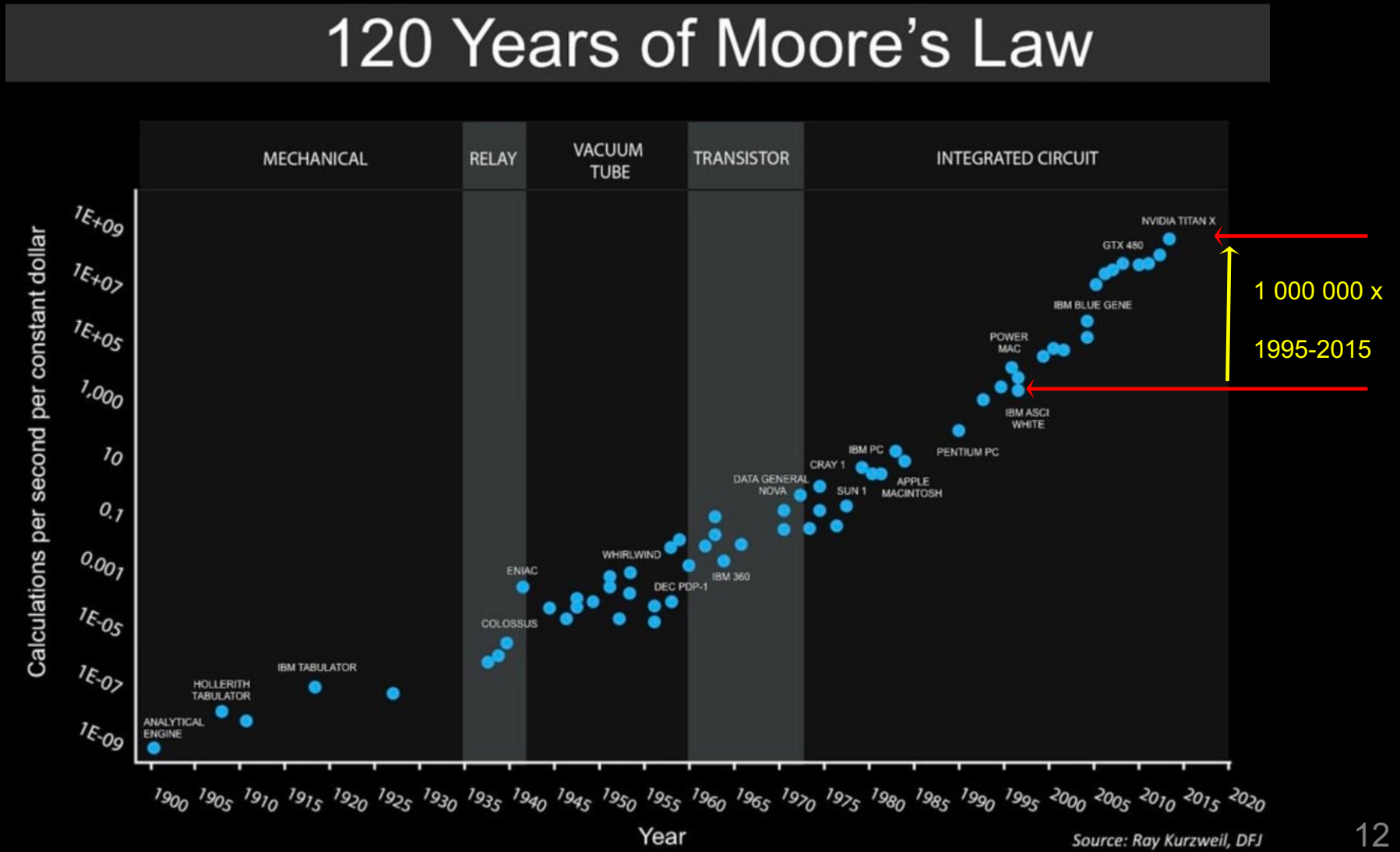
Revoluções tecnológicas



Revoluções tecnológicas



Revoluções tecnológicas



Mudança drástica do paradigma de negócio

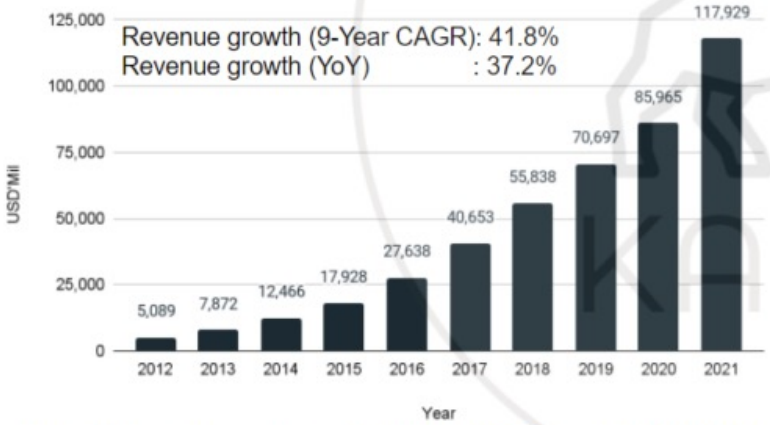
- Conteúdo super-abundante: sem valor
- Conteúdo super-abundante: procura é crucial!
- Como lucrar com procura? Publicidade!
- Como lucrar com redes sociais? Publicidade!
- Comércio *online*: Recomendação

IA: tecnologia chave de tudo isto!

Meta

Alphabet

Meta Platforms Inc, Historical advertising revenue



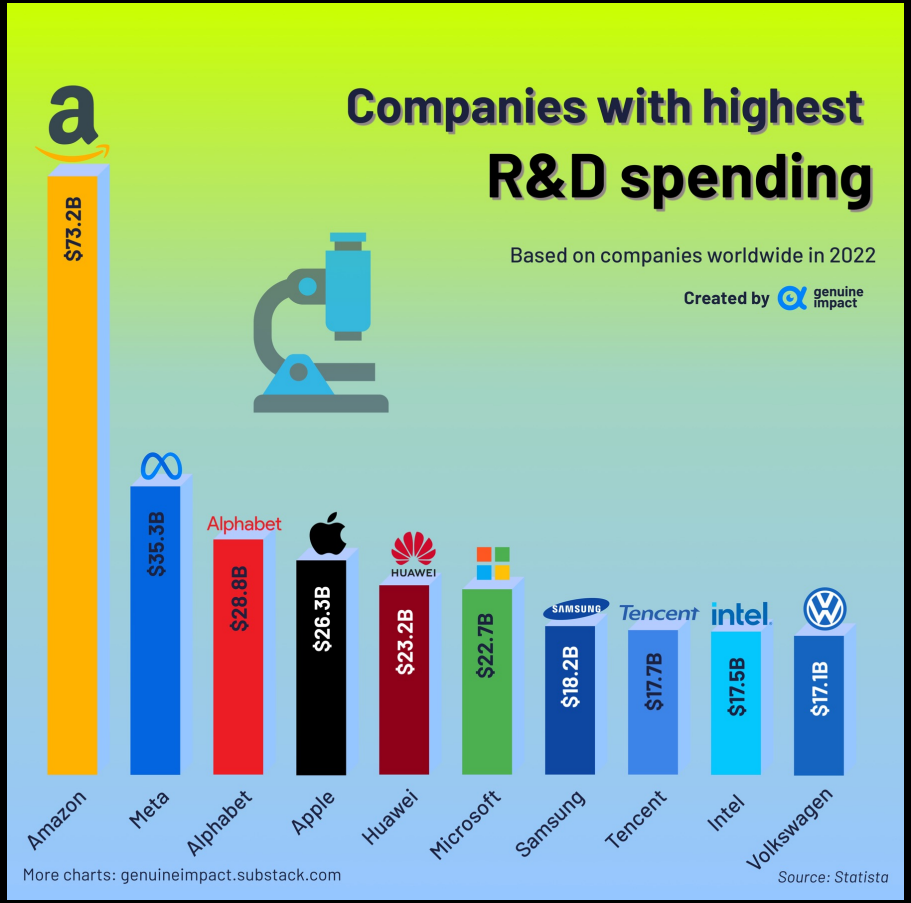
Note: Reality Labs' revenue contribution for FY 2021 is just 1.92% of total revenue, negligible versus advertising revenue for Meta Platforms Inc.

Alphabet Inc. Historical advertising revenue

Note: Google Cloud & Google other revenue removed. Google advertising consists of Google Search, YouTube ads, Google Network Members' properties

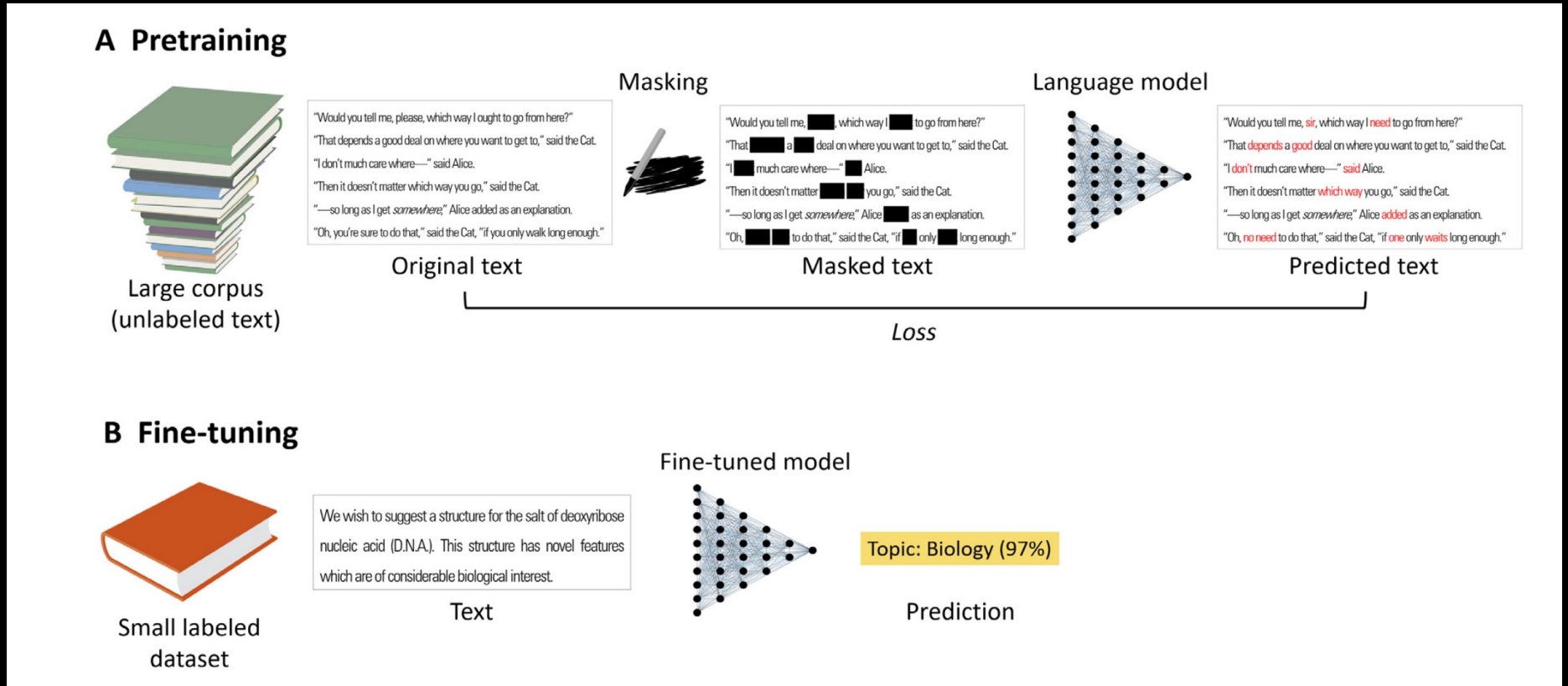
255 B

Portugal GDP



Orçamento do MCES de Portugal 2022: 5 B€

Aprendizagem auto-supervisionada



Grandes modelos de linguagem (LLM)

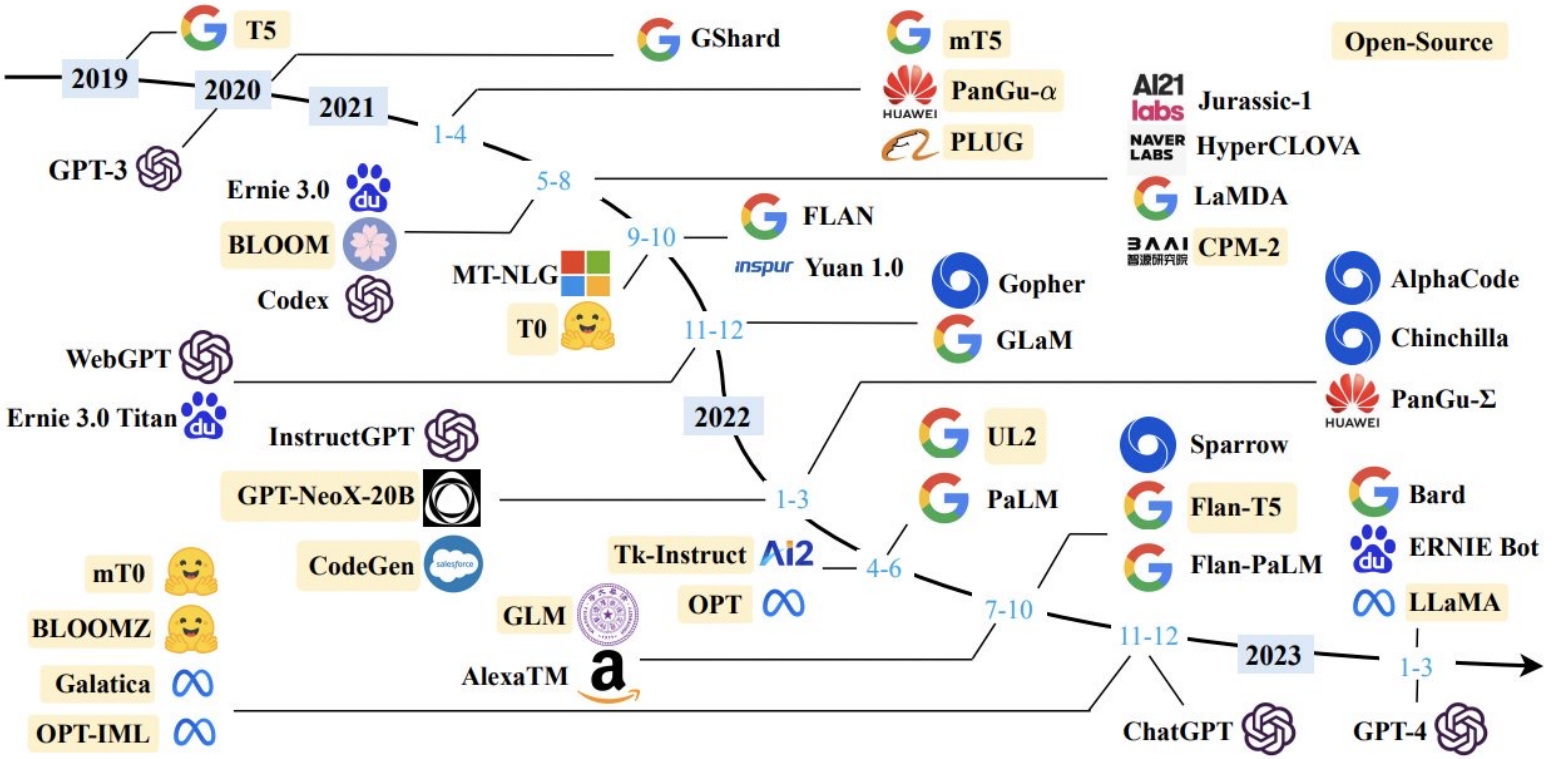
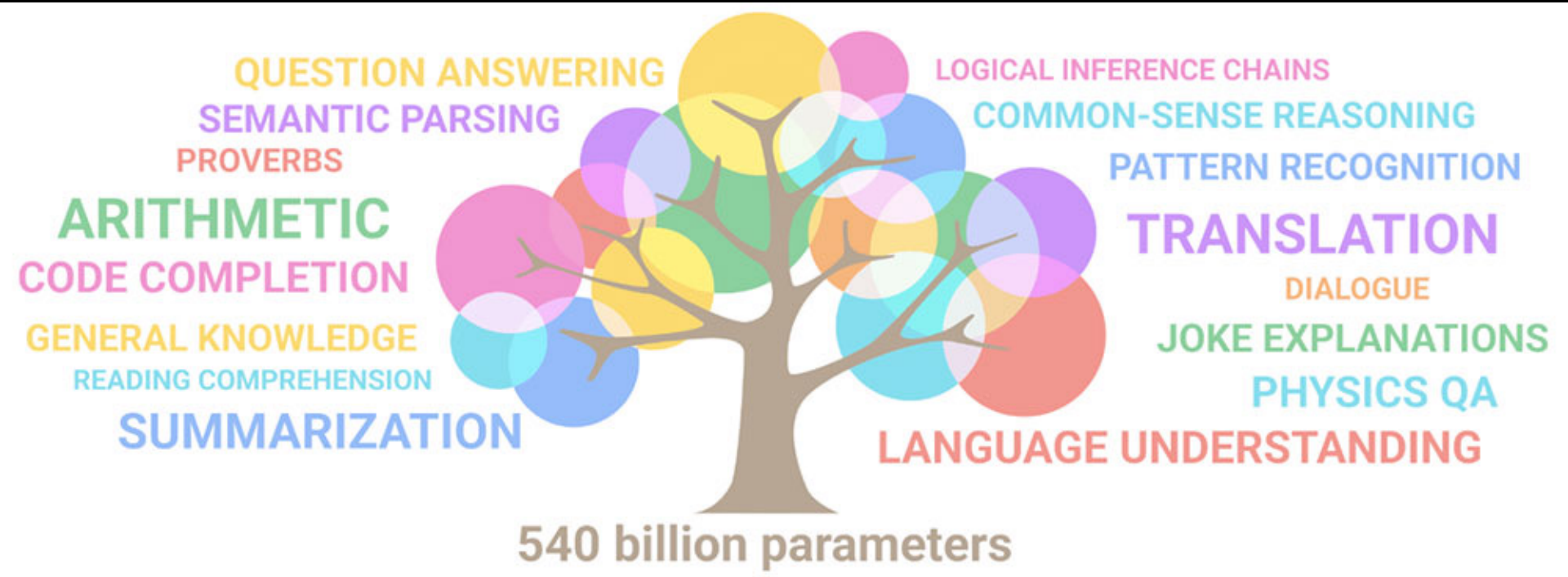


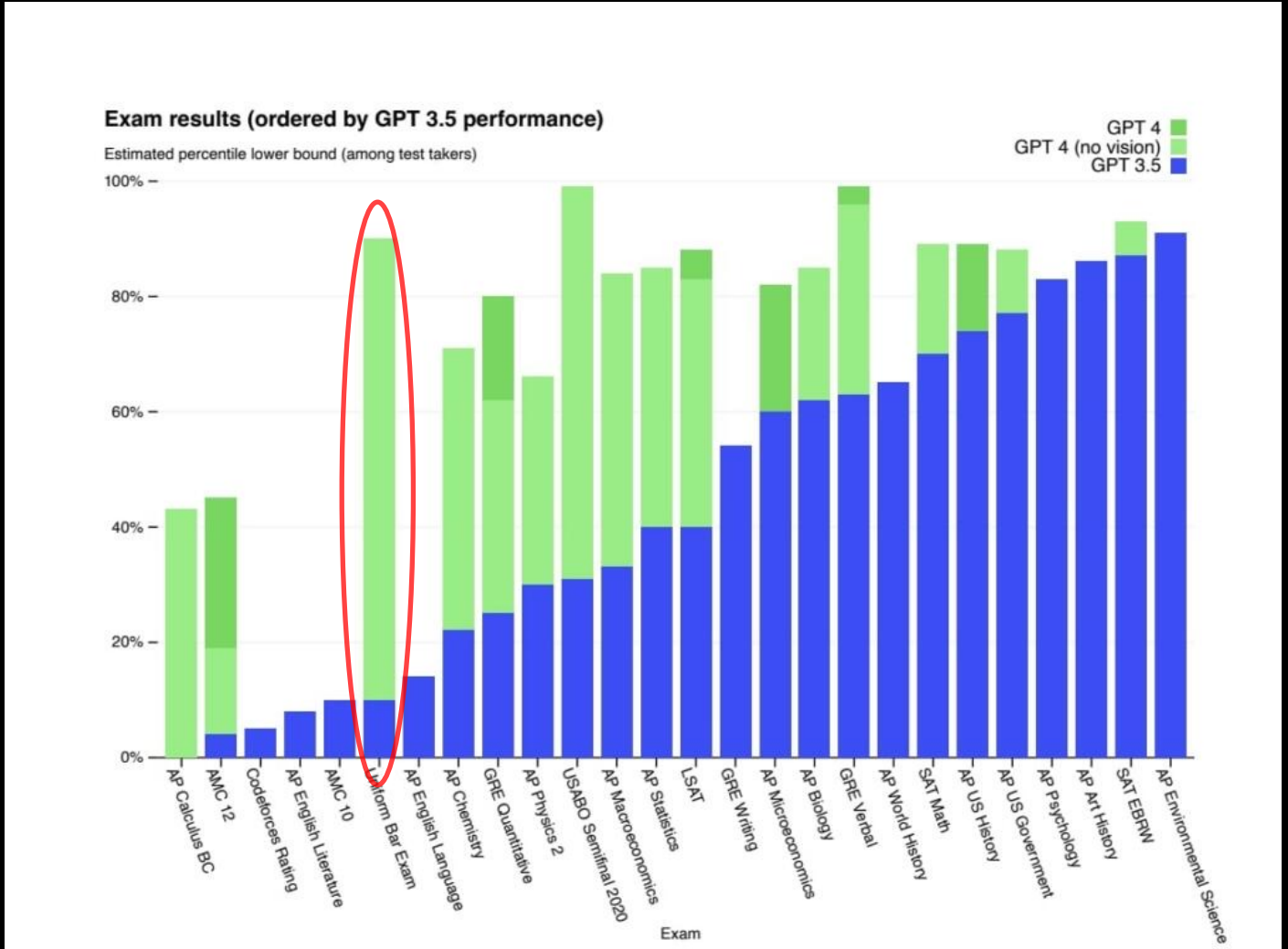
Fig. 1. A timeline of existing large language models (having a size larger than 10B) in recent years. We mark the open-source LLMs in yellow color.

Capacidades emergentes

blog.research.google



Um gráfico famoso...



AI to hit 40% of jobs and worsen inequality, IMF says

15 January 2024

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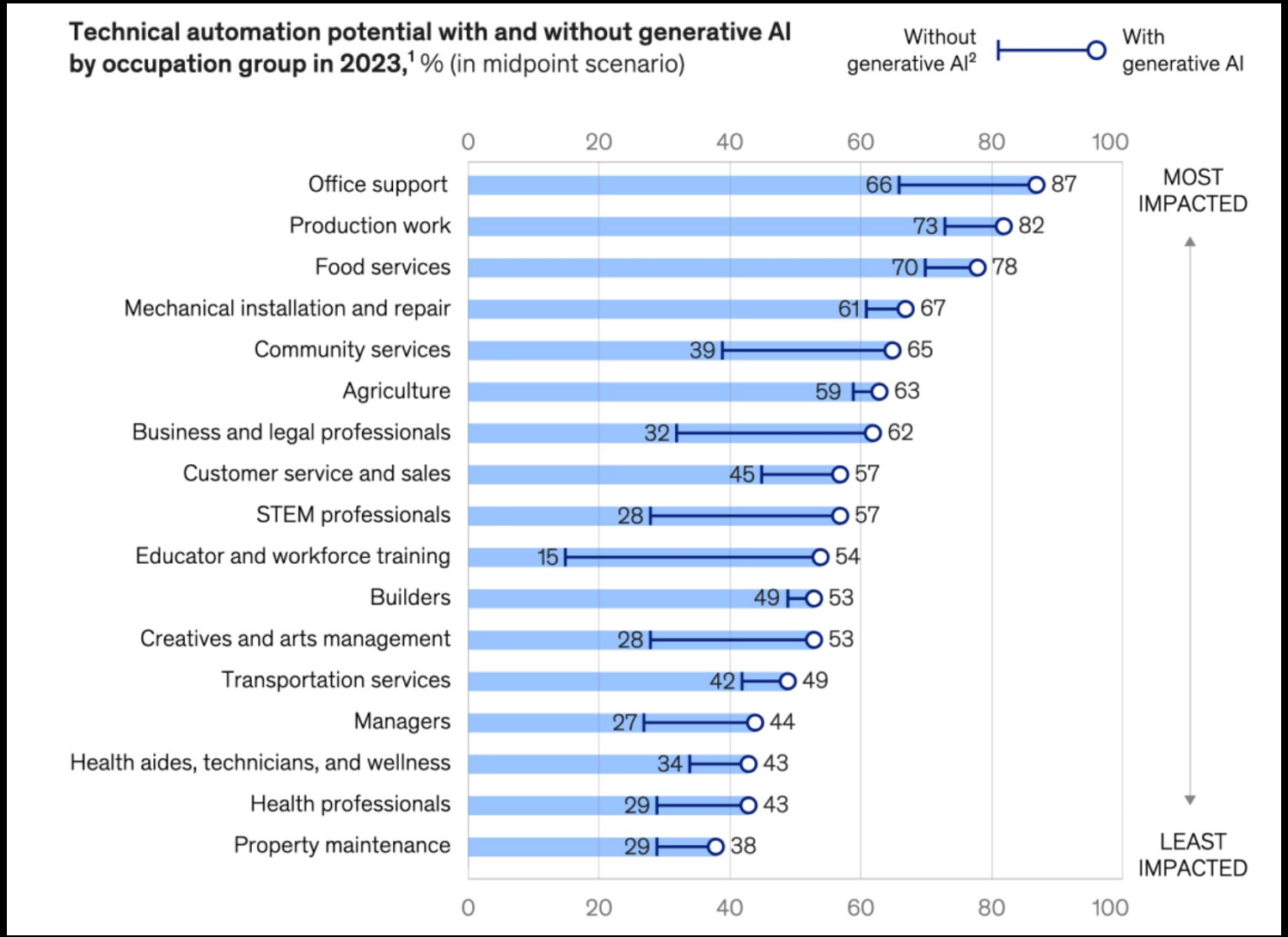
By **Annabelle Liang,** Business reporter

Getty Images

Artificial intelligence is set to affect nearly 40% of all jobs, according to a new analysis by the International Monetary Fund (IMF).


Technical automation potential with and without generative AI by occupation group in 2023,[1] % (in midpoint scenario)
Without generative AI[2]
With generative AI
0
20
40
60
80
100
Office support 66 87
Production work 73 82
Food services 70 78
Mechanical installation and repair 61 67
Community services 39 65
Agriculture 59 63
Business and legal professionals 32 62
Customer service and sales 45 57
STEM professionals 28 57
Educator and workforce training 15 54
Builders 49 53
Creatives and arts management 28 53
Transportation services 42 49
Managers 27 44
Health aides, technicians, and wellness 34 43
Health professionals 29 43
Property maintenance 29 38
MOST IMPACTED
LEAST IMPACTED

Jobs that will survive AI automation

STEM

Heavy equipment technicians

Aerospace engineers

Developers

CREATIVE

Chefs

Musicians

Advertising copywriters

EMOTIONAL IQ

Nurses/doctors

Therapists

Teachers

SOURCE: THE HECHINGER REPORT *10 JOBS THAT ARE SAFE FROM ROBOTS*, NESTA *CREATIVITY VS. ROBOTS*, MCKINSEY AND COMPANY *WHERE MACHINES COULD REPLACE HUMANS—AND WHERE THEY CAN'T (YET)*; ILLUSTRATION: ANDRESR/GETTY IMAGES

Algumas implicações para profissões auto-reguladas

- **Novos requisitos de competências**
  Literacia em IA
  interpretação de dados e gestão tecnológica

- **Desafios éticos e legais**
  IA pode perpetuar viéses, levantando questões éticas.
  Determinar a responsabilidade por erros da IA.
  Privacidade e segurança.

- **Desafios e implicações na regulação**
  Diretrizes para o uso seguro e ético da IA.
  Regulação adaptável para acompanhar os avanços tecnológico rápidos.

- **Impactos nos órgãos reguladores**
  IA como ferramenta de monitorização/supervisão
  Automação permite focar a supervisão humana em casos complexos.

1931

Robot With Mechanical Brain Thinks Up Story Plots

FORMERLY robots were merely mechanical devices that could perform a variety of stunts under the guidance of a human being, but now a robot has made its appearance that thinks, has a soul of a kind, creative imagination, and other qualities necessary for writing a modern stereotyped short story. This robot, the invention of Wycliffe Hill, a Los Angeles scenario writer, is declared to be able to build up millions of plots, no two alike, for magazine stories or movie plays.

Mr. Wycliffe Hill demonstrating his new story writing robot, which can think up any kind of plot with its mechanical brains.

Mr. Hill has equipped his robot with an index chart, divided into eight sections, one devoted to each of the eight elements of a story—background, character, obstacle, problem, predicament, complication, crisis and climax—and with an assortment of variations. The robot selects the material as required from this inexhaustible source and builds plots that could never be imagined by the author without the aid of the mechanical brain. Now if you want to become a successful author simply obtain a robot and put it to work.