

# What's the deal with ChatGPT?



**UC DAVIS**  
UNIVERSITY OF CALIFORNIA

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GG Computer Science  
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MA

Who is Martin Hilbert?



Martin Hilbert is a professor of Communication at the University of California, San Diego, and a renowned expert on the intersection of communication and technology. He has published numerous articles and books on the subject and has worked on measuring the amount of digital data created in the world. This work has earned him the nickname "the digital Aristotle."

OpenAI  
DALL·E

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Variations

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Model: GPT-4

HI

Are Large Language Models rather trained to sound like a human, or to speak the truth?



Large language models like GPT-4 are trained to generate human-like text based on the data they were trained on. Their main aim is not to "speak the truth" or to propagate any kind of falsehood. Instead, they generate responses based on patterns they've learned during training.



Google cautions against 'hallucinating' chatbots



Worse



Same



**Part 1:** From Digitalization to Algorithmification

*Where do we  
come from?*

**Part 2:** The AI paradigm: Knowledge Automation

*Where are we at?*

**Part 3:** Generative AI

*Where do we go?*

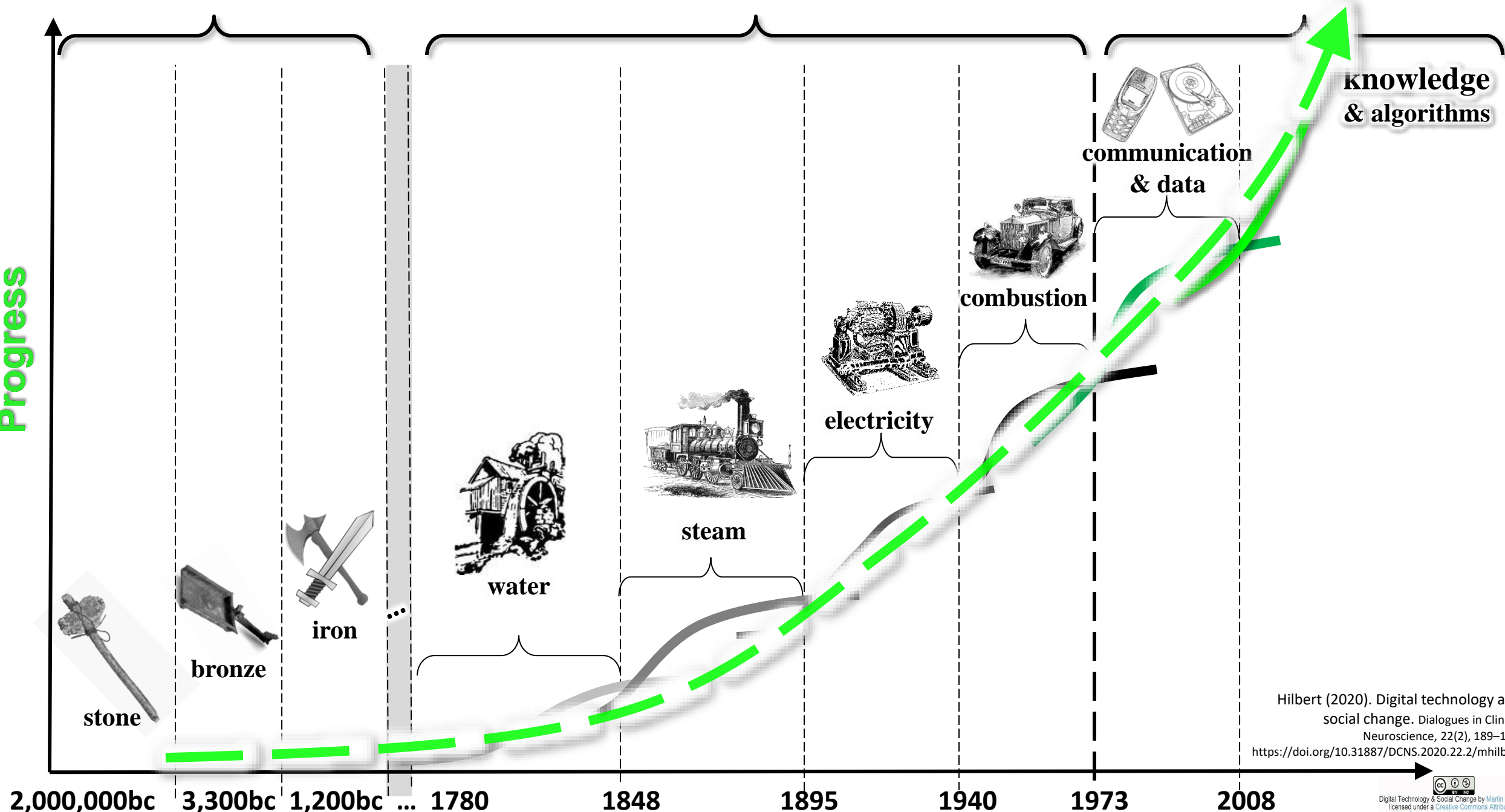


Progress

transforming matter

transforming energy

transforming information



Hilbert (2020). Digital technology and social change. Dialogues in Clinical Neuroscience, 22(2), 189–194.  
<https://doi.org/10.31887/DCNS.2020.22.2/mhilbert>

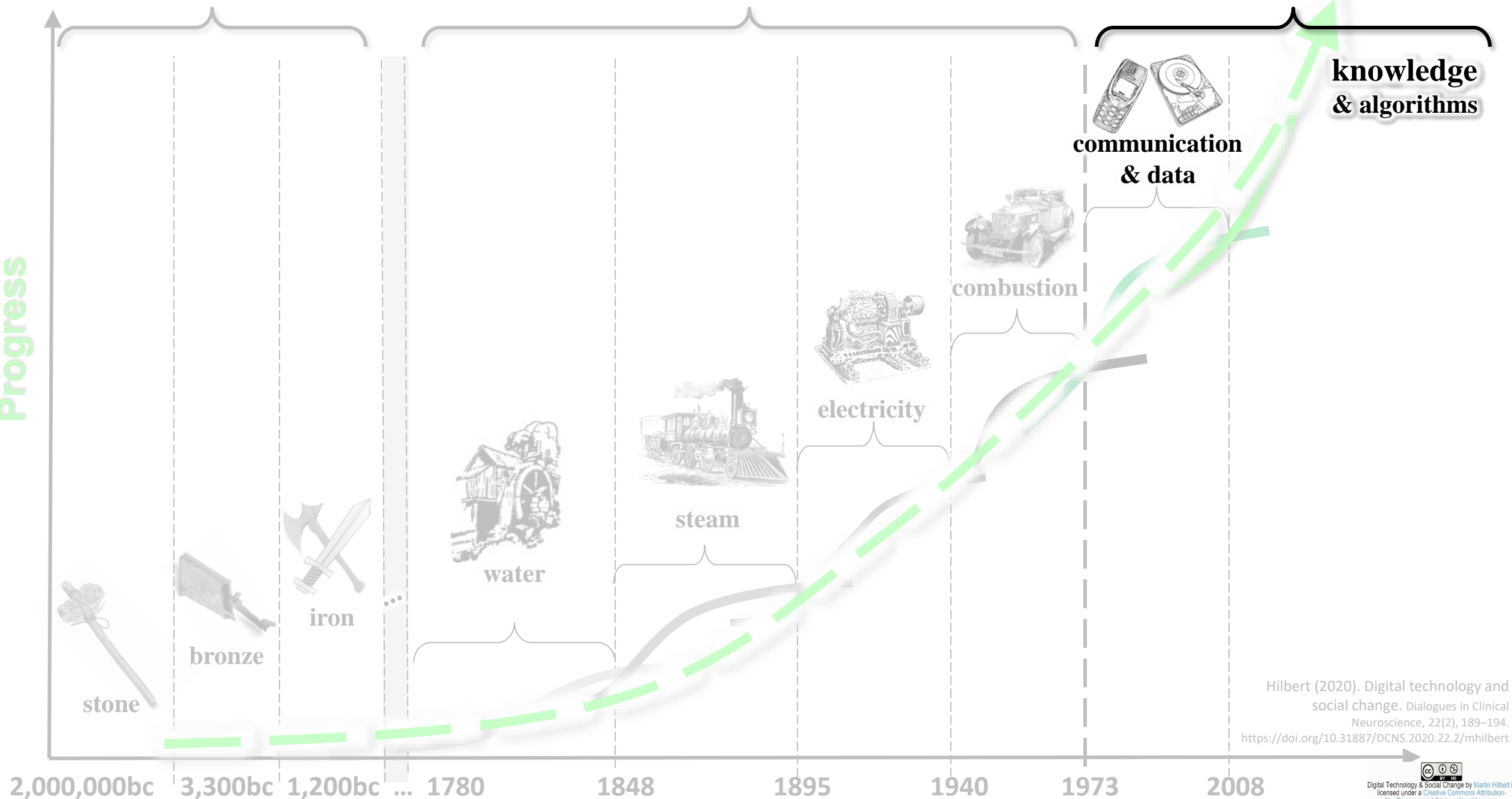


Progress

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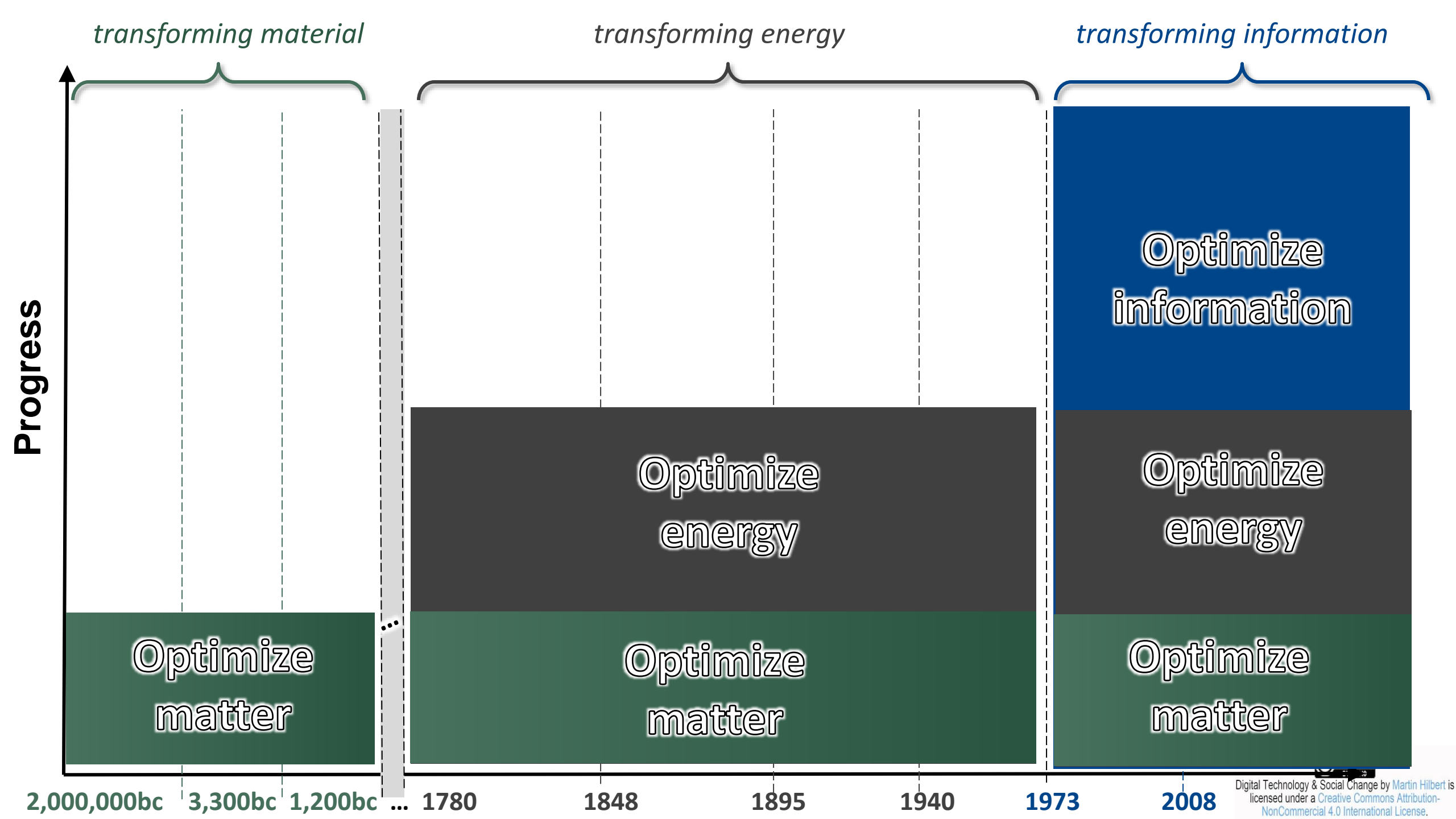
transforming information



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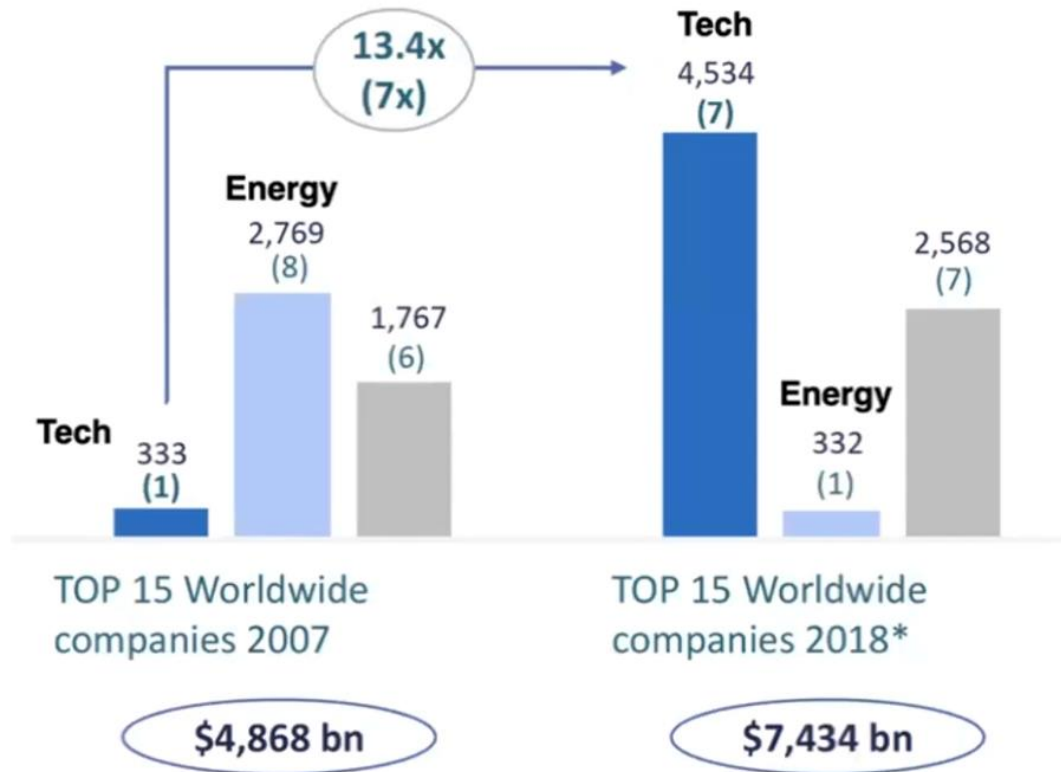
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# World's most valuable brands Fortune 500

## Relevance by industry has dramatically changed during the last decade

Market Cap in \$bn (# companies)








# 2023






	Rank	Brand
	#1	Apple
	#2	Google
	#3	Microsoft
	#4	Amazon
	#5	Facebook

# World's most valuable brands Fortune 500






## 2018

Rank	Brand
	#1 Apple
	#2 Google
	#3 Microsoft
	#4 Facebook
	#5 Amazon






## 2019

Rank	Brand
	#1 Apple
	#2 Google
	#3 Microsoft
	#4 Amazon
	#5 Facebook

## 2020

Rank	Brand
	#1 Apple
	#2 Google
	#3 Microsoft
	#4 Facebook
	#5 Amazon

## 2021

Rank	Brand
	#1 Apple
	#2 Google
	#3 Microsoft
	#4 Amazon
	#5 Facebook



Gillings, Hilbert & Kemp (2016)

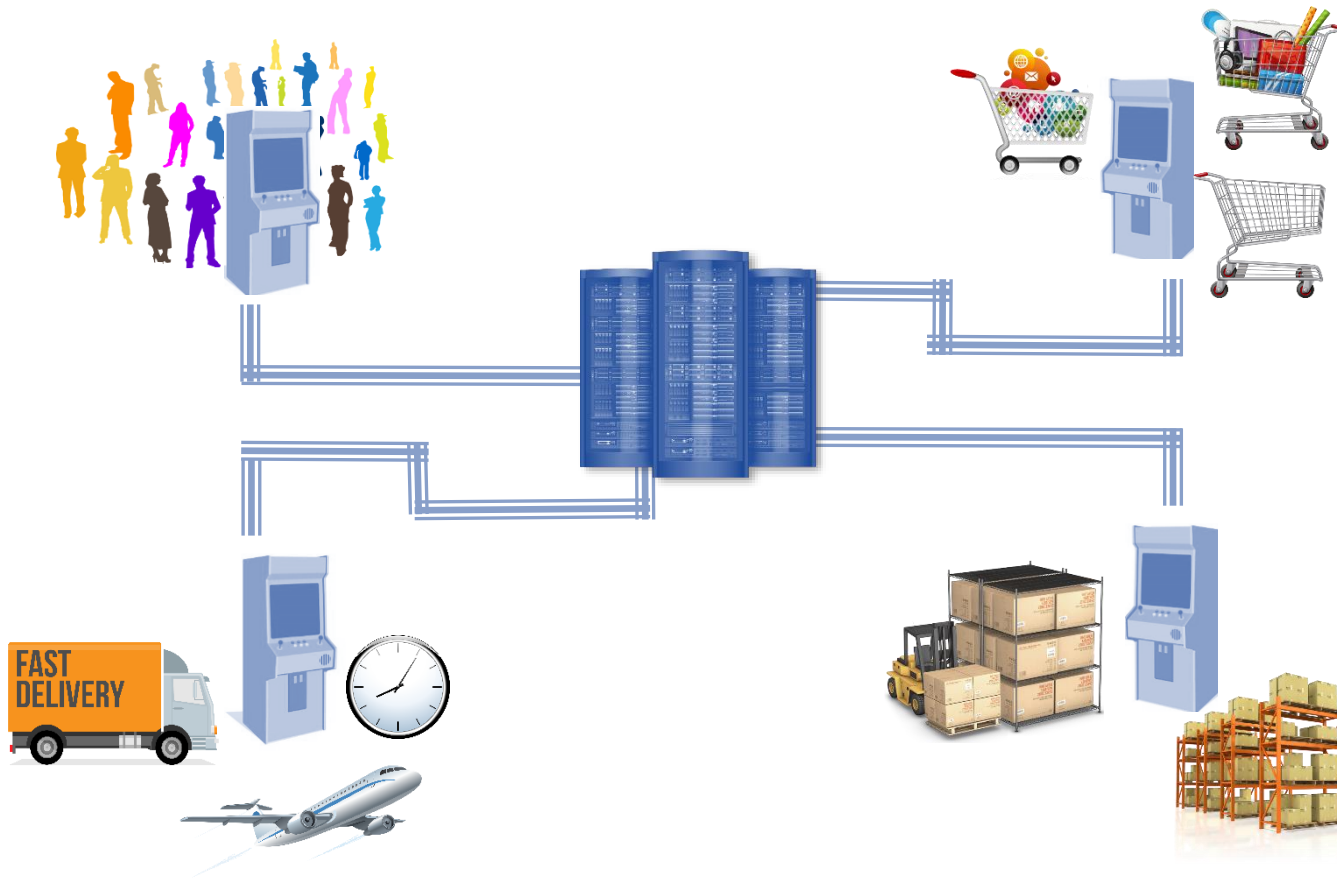
Information in the Biosphere: Biological and Digital Worlds.

*Trends in Ecology & Evolution (TREE)*, 31(3), 180–189



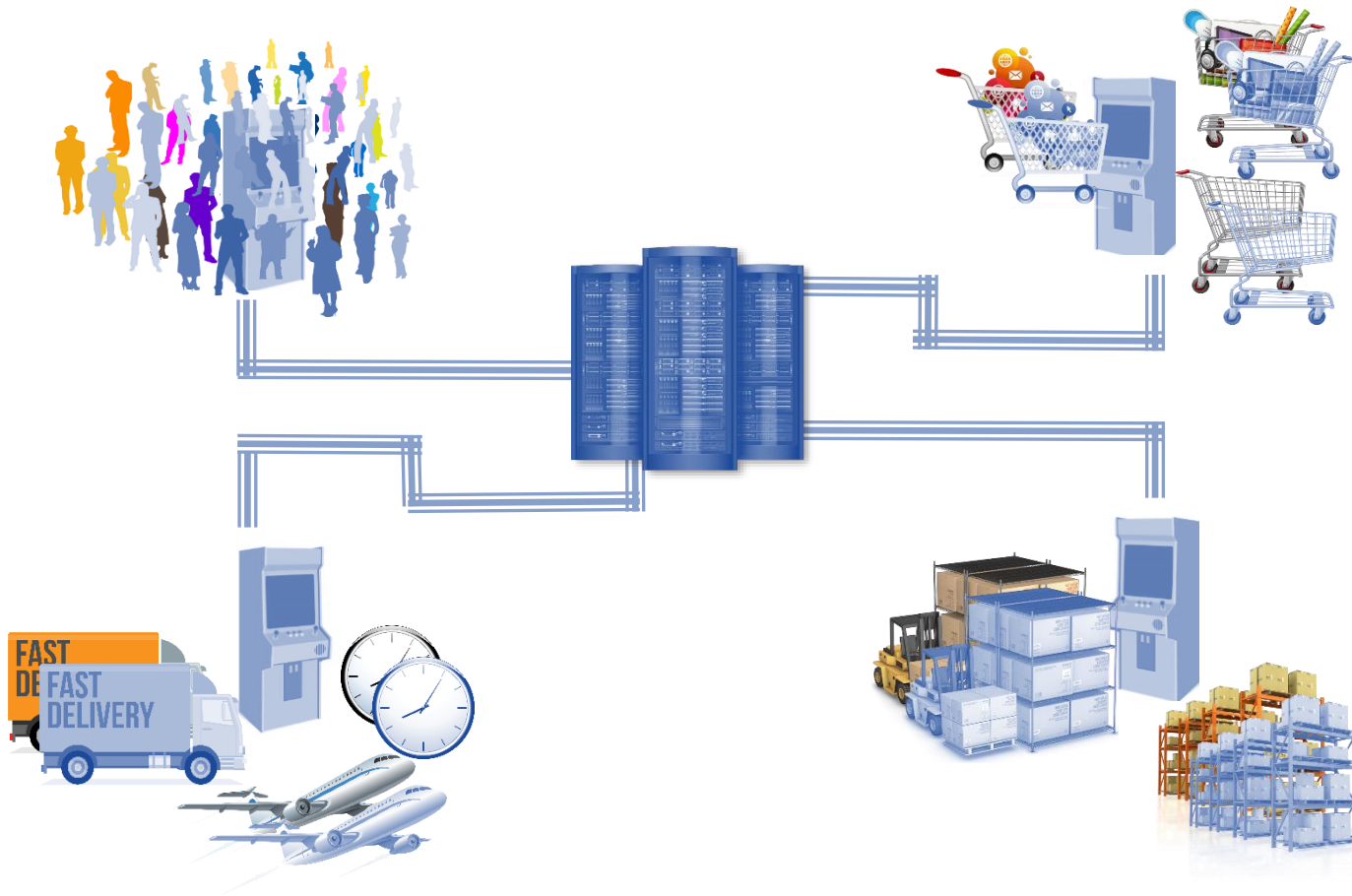
## Exmpl: goods (secondary sector of the economy)

amazon<sup>®</sup>



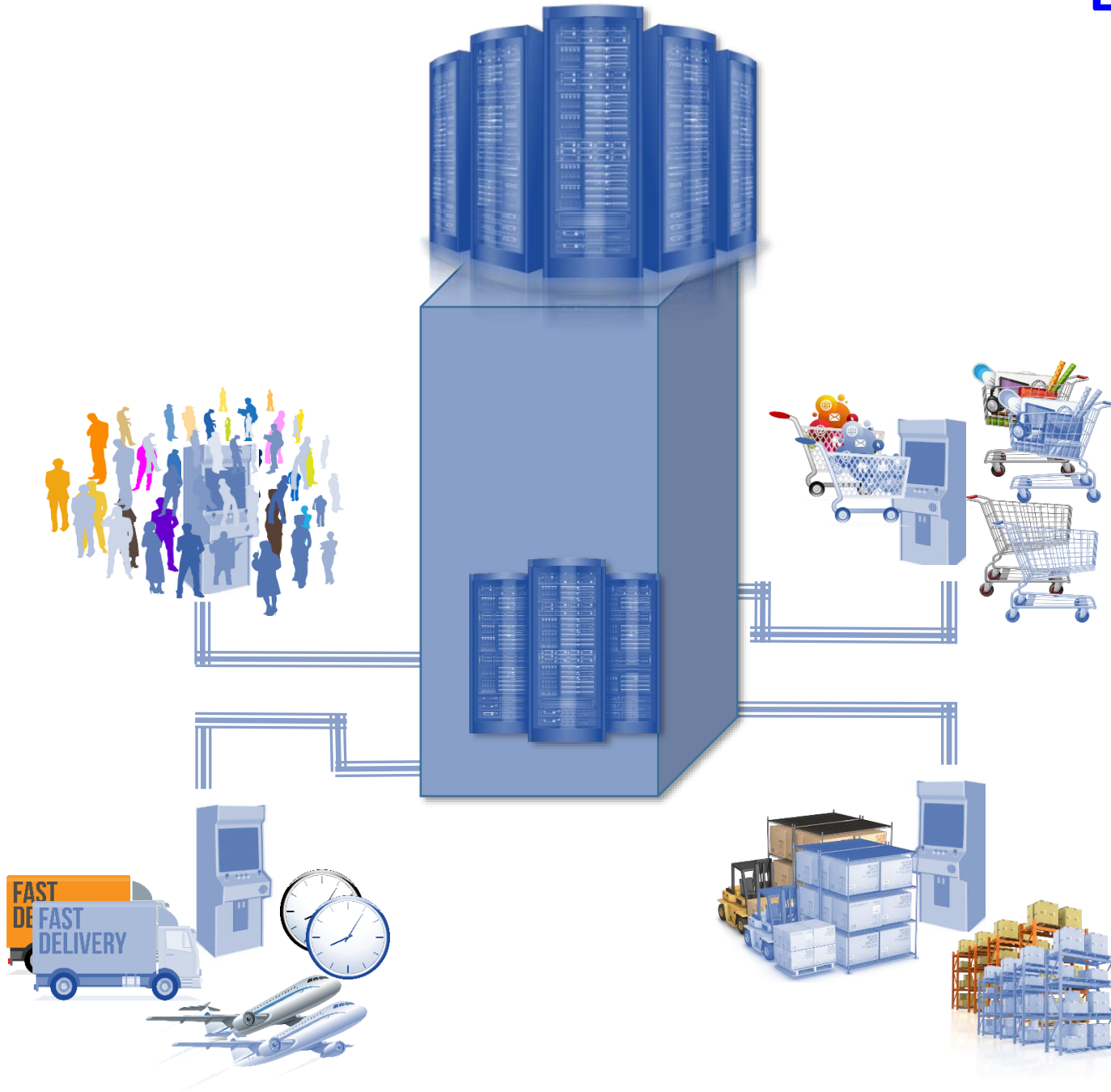
## Exmpl: goods (secondary sector of the economy)

amazon<sup>®</sup>



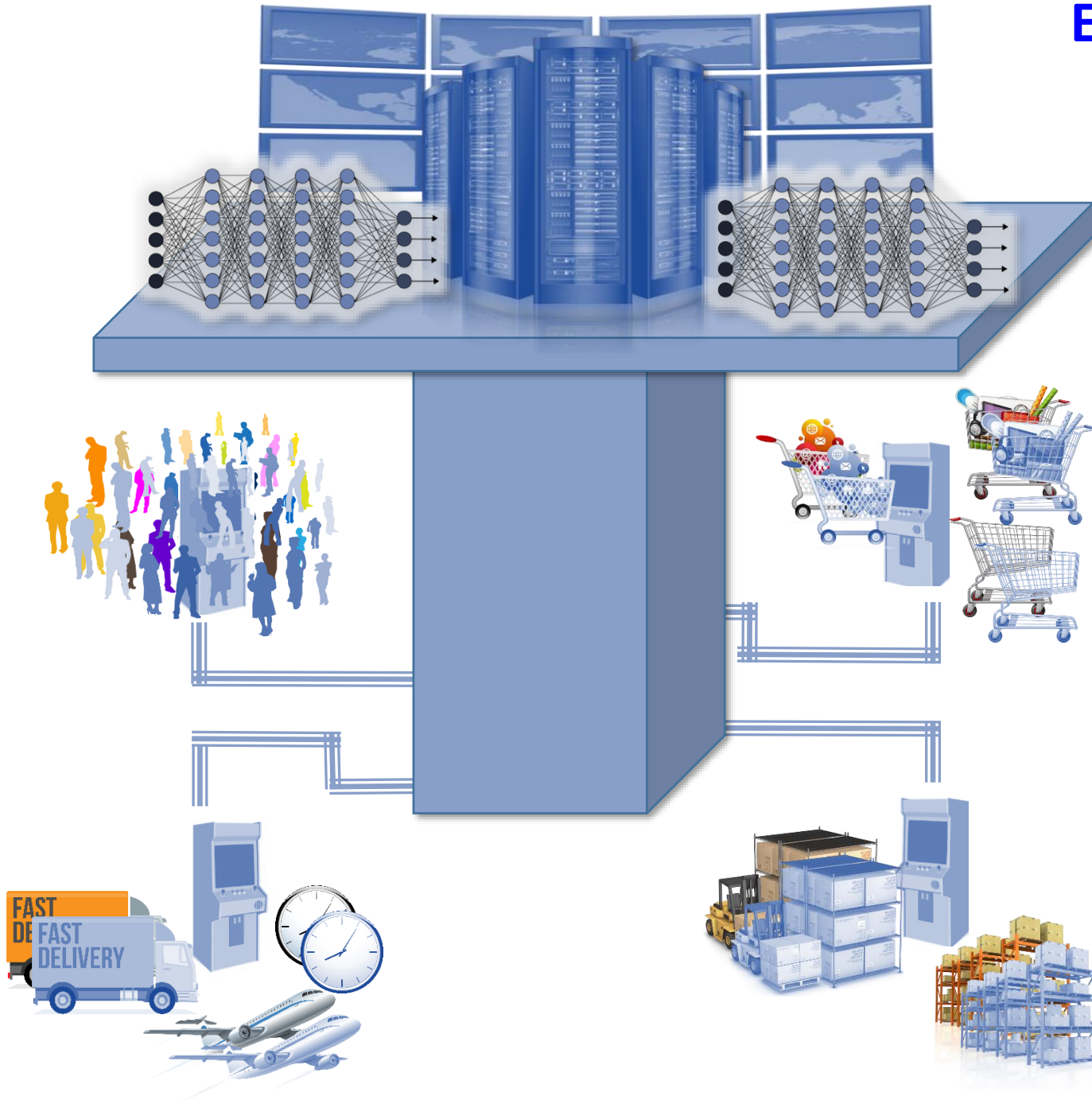
Exmpl: goods (secondary sector of the economy)

amazon®

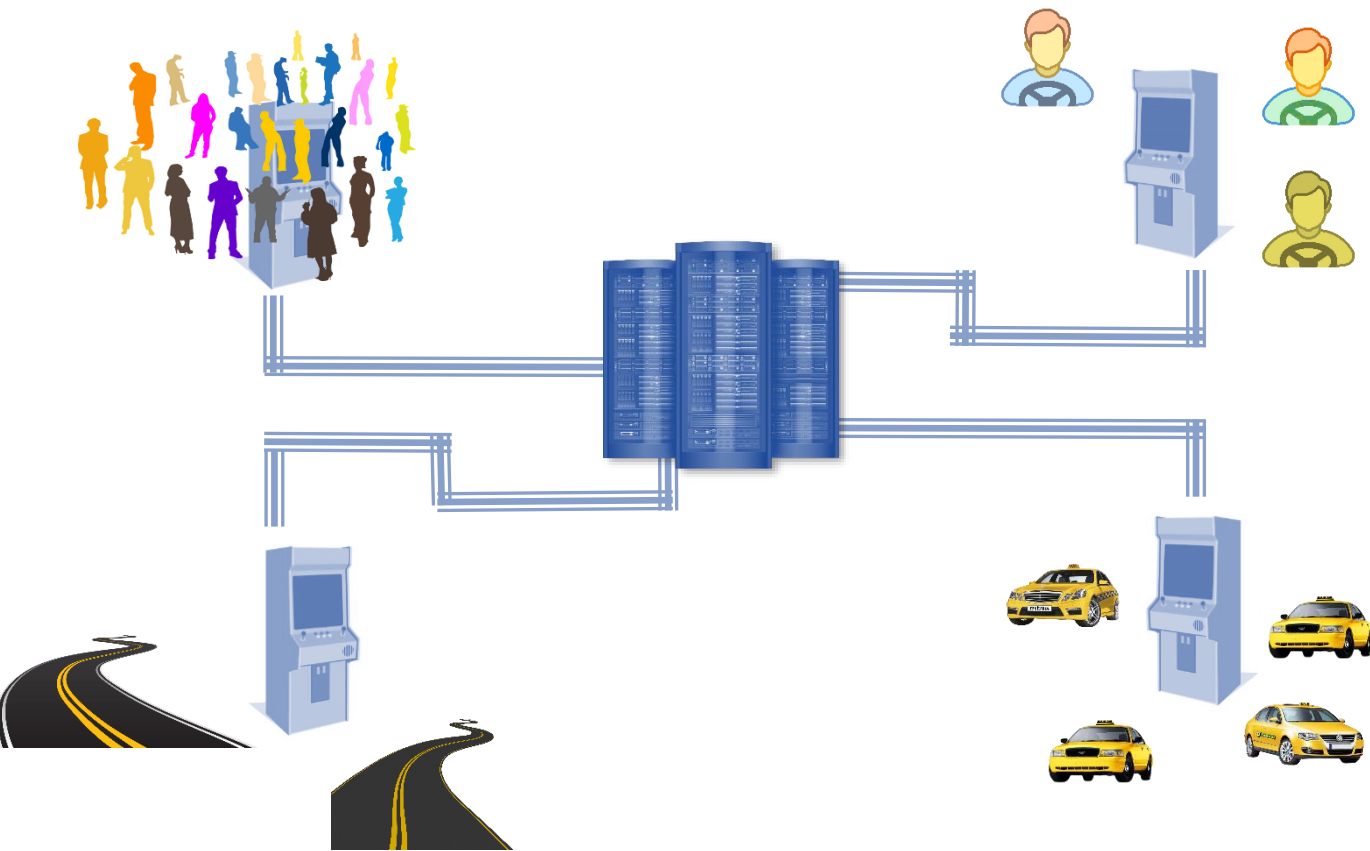


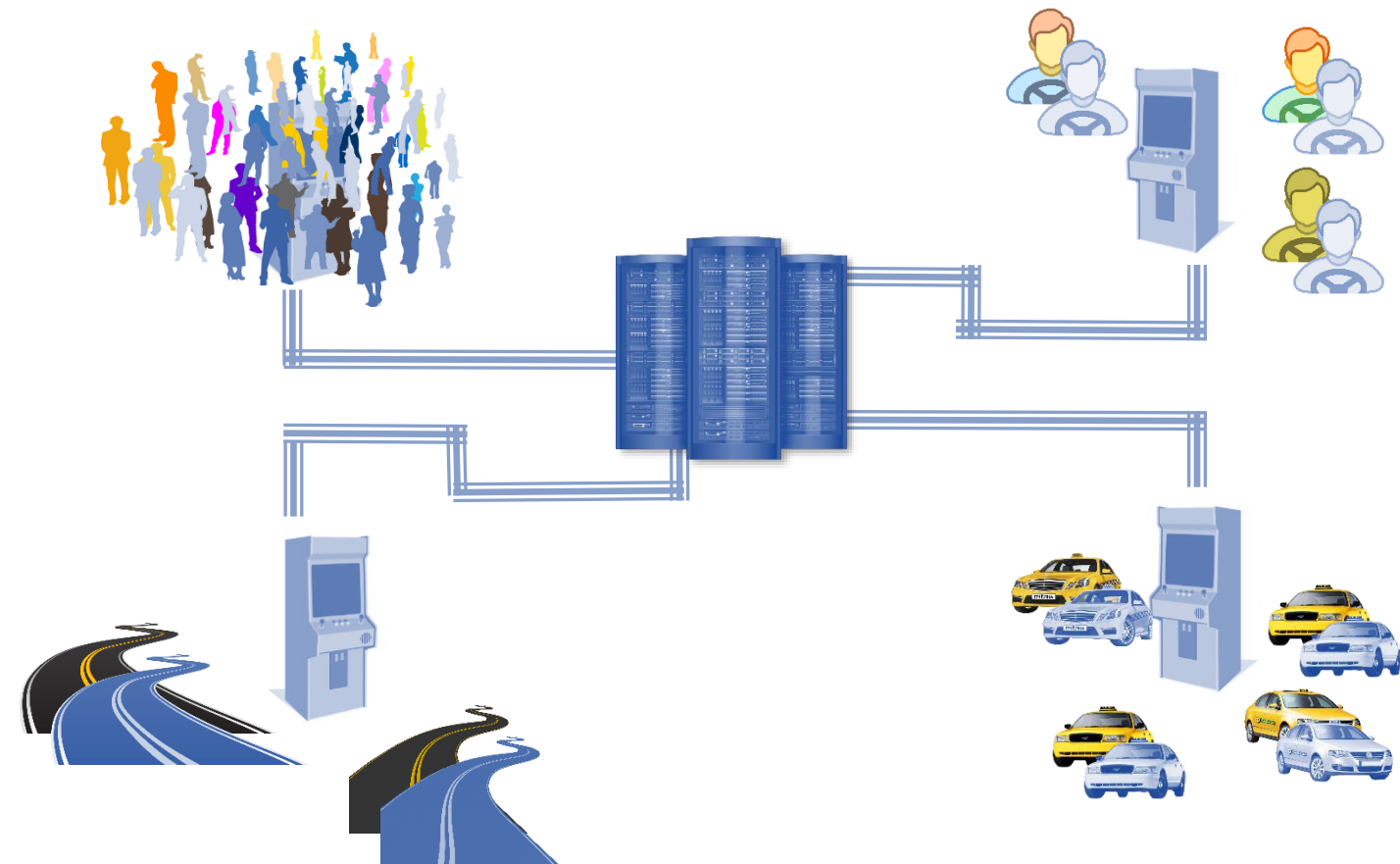
Exmpl: goods (secondary sector of the economy)

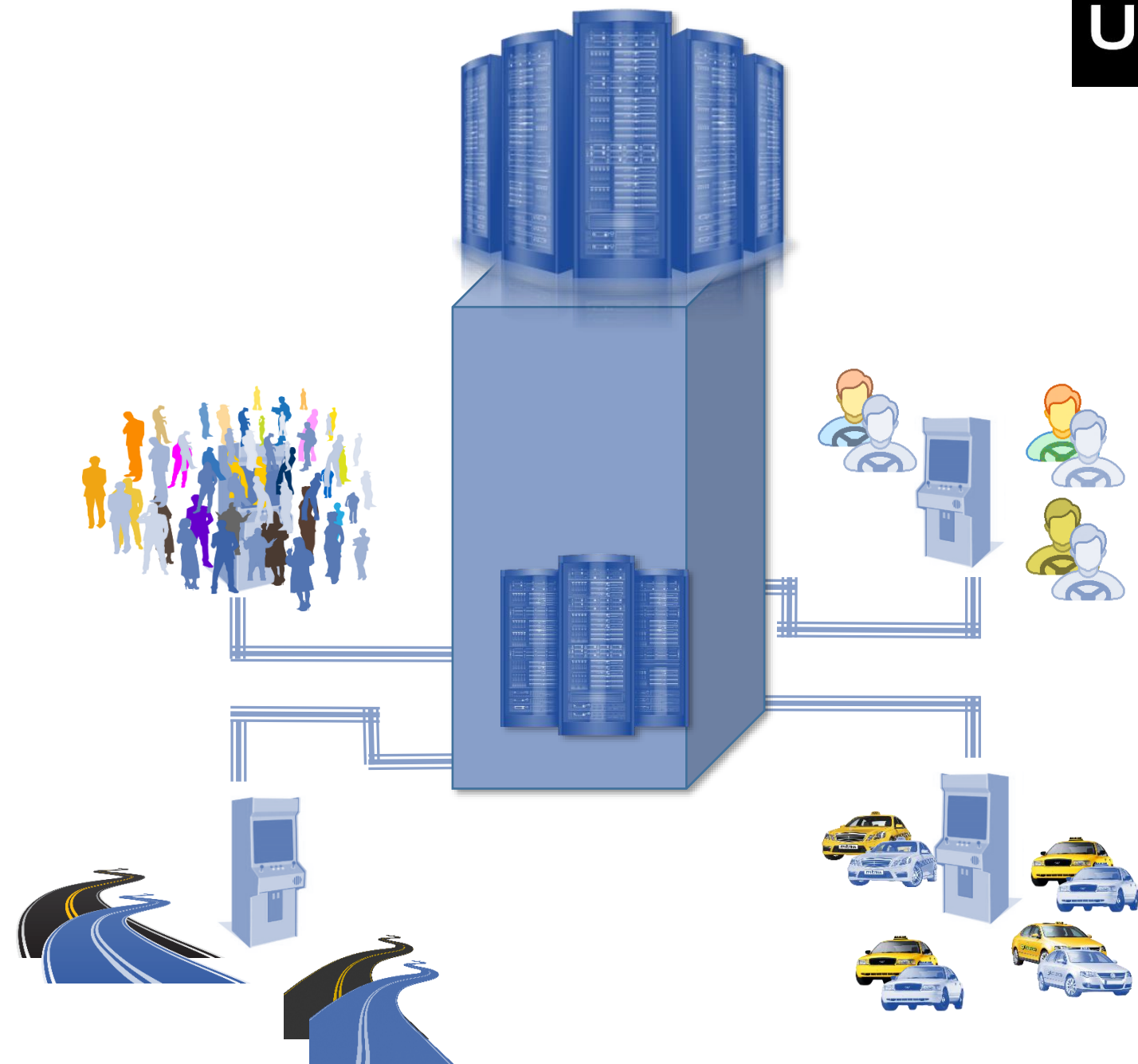
amazon®



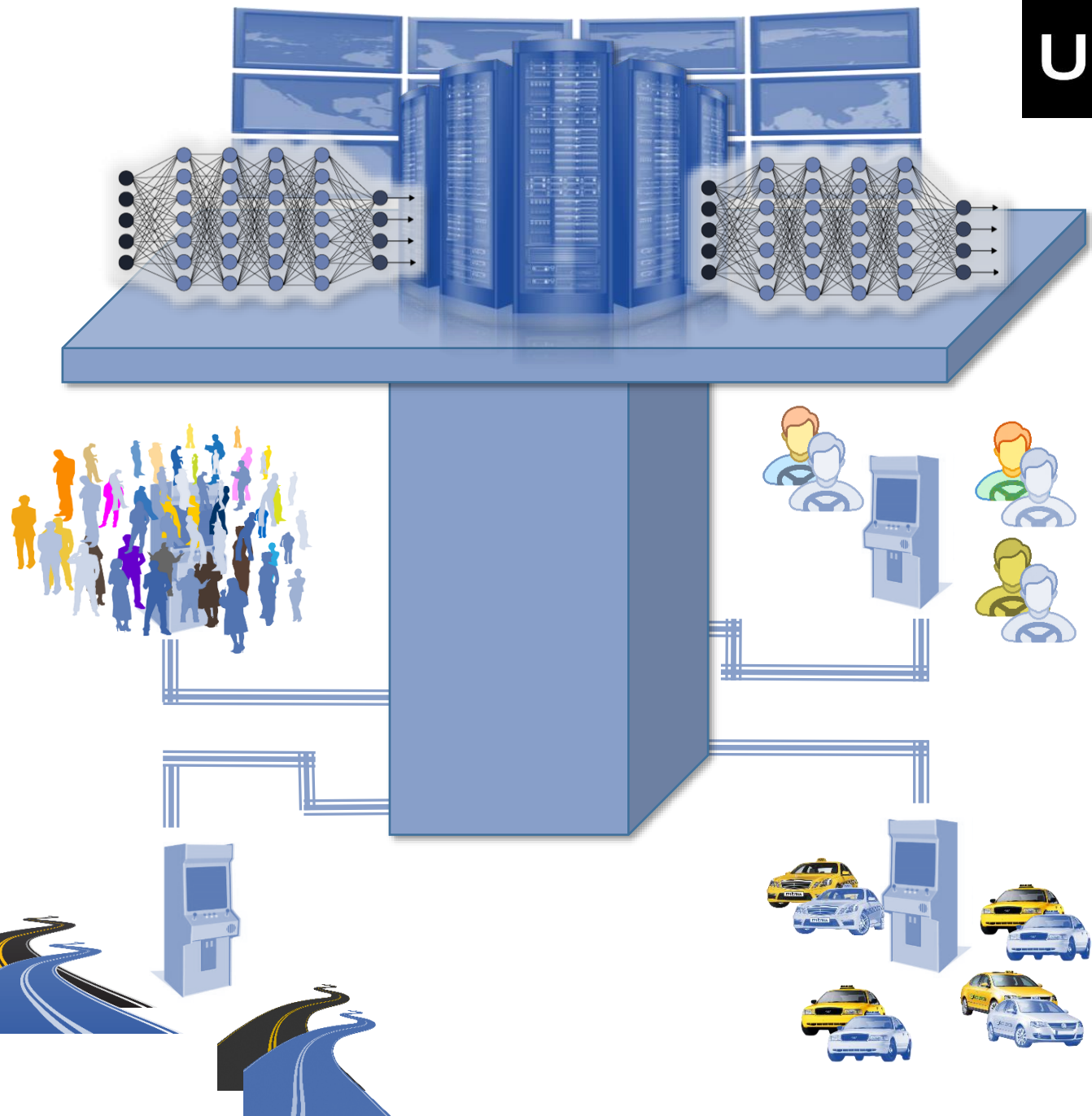








# UBER





## Exmpl: services (tertiary sector of the economy)



Revenue<sub>(2021-22)</sub>: US\$12 billion

2010s

vs.

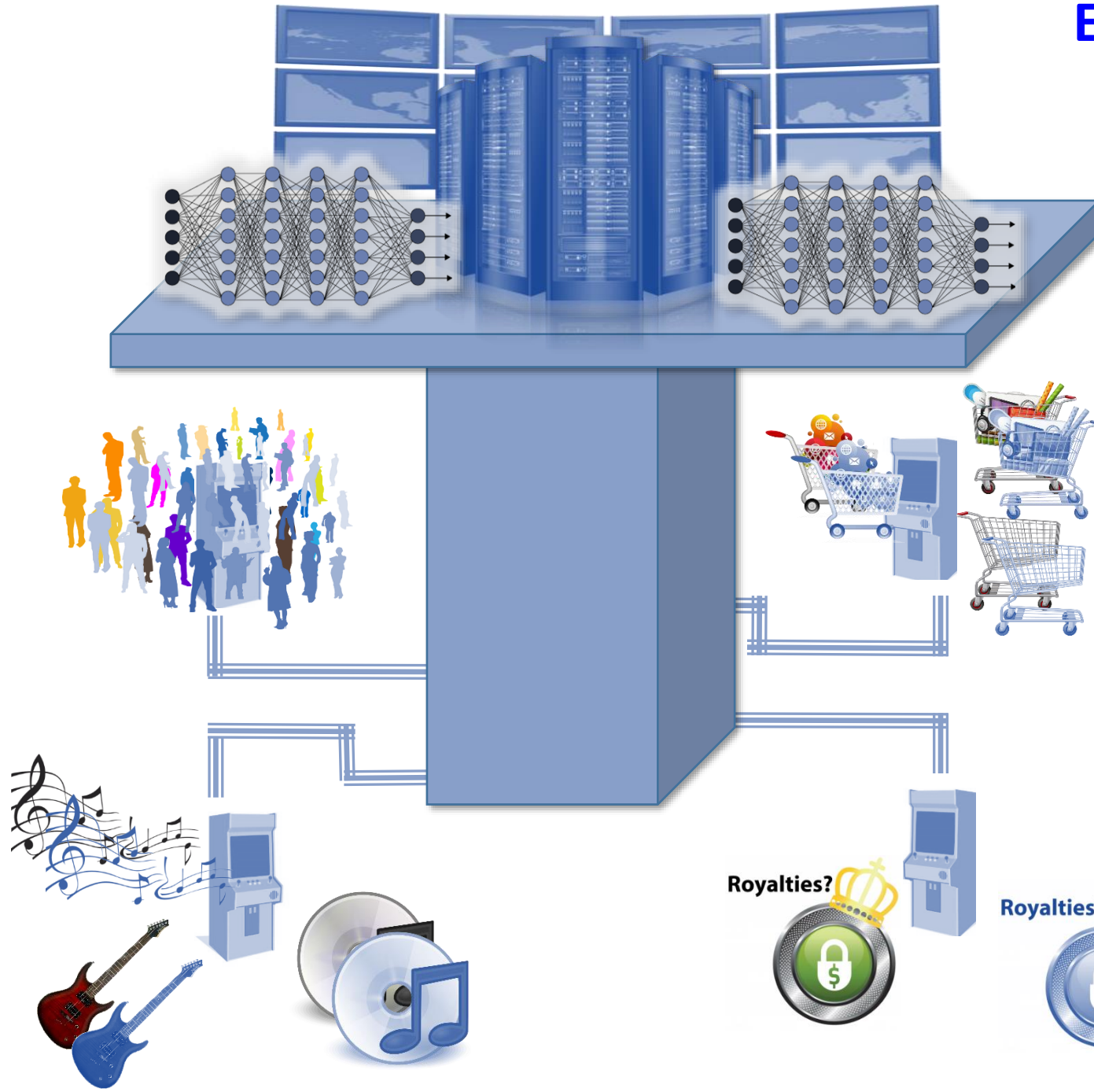
1920s

Revenue<sub>(2021-22)</sub>: US\$8 billion



Owner of "Happy Birthday to you"  
Patty and Mildred J. Hill, 1893

SONY MUSIC

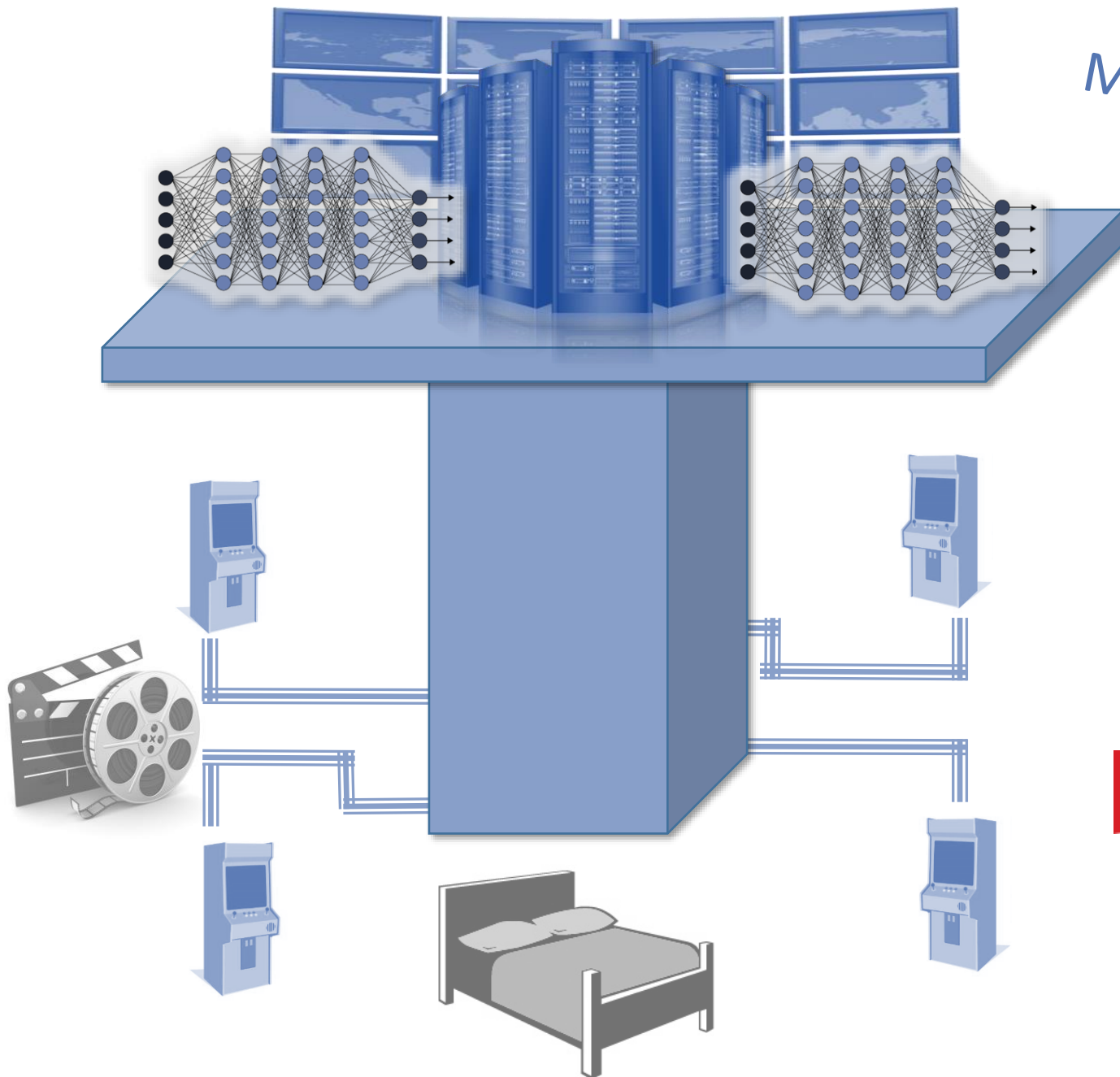


Royalties?



Royalties?





Mission control algorithms



amazon shopify

Uber

Alibaba Group  
阿里巴巴集团

salesforce

BOOKING  
HOLDINGS

ebay  
Etsy

instacart

DOORDASH

airbnb

GRUBHUB

ACTIVISION  
BLIZZARD

NETFLIX

zoom

facebook

Zillow

Spotify

Google News



**Part 1:** From Digitalization to Algorithmification

*Where do we  
come from?*

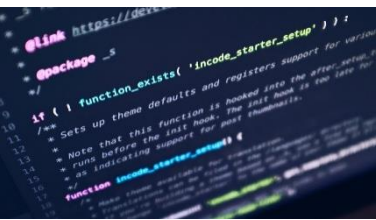
**Part 2:** The AI paradigm: Knowledge Automation

*Where are we at?*

**Part 3:** Generative AI

*Where do we go?*

# AI's Machine Learning paradigm



Data input

Algorithm



Goal output

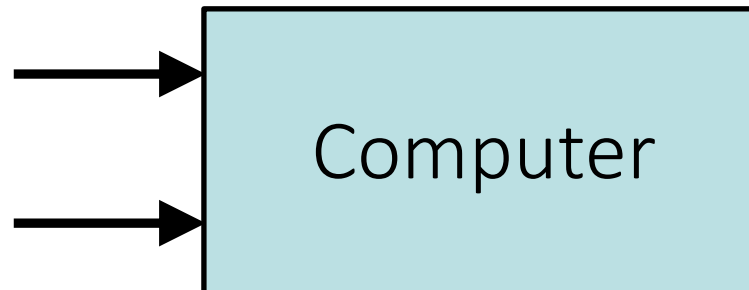


$$2 * 1 * 2 * 3 = 12$$

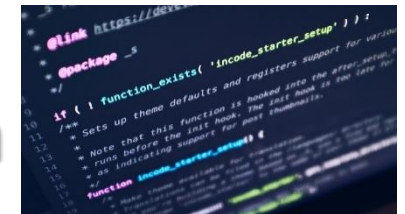


Data input

$$(2 + 1)^2 + 3 = 12$$



Algorithm



Goal output

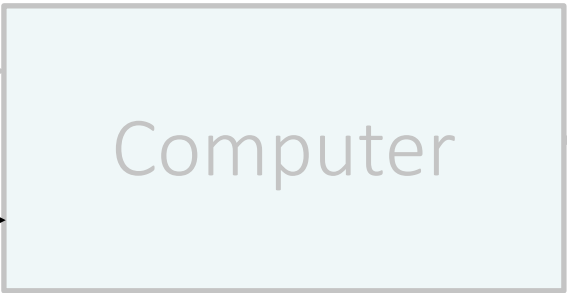




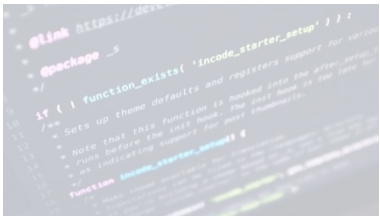
# Goal Families: supervised



Data input



Algorithm



Classification:

Goal output

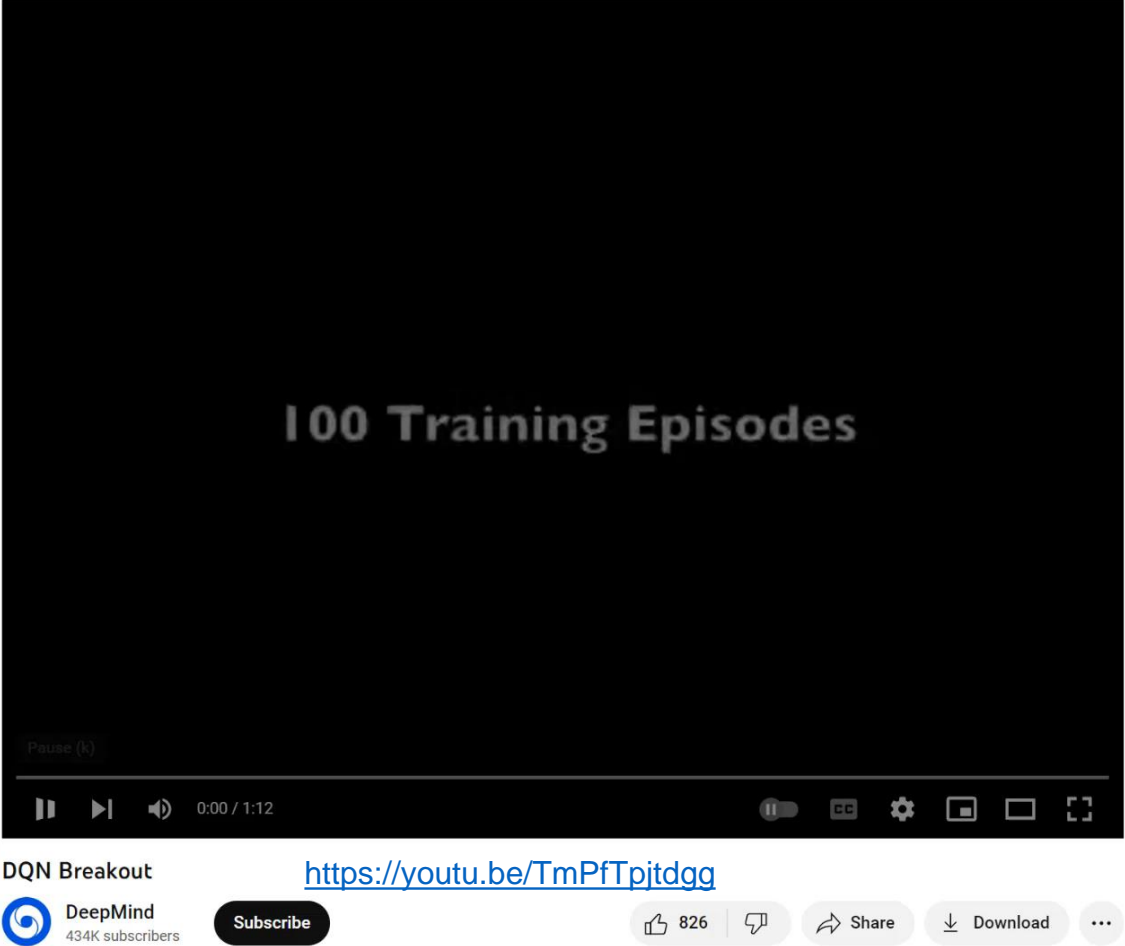
Supervised ML



Like

Goal Families: reinforced

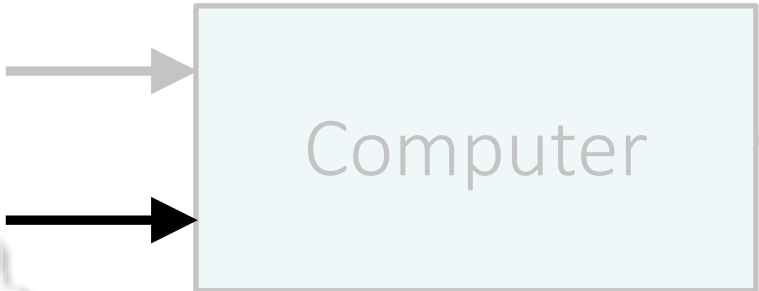
RLHF:  
Reinforcement  
Learning from  
Human  
Feedback



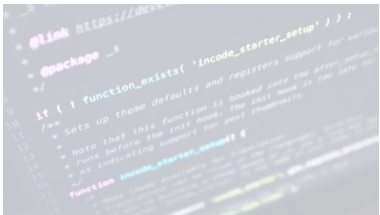
After 2h: never misses  
After 4h: becomes creative



Data input



Algorithm

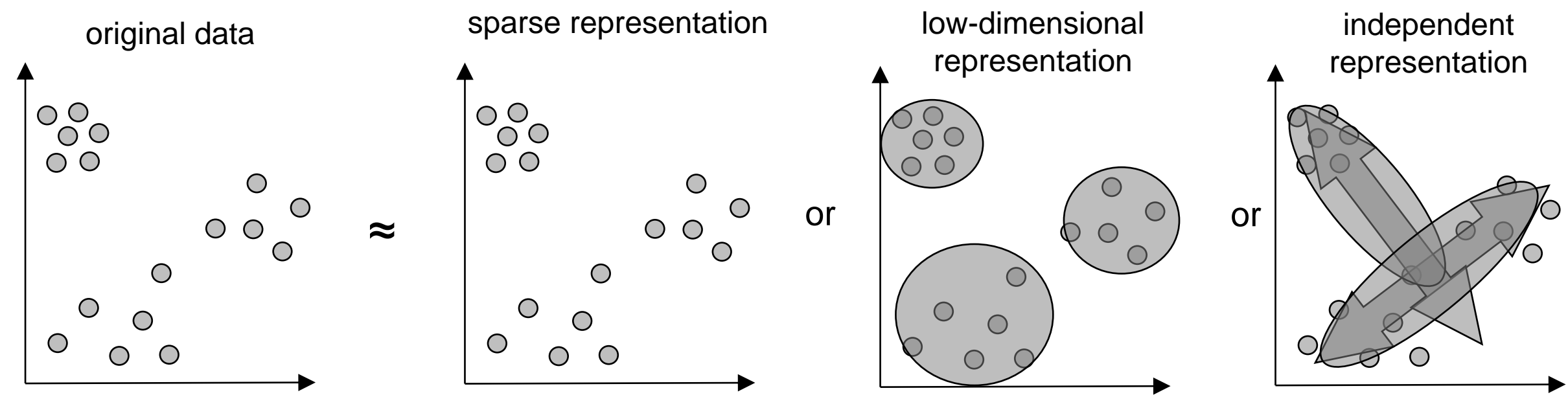


**Objective:**  
**Reinforcement ML**

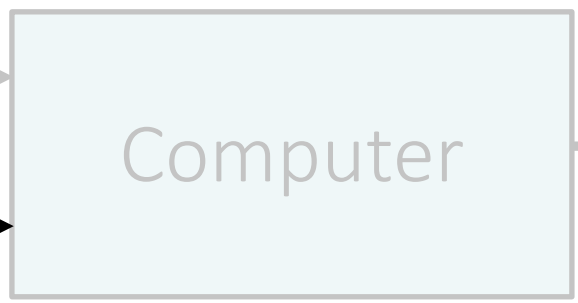


Goal output

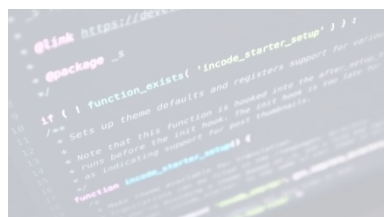
# Goal Families: unsupervised



Data input



Algorithm



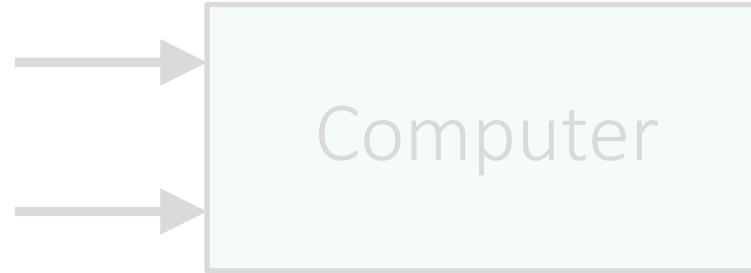
**Pattern:**  
Like Goal output  
**Unsupervised ML**

# AI's Machine Learning paradigm

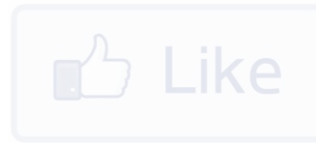


Data input

Algorithm



Goal output

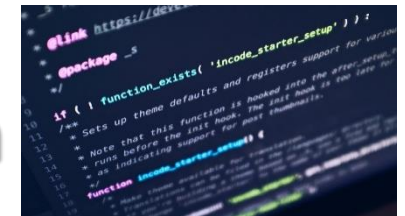


Data input

Goal output



Algorithm



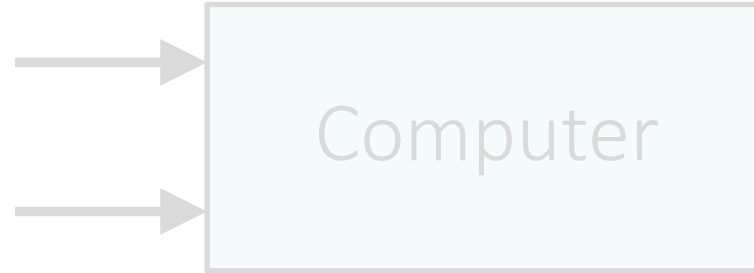


# AI's Machine Learning paradigm

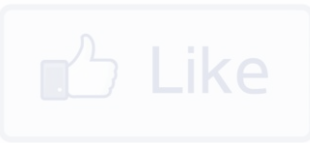


Data input

Algorithm



Goal output



$$2 * 1 * 2 * 3 = 12$$



$$2 ? 1 ? 2 ? 3 = 12$$

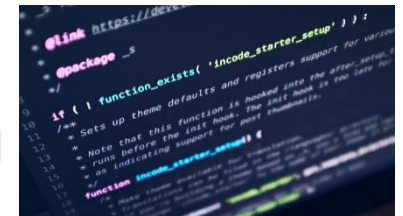


Data input

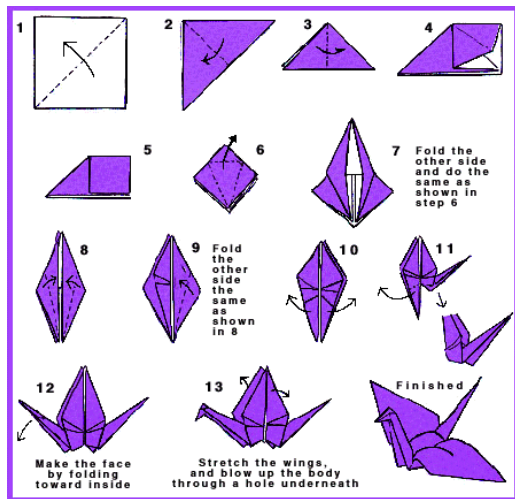
Goal output



Algorithm







WARM UP oven to 400° F

Mix TOGETHER :

- 1/4 c Flour
- 3/4 c Corn Meal
- 1/4 c Sugar
- 2 teaspoons baking powder
- 1/4 teaspoon salt

then stir in :

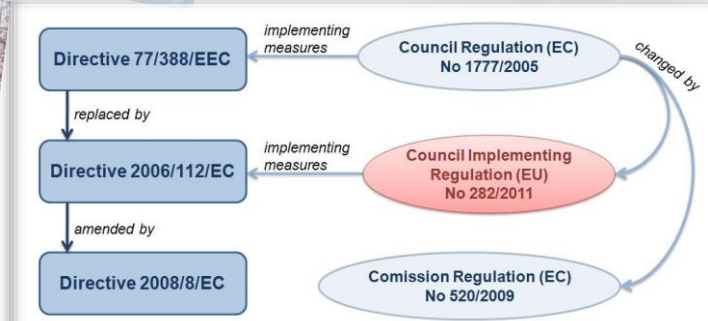
- 1 c milk
- 1/4 c olive oil
- 1 egg (beaten)

pour batter into  
bake for 25 min  
in 8" or 9" baking  
pan with corn e  
don't bake the

# Algorithms: recipes we live by

“An algorithm is an ordered set of unambiguous, executable steps that defines a terminating process”

(J.G. Brookshear, Computer Science, ed. 10, 2009)



PLANNING AND CODING OF PROBLEMS  
FOR AN  
ELECTRONIC COMPUTING INSTRUMENT

By

Herman H. Goldstine

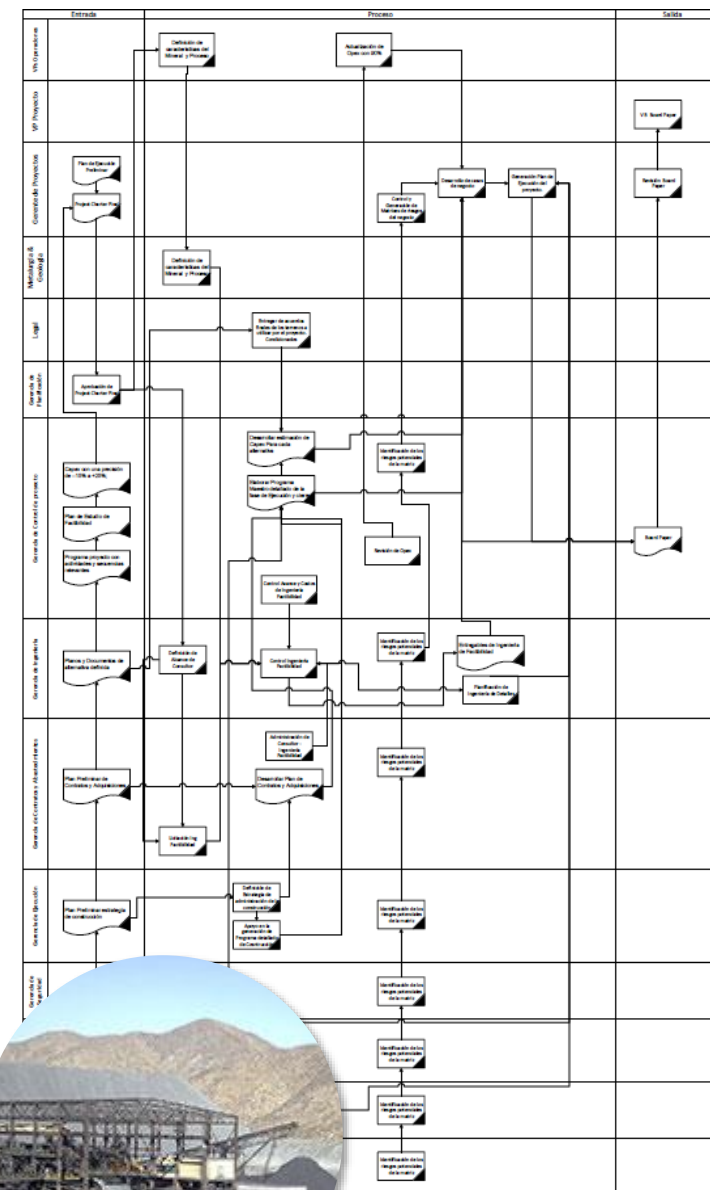
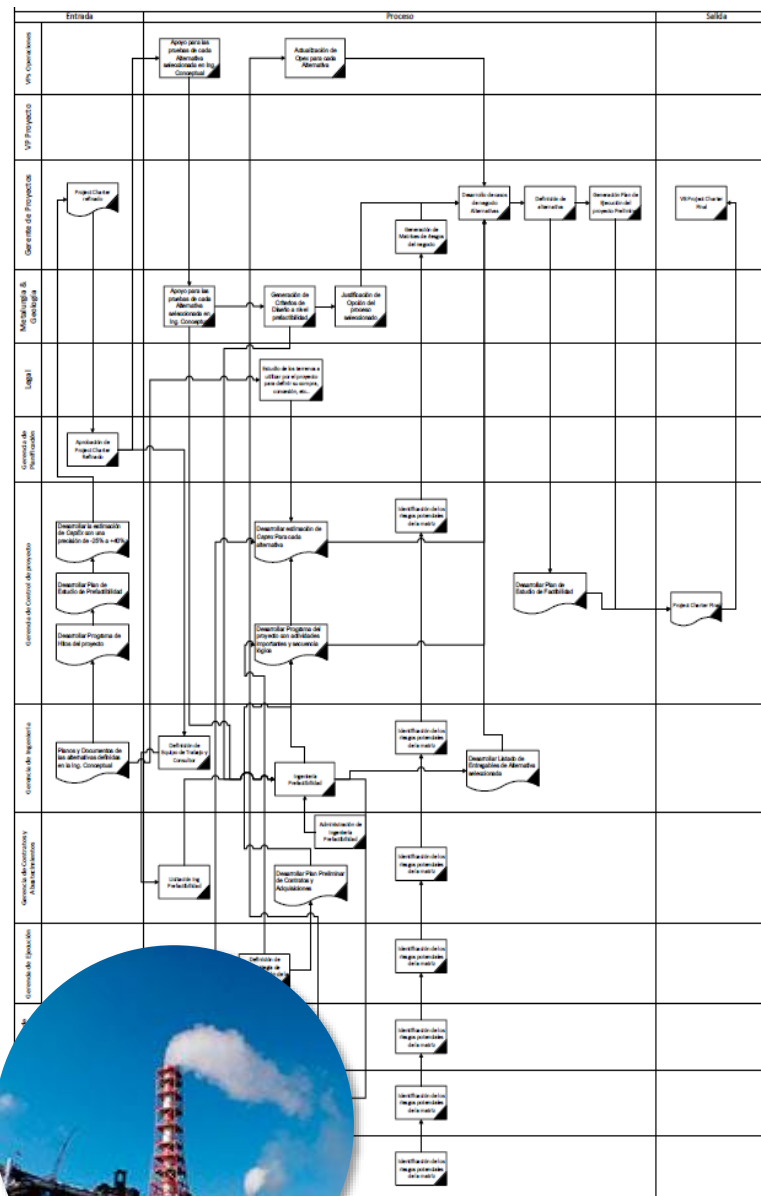
John von Neumann

Report on the Mathematical and Logical Aspects of an  
Electronic Computing  
Instrument

Part II, Volume II

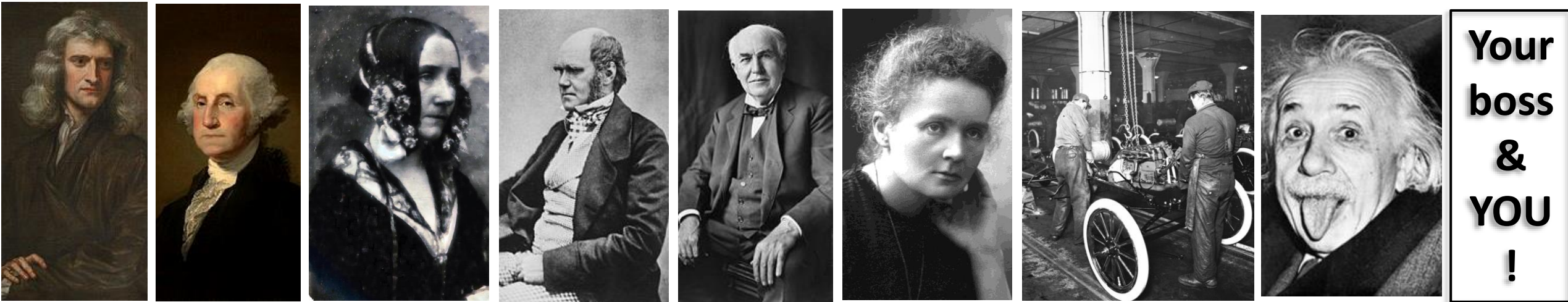
1948

The Institute for Advanced Study  
Princeton, New Jersey  
1948





# AI's Machine Learning paradigm

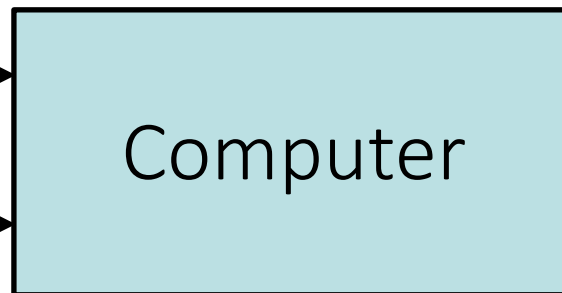


Your  
boss  
&  
YOU  
!

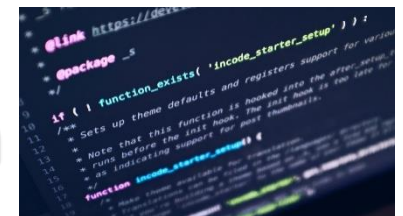


Data input

$$2 \text{ ? } 1 \text{ ? } 2 \text{ ? } 3 = 12$$



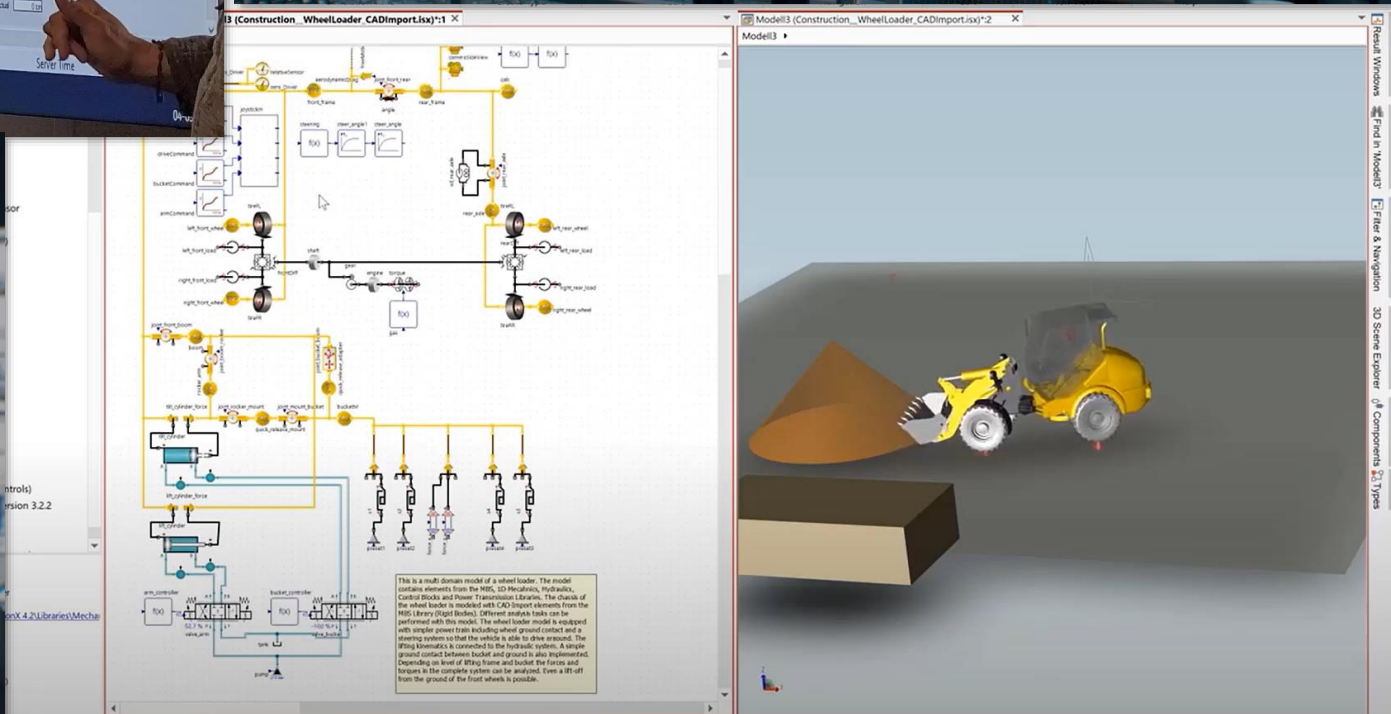
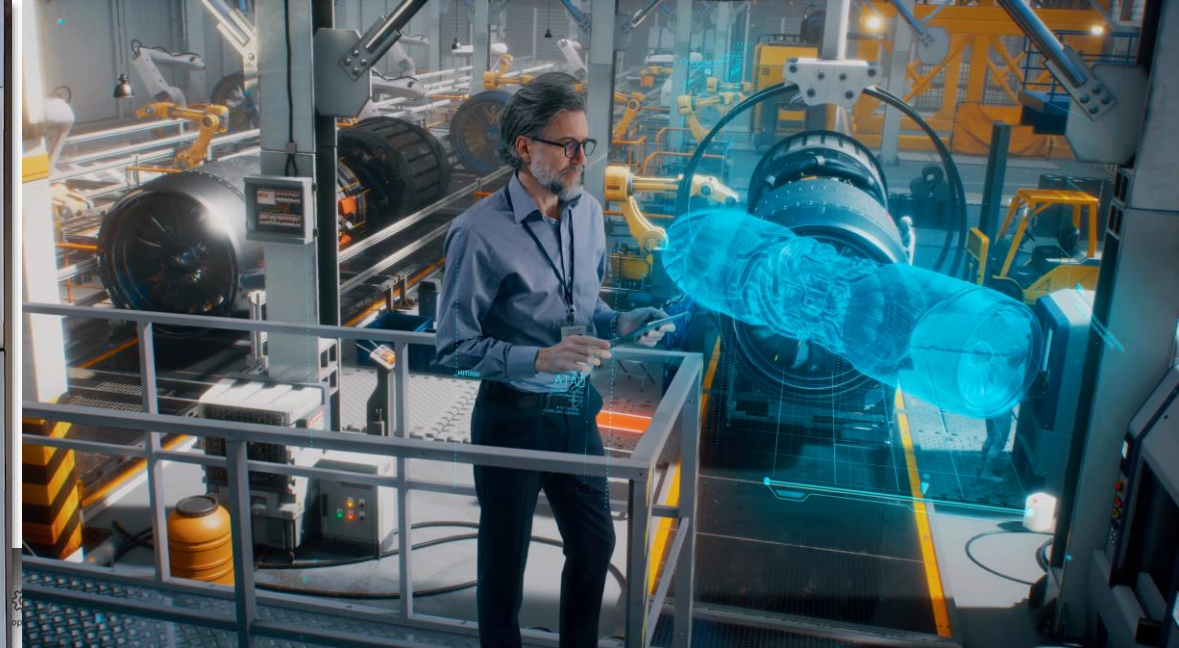
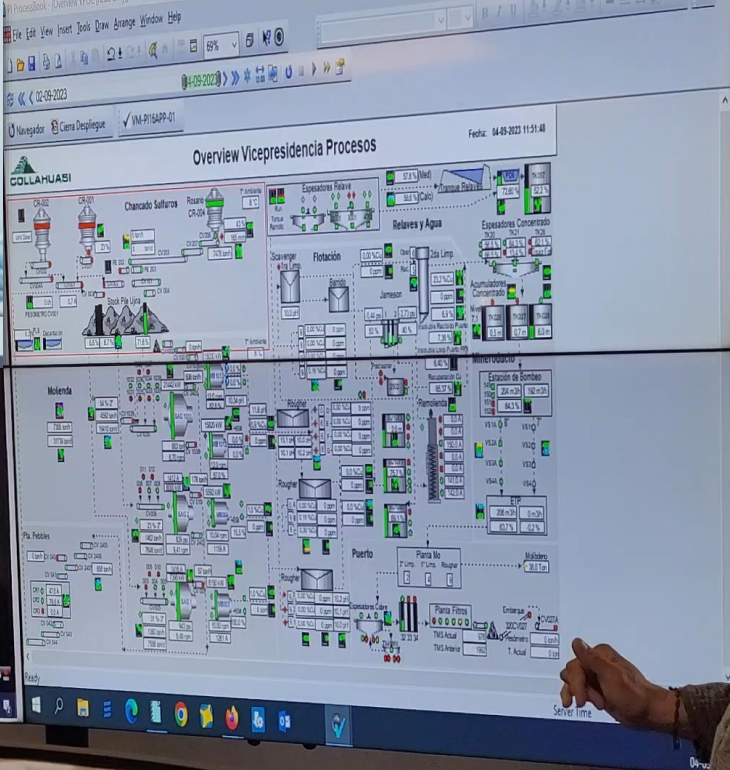
Algorithm



Like

Goal output





**Part 1:** From Digitalization to Algorithmification

*Where do we  
come from?*

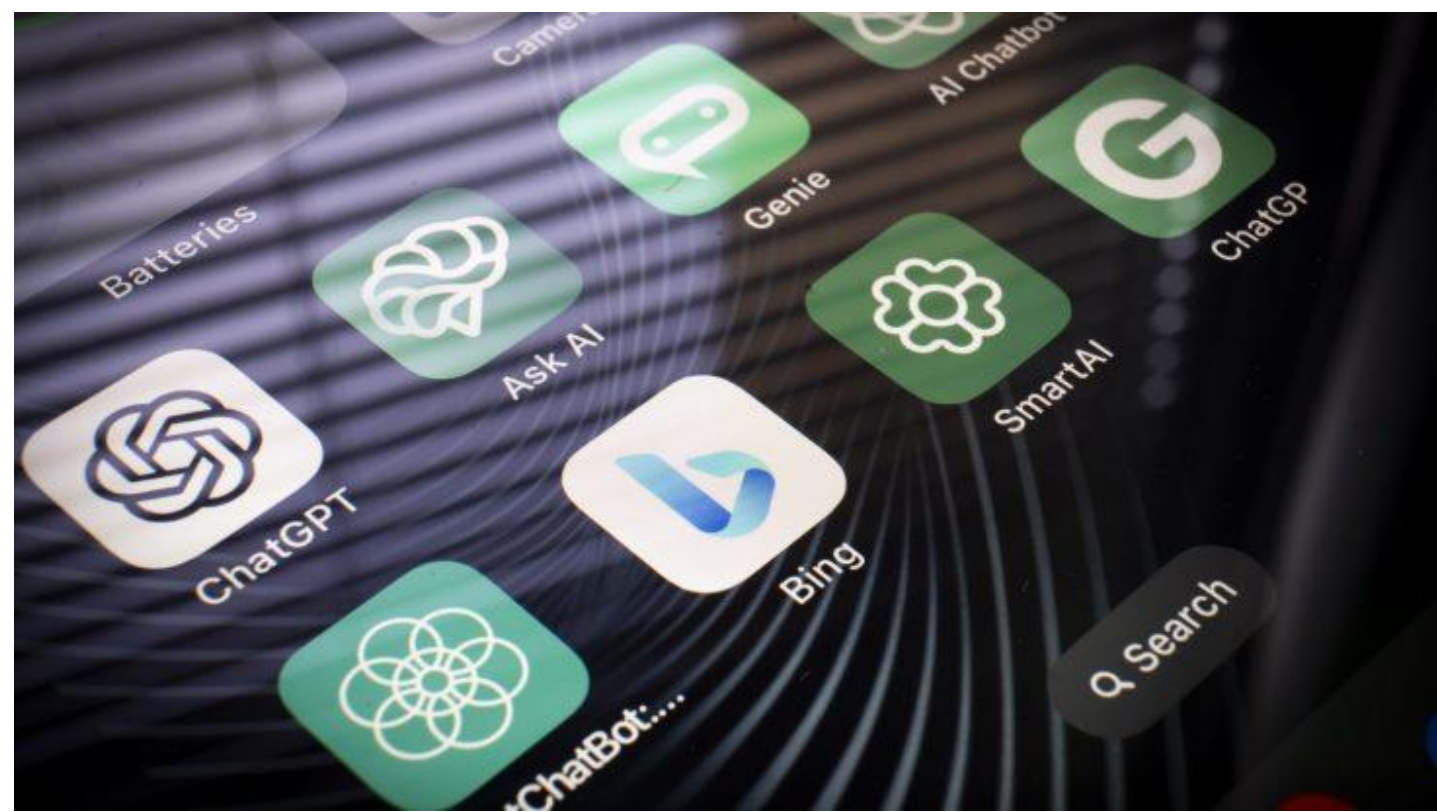
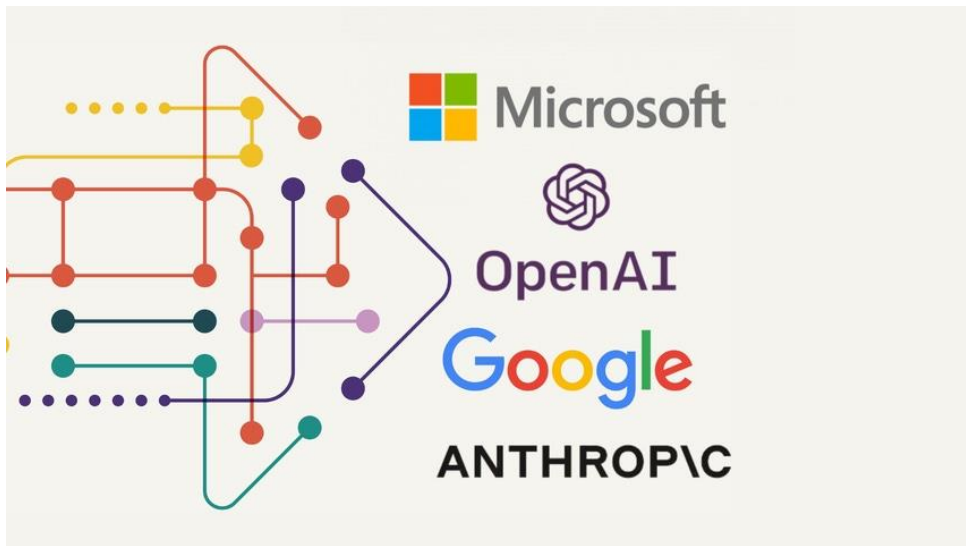
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*Where are we at?*

**Part 3:** Generative AI

*Where do we go?*





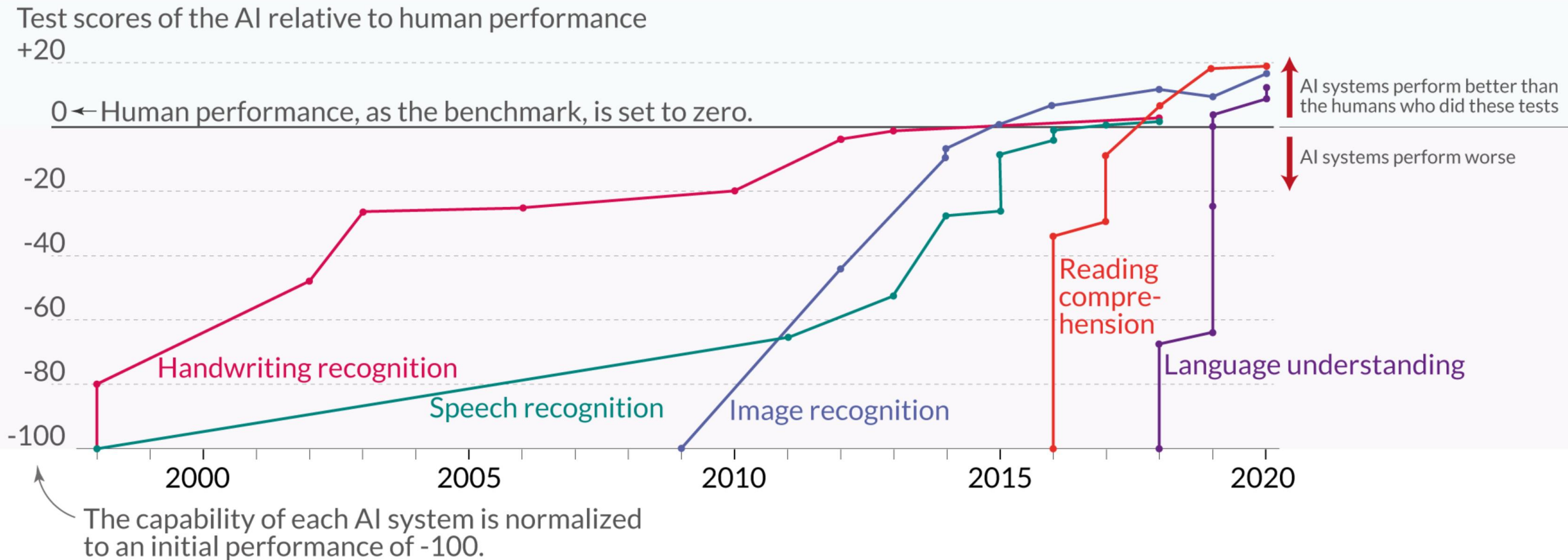
**Web 1.0** ➡ **Web 2.0** ➡ **Web 3.0**

**WEBPAGES**  
*search*  
*static*  
*Pages*

**APPS**  
*share*  
*dynamic*  
*Apps*

**AI AGENTS**  
*generate*  
*interactive*  
*Environments*

# Language and image recognition capabilities of AI systems have improved rapidly

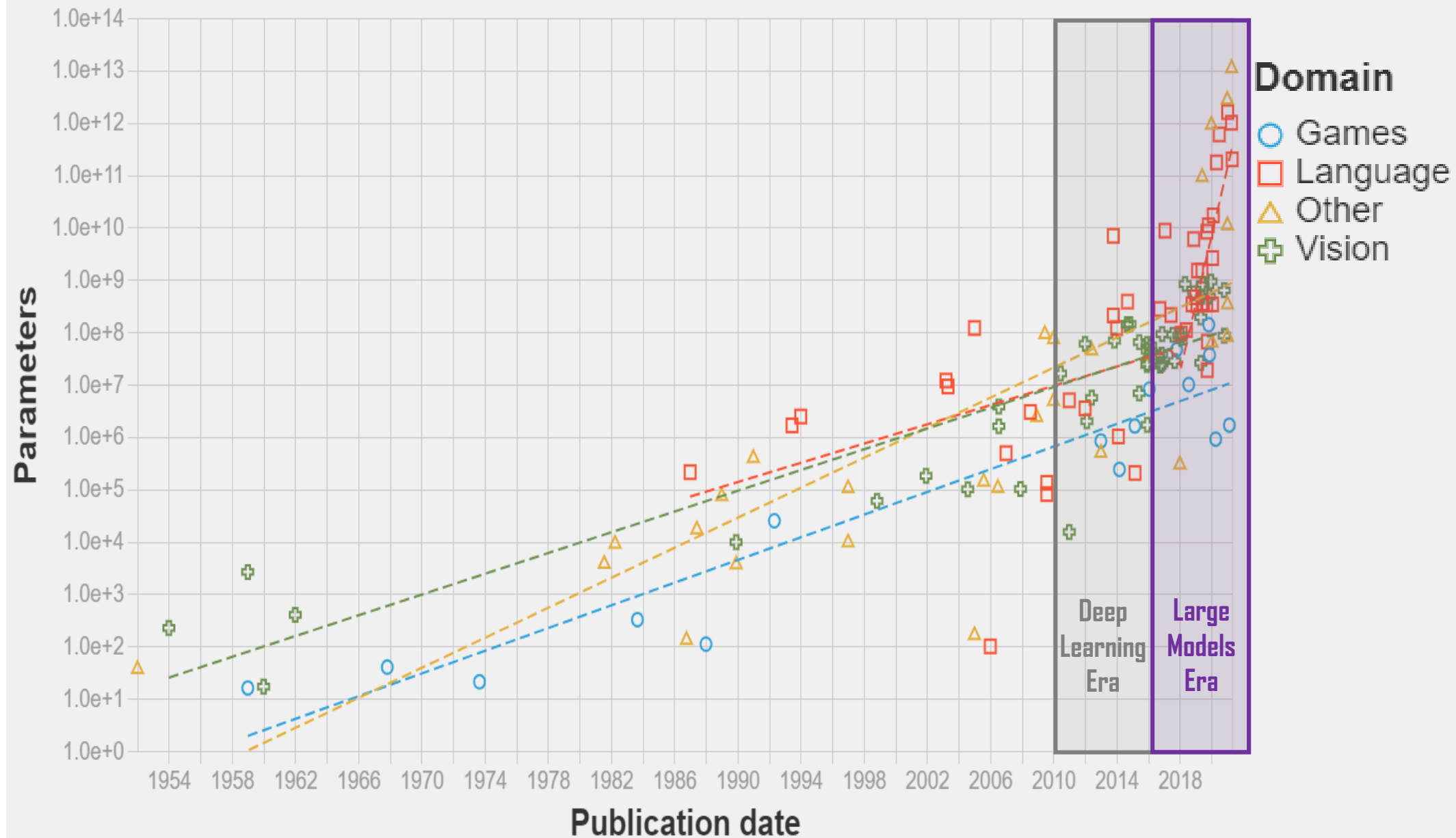


Data source: Kiela et al. (2021) – Dynabench: Rethinking Benchmarking in NLP  
OurWorldinData.org – Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the author Max Roser

<https://aclanthology.org/2021.naacl-main.324.pdf>

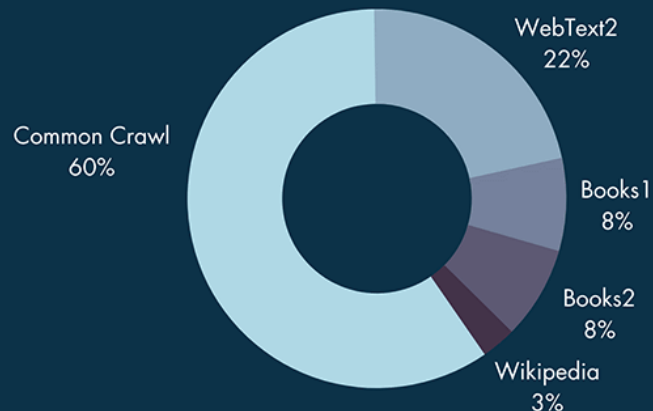
Parameter count of ML systems through time



# LARGE Language Models

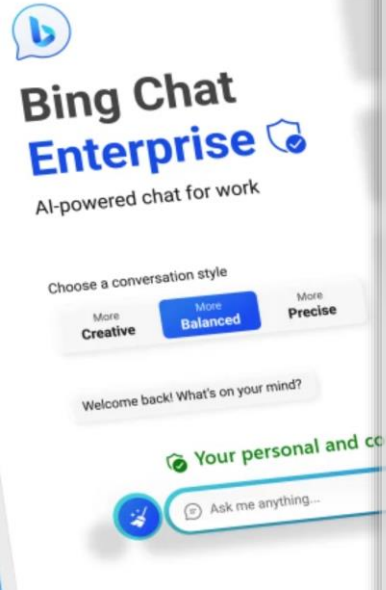
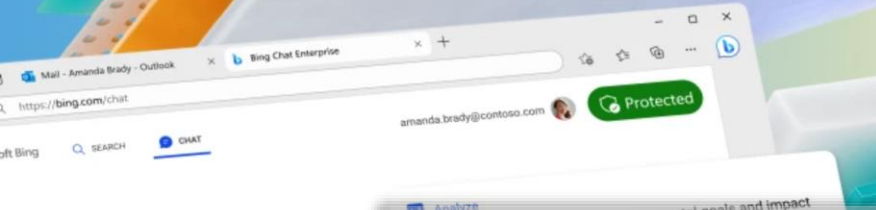
	Year	Training data size	Parameters	Number of layers
GPT (Original)	2018	Unknown	110,000,000	12
GPT-2	2019	40,000 MB = text from 8M webpages (equivalent to "all Wikipedia)	1,500,000,000	48
GPT-3 / 3.5	2020 / 2022	45,000,000+ MB	175,000,000,000	96
GPT-4	2023	1,000,000,000 MB ≈ estm. [5KB text / page] => 11,000 more than domains	100,000,000,000,000 100 trillion parameters: 12,500/human 1 per webpage	>100

## ChatGPT-3 training dataset sources





# ChatGPT Enterprise



Microsoft Bing

SEARCH

CHAT

retat@contoso.com



Protected



## Bing Chat Enterprise

AI-powered chat for work

Bing is powered by AI, so surprises and mistakes are possible. Please share feedback so we can improve! [Terms](#) | [Privacy](#)

Choose a conversation style

More  
Creative

More  
Balanced

More  
Precise

Analyze

Create a SWOT analysis about environmental goals and impact

Write

Help me prepare and write a successful sales pitch

Compare

Compare online and offline marketing strategies

Business Travel

What's a good place to stay for my upcoming business trip to New York?

Your personal and company data are protected in this chat



Ask me anything...

0/4000



Feedback





You

What is the difference between Hugging Face AI models and Amazon Bedrock?



ChatGPT

Hugging Face AI models and Amazon Bedrock are two distinct offerings in the field of artificial intelligence, each with its unique features and focus areas. Here's a comparison of the two:

Hugging Face AI Models

- 1. **Community and Open Source Focus:** Hugging Face is well-known for its strong open-source community and the collaborative development of AI models. They host a wide range of models, including language models like BERT, GPT, and T5, which are popular in natural language processing tasks.
- 2. **Model Variety and Accessibility:** Their platform allows users to easily access and implement a variety of pre-trained models for tasks like text classification, sentiment analysis, summarization, and more.
- 3. **Research and Innovation:** Hugging Face is known for its cutting-edge models and tools, often resulting from research collaborations and open-source contributions.
- 4. **Transformers Library:** Hugging Face provides a comprehensive collection of pre-trained models and tools, serving as a go-to resource for developers and researchers.
- 5. **Community Contributions and Ecosystem:** The platform has a large, active community that contributes to a diverse and growing ecosystem of AI models and tools.

Key Differences

- **Focus:** Hugging Face is more community-driven and research-oriented, with a strong emphasis on open-source contributions and accessibility. Amazon Bedrock, on the other hand, is more enterprise-focused, offering scalable and integrated solutions within the AWS ecosystem.
- **Model Variety:** Hugging Face offers a wider variety of AI models, especially in the field of natural language processing, while Amazon Bedrock is more about providing a platform to build and deploy custom AI solutions.
- **Usage:** Hugging Face is popular among researchers, data scientists, and developers for its ease of access to a variety of models, whereas Amazon Bedrock is tailored for businesses needing scalable, integrated AI solutions.

Amazon Bedrock

- 1. **Enterprise-Level AI Solutions:** Amazon Bedrock (part of AWS AI services) is designed to provide scalable and robust AI solutions for enterprises. It is focused on offering AI capabilities as part of the broader AWS cloud services.
- 2. **Integration with AWS Ecosystem:** Bedrock is deeply integrated with other AWS services, providing a seamless experience for businesses that are already using AWS for their cloud computing needs. This includes data storage, computing resources, and other cloud-based services.

Amazon Bedrock is tailored for businesses looking to deploy AI solutions at scale. It provides the ability to build, train, and deploy machine learning models using a variety of pre-trained models. Amazon Bedrock provides robust security features and complies with various privacy regulations, which is crucial for enterprise use. Additionally, it offers professional support and services, making it easier for businesses, especially for those without extensive in-house AI expertise, to leverage AI capabilities.



You

Create a table, v  
characteristics:  
characteristics y



ChatGPT

Sure, here's a table that compares Hugging Face and Amazon Bedrock across various characteristics:

Characteristic	Hugging Face	Amazon Bedrock
Required Skills	<ul style="list-style-type: none"><li>- Focuses on AI researchers and developers.</li><li>- Requires knowledge of AI models and coding, especially in Python.</li><li>- Understanding of the Transformers library is beneficial.</li></ul>	<ul style="list-style-type: none"><li>- Aimed at businesses with varying levels of AI expertise.</li><li>- More accessible for non-specialists due to AWS integration.</li><li>- Beneficial to have knowledge of AWS services and cloud computing.</li></ul>
Pricing	<ul style="list-style-type: none"><li>- Many models and tools are open-source and free.</li><li>- Offers paid tiers for enterprise solutions and advanced support.</li></ul>	<ul style="list-style-type: none"><li>- Pricing is based on the usage of AWS services.</li><li>- Costs can vary widely based on compute, storage, and data transfer needs.</li><li>- Offers a pay-as-you-go pricing model.</li></ul>
Number and Variety of Models	<ul style="list-style-type: none"><li>- Hosts a wide variety of models, especially for NLP tasks.</li><li>- Community contributions lead to a diverse and expanding model library.</li></ul>	<ul style="list-style-type: none"><li>- Focuses on providing infrastructure to build and deploy custom models.</li><li>- Limited in-house model variety compared to Hugging Face.</li></ul>
Integration and Ecosystem	<ul style="list-style-type: none"><li>- Easily integrates with existing Python ecosystems.</li><li>- Compatible with multiple machine learning frameworks.</li></ul>	<ul style="list-style-type: none"><li>- Deep integration with the AWS ecosystem.</li><li>- Offers seamless integration with other AWS services for data storage, processing, etc.</li></ul>
Community and Support	<ul style="list-style-type: none"><li>- Strong open-source community support.</li><li>- Active forums and user contributions.</li><li>- Limited direct support for free versions.</li></ul>	<ul style="list-style-type: none"><li>- Professional support and services from Amazon.</li><li>- Extensive documentation and enterprise-level support.</li><li>- Suitable for businesses requiring consistent and structured support.</li></ul>

edrock on 5 different  
clude two additional



# You Make a PESTLE factors) between educational pur



ChatGPT

Performing a PESTLE analysis for Hugging Face and Amazon Bedrock in the context of their adoption for educational purposes at an R1 Research University in California, like UC Davis, involves evaluating the macro-environmental factors that could influence their use and effectiveness. Here's the analysis:

## Political

- **Hugging Face:**
  - Influence of international collaboration and open-source policies.
  - May benefit from educational grants or government-funded AI research projects.
- **Amazon Bedrock:**
  - Heavily influenced by U.S. and international trade and privacy policies.
  - Potential impact of government regulations on cloud services and data sovereignty.

## Economic

- **Hugging Face:**
  - More economically viable for universities due to free open-source models.
  - Limited direct revenue generation but significant cost savings in research.
- **Amazon Bedrock:**
  - Costs associated with AWS services might be a significant factor.
  - Potentially higher operational costs but offers scalable solutions for large research projects.

## Social

- **Hugging Face:**
  - Aligns with academic collaboration and open-source community ethos.
  - May offer more opportunities for students to engage in AI communities.
- **Amazon Bedrock:**
  - Reflects industry-standard practices, beneficial for students' career readiness.
  - Could offer networking opportunities with industry professionals.

## Technological

- **Hugging Face:**
  - Offers cutting-edge AI models and tools, especially in NLP.
  - Encourages hands-on experience with AI development and research.
- **Amazon Bedrock:**
  - Provides robust, scalable cloud-based AI solutions.
  - Integration with AWS might offer more comprehensive technological learning opportunities.

## Legal

- **Hugging Face:**
  - Intellectual property rights in open-source projects could be a concern.
  - Compliance with data privacy laws for datasets used in AI models.
- **Amazon Bedrock:**
  - Must adhere to strict data privacy and regulatory compliance, given AWS's global presence.
  - Legal implications of cloud-based data storage and processing.

## Environmental

- **Hugging Face:**
  - Lesser direct environmental impact but depends on the computing resources used for model training and deployment.
- **Amazon Bedrock:**
  - Significant environmental impact due to large-scale cloud infrastructure.
  - Potential for using AWS's initiatives for sustainable and energy-efficient cloud computing.

## Contextual Consideration for UC Davis

- **Academic Integration:** Both platforms offer unique benefits; Hugging Face aligns with open-source research and hands-on AI learning, while Amazon Bedrock aligns with industry-standard, scalable cloud-based AI research.
- **Resource Allocation:** UC Davis would need to consider budget constraints, especially regarding the ongoing costs associated with Amazon Bedrock.
- **Educational Goals:** The choice depends on whether the focus is more on developing AI expertise in-house (Hugging Face) or on learning to integrate AI solutions within a larger cloud ecosystem (Amazon Bedrock).
- **Research and Collaboration:** Both platforms offer different avenues for research collaborations and contributions, with Hugging Face being more open-source community-oriented and Amazon Bedrock providing industry-level collaboration opportunities.

In summary, while Hugging Face offers an open-source, community-driven approach conducive to academic research and learning, Amazon Bedrock provides a more structured, scalable, and industry-aligned solution. The decision for UC Davis would hinge on the specific educational and research objectives, budget considerations, and the desired balance between academic exploration and industry-standard practices.

# Research: quantifying GitHub Copilot's impact on developer productivity and happiness

(With Copilot) I have to think less, and when I have to think it's the fun stuff. It sets off a little spark that makes coding more fun **and** more efficient.

- Senior Software Engineer

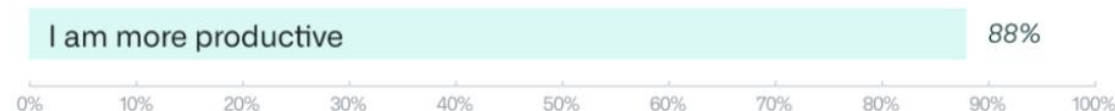
In the experiment, we measured—on average—how successful each group was in completing the task and how long each group took to finish.

- The group that used GitHub Copilot had a **higher rate of completing the task** (78%, compared to 70% in the group without Copilot).
- The striking difference was that **developers who used GitHub Copilot completed the task significantly faster—55% faster than the developers who didn't use GitHub Copilot**. Specifically, the developers using GitHub Copilot took on average 1 hour and 11 minutes to complete the task, while the developers who didn't use GitHub Copilot took on average 2 hours and 41 minutes. These results are statistically significant ( $P=.0017$ ) and the 95% confidence interval for the percentage speed gain is [21%, 89%].

Table: Survey responses measuring dimensions of developer productivity when using GitHub Copilot

## When using GitHub Copilot...

### Perceived Productivity



### Satisfaction and Well-being\*

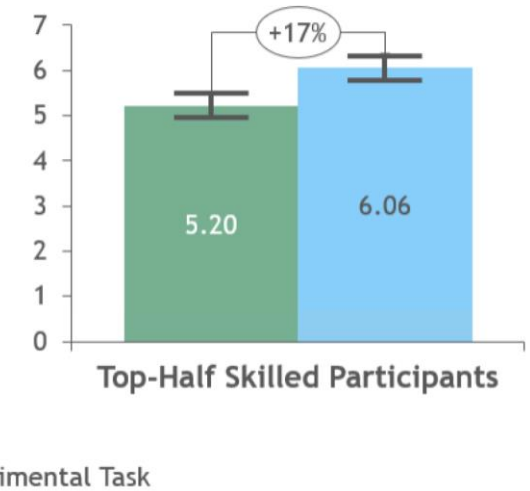
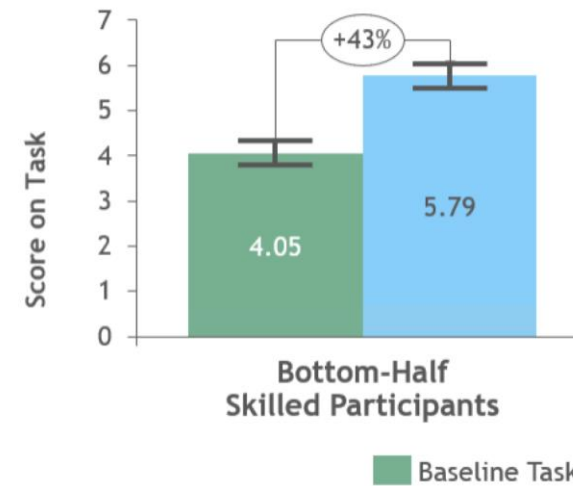
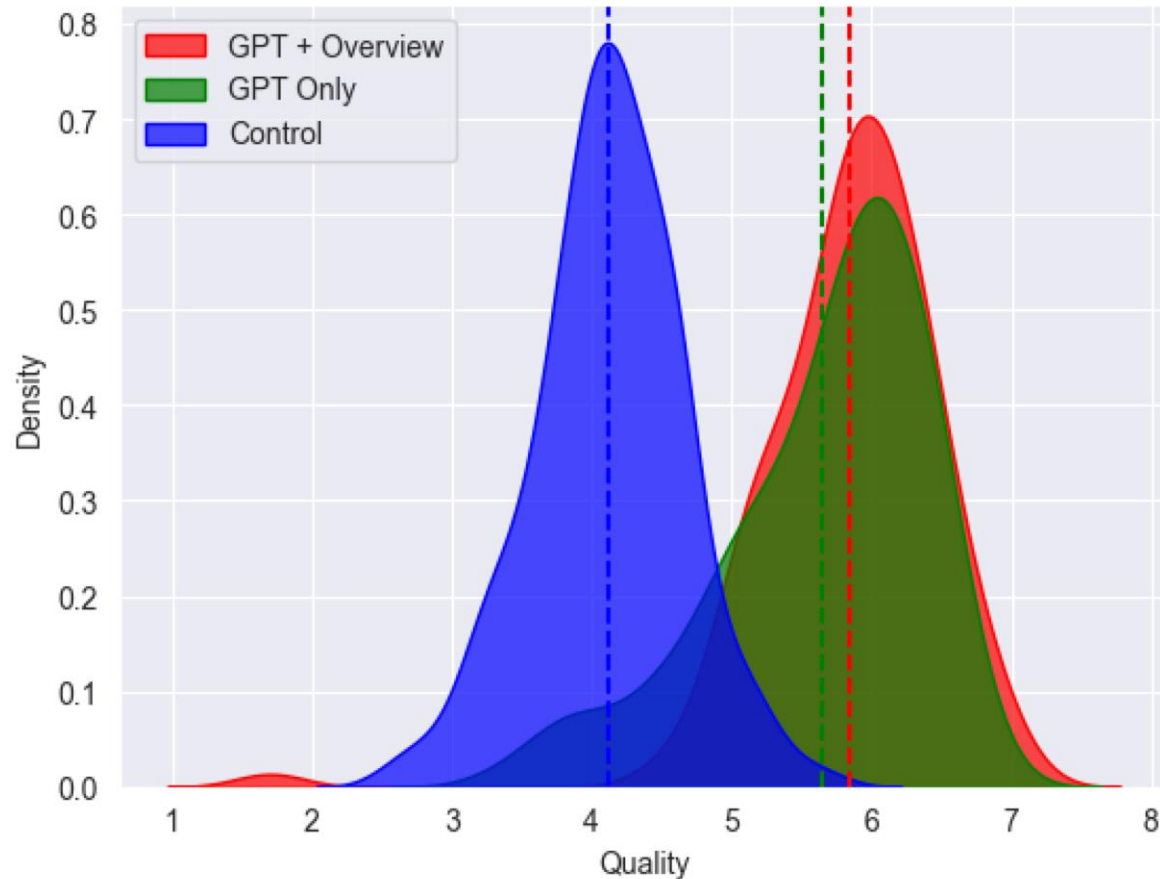


### Efficiency and Flow\*





758 professional consultants comprising about 7% of the individual contributor-level consultants at the

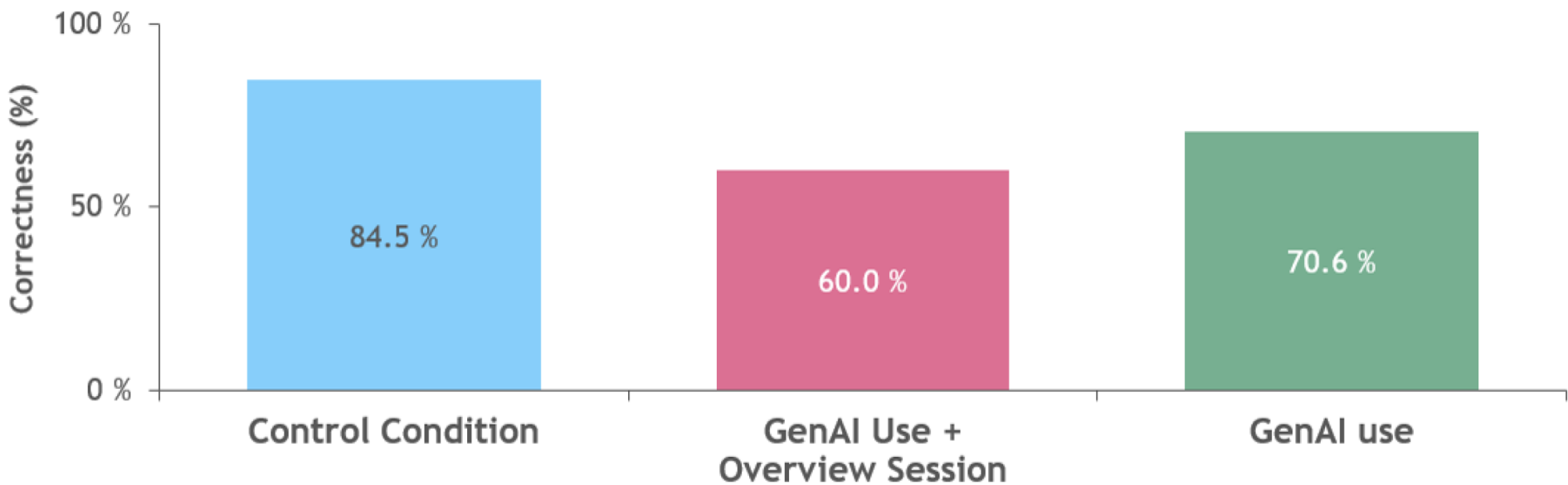


Dell'Acqua, F., McFowland, E., Mollick, E. R., Lifshitz-Assaf, H., Kellogg, K., Rajendran, S., Krayner, L., Candelon, F., & Lakhani, K. R. (2023). *Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality* (SSRN Scholarly Paper 4573321). <https://doi.org/10.2139/ssrn.4573321>



758 professional consultants comprising about 7% of the individual contributor-level consultants at the

“...we sought a task that AI couldn’t easily complete...  
 Our goal was to design a task where consultants would excel, but AI would struggle without extensive guidance.”



+

Borji, A. (2023). *A Categorical Archive of ChatGPT Failures* (arXiv:2302.03494). arXiv. <https://doi.org/10.48550/arXiv.2302.03494>

Davis, E., Hendler, J., Leivada, E., Marcus, G., Witbrock, M., & Shwartz, V. (2023). *ChatGPT / LLM Bugs*. <https://researchrabbit.typeform.com/llmerrors>

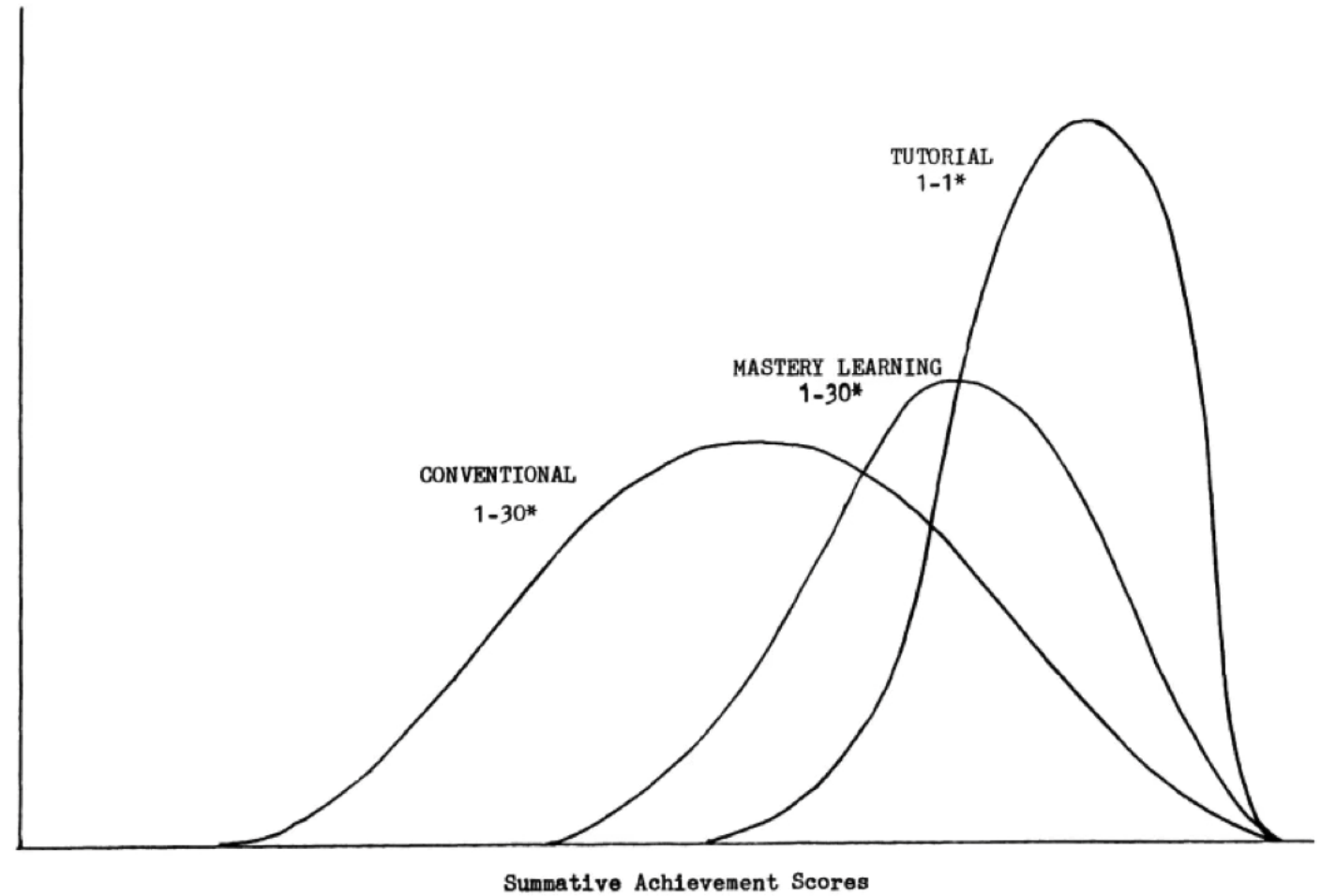
Dell’Acqua, F., McFowland, E., Mollick, E. R., Lifshitz-Assaf, H., Kellogg, K., Rajendran, S., Kraye, L., Candelon, F., & Lakhani, K. R. (2023). *Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality* (SSRN Scholarly Paper 4573321). <https://doi.org/10.2139/ssrn.4573321>

# Ray Kurzweil

# The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring

BENJAMIN S. BLOOM  
*University of Chicago and Northwestern University*

**FIGURE 1.** Achievement distribution for students under conventional, mastery learning, and tutorial instruction.



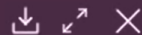
\*Teacher-student ratio

June/July 1984



Khanmigo beta

AI power



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Tell me the answer!

## Equations with parentheses

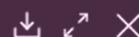
CCSS.Math: [8.EE.C.7](#), [8.EE.C.7b](#) Google ClassroomSolve for  $m$ .

$$3 - 2(9 + 2m) = m$$

 $m =$  Stuck? [Review related articles/videos or use a hint.](#)

Khanmigo beta

AI power



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$$3 - 18 + 2m = m$$

Oops! It looks like there's a small mistake when you distributed the -2 inside the parentheses. 😞 Make sure you distribute the -2 to both terms in the parentheses.

The correct distribution would be:

$$3 - 2(9) - 2(2m) = m$$

Try again and let me know if you need help. You



Clear chat

Khanmigo makes mistakes sometimes. [Here's why.](#)

## Equations with parentheses

CCSS.Math: [8.EE.C.7](#), [8.EE.C.7b](#) Google ClassroomSolve for  $m$ .

$$3 - 2(9 + 2m) = m$$

 $m =$  Stuck? [Review related articles/videos or use a hint.](#)

Rep



# Applications can make AI models better

GPT-4 clearly has the capability, but the context you give it matters a lot!

We have:

- Used “AI Thoughts”
- Give it the context of the problem (including human generated hints)
- Spent 6 months prompt engineering for tutoring with an emphasis on math
- Spent a lot of time helping to fine-tune the model for this use case

<internal khanmigo thoughts>

Original equation:  $6(-2g-1)=-(13g+2)$

Step 1: Distribute the 6 to both terms inside the parentheses on the left side:

$$\rightarrow -12g - 6 = -(13g + 2)$$

Step 2: Distribute the negative sign to both terms inside the parentheses on the right side:

$$\rightarrow -12g - 6 = -13g - 2$$

Now the student's equation should look like this:

$$-12g - 6 = -13g - 2$$

**The student got a different answer than I did, but do not tell them they made a mistake.**

**Instead, ask them to explain how they got to that step.**

</internal khanmigo thoughts>



Flags

Check a11y

```
7 background(184, 236, 255);
8
9 fill(255, 170, 0);
10 ellipse(200, 100, sunRadius, sunRa
11
12 // clouds
13 fill(255, 255, 255);
14 // left cloud
15 ellipse(leftX, 150, 126, 97);
16 ellipse(leftX+62, 150, 70, 60);
17 ellipse(leftX-62, 150, 70, 60);
18
19 // right cloud
20 ellipse(rightX, 100, 126, 97);
21 ellipse(rightX+62, 100, 70, 60);
22 ellipse(rightX-62, 100, 70, 60);
23
24 leftX--;
25
26 };
```



Khanmigo beta

AI power



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Why is only the left cloud moving?



Great observation! 😊 In your current code, you have `leftX--;` inside the `draw` function, which



Clear chat



Khanmigo makes mistakes sometimes. Here's why.



Up next: project



Flags

&lt; Teacher Dashboard

## Chat with a literary character

Khanmigo beta

AI power

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## Activities

Let's learn together through any of these activities that interest you!

Practice: AP exam subjects

Practice: College subjects

Debate: Elementary school topics and beyond

Debate: Middle school topics and beyond

Debate: High school topics and beyond

Chat with a historical figure

Chat with a literary character

Craft a story



Whom would you like to meet today? You can select from the list, or choose any character from the public domain.

Remember, I'm just an AI simulation of the character you'd like to speak with!

Zeus

Achilles

Hamlet

Macbeth

Othello

Romeo

Juliet

King Lear

Anansi the spider

Elizabeth Bennet

Mr. Darcy

Hester Prynne

Don Quixote

Dr. Frankenstein

Captain Ahab

Jay Gatsby

Odysseus

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Type message (do NOT share any personal data)



Clear chat





Flags

&lt; Teacher Dashboard

## Craft a story



Khanmigo beta

AI power

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## Activities

Let's learn together through any of these activities that interest you!

Debate: Elementary school topics and beyond

Debate: Middle school topics and beyond

Debate: High school topics and beyond

Chat with a historical figure

Chat with a literary character

Craft a story

Build my vocabulary

Navigate college admissions and



Would you like to write an awesome story together? I can help! As we set it up, if I use words you'd like to know more about, like "theme" or "plot", feel free to ask me to explain. Ready to get started? You can choose from the list, or suggest another idea. At any time you can ask it to write what you have written so far. Once we're done, you can talk to some of the characters!

Yes, let's write an adventure story.

Yes, let's write a fantasy story.

Yes, let's write a science fiction story.

Yes, let's write a romance.

Yes, let's write a mystery.

[Leave feedback](#)

Rate this response



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Alright! Here's a rough draft of a lesson plan on the Causes of the Civil War for 9th grade:

**\*\*Objectives/Standards:\*\***

- Analyze the various causes of the Civil War, including economic, social, and political factors.
- Understand the role of key events and individuals in the lead-up to the Civil War.

**\*\*Essential Question:\*\***

- What were the main causes of the Civil War, and how did key events and individuals contribute to the conflict?

**\*\*Materials:\*\***

- Textbook or online resources on the causes of the Civil War
- Video: "Causes of the Civil War" by Crash Course US History
- Chart paper or whiteboard for brainstorming
- Handout with a timeline of events leading to the Civil War

**\*\*Hook:\*\***

- Begin with a quick poll: "Do you think the Civil War was inevitable? Why or why not?" Encourage students

Type message (do NOT share any personal data)



Clear chat



## Activities

Let's learn together through any of these activities that interest you!

### FOR TEACHERS

Welcome!

Refresh my knowledge

Create a lesson hook

Write exit ticket questions

Create a humanities lesson plan

Create a fun class summary poem

### FOR LEARNERS

Welcome!



Flags

Check a11y

&lt; Teacher Dashboard

## Navigate college admissions and financial aid

Khanmigo beta  
AI power

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Rate this response

What should I be thinking about in the 10th grade for college?



It's great that you're thinking about college in 10th grade! Here are some key things to focus on:

1. Maintain good grades: Your GPA is an important factor in college admissions, so keep working hard in your classes.
2. Explore your interests: Join clubs, participate in extracurricular activities, or volunteer ■

Type message (do NOT share any personal data)



Clear chat



## Activities

Let's learn together through any of these activities that interest you!

Chat with a literary character

Craft a story

Play: Word architect

Navigate college admissions and financial aid













# Integrity: Proof-of-Effort

## STUDENT'S PROMPT HISTORY

GRADING AI USAGE

-  give me an essay about the financial crisis
-  financial crisis 2008
-  tell me more about the freezing credit markets in 2008
-  ben bernanke
-  what are the effects of the financial crisis of 2008
-  what are the arguments for the governments reaction to 2008

GRADING AI USAGE

-  What was the 2008 financial crisis?
-  Can you go into more detail outlining the causes of the 2008 financial crisis?
-  What impacts did the 2008 financial crisis have on the United States specifically?
-  What impacts did the 2008 financial crisis have globally?
-  What made the 2008 financial crisis significant in modern history?
-  What aspects of the global economy were impacted by the 2008 financial crisis?
-  According to the numbers, did the United States economy or the global economy suffer more due to the 2008 financial crisis?
-  what were some economic ramifications due to the 2008 financial crisis in countries other than the United States of America
-  Can you give me an example in a specific country
-  What were societal impacts of the 2008 recession in Spain?
-  what does exacerbated mean?
-  what is a synonym of vulnerable
-  how did the view of capitalism globally and in Spain change after the 2008 financial crisis?

# More:

*[www.youtube.com/@Prof.MartinHilbert/playlists](https://www.youtube.com/@Prof.MartinHilbert/playlists)*

*[www.martinhilbert.net](http://www.martinhilbert.net)*



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