



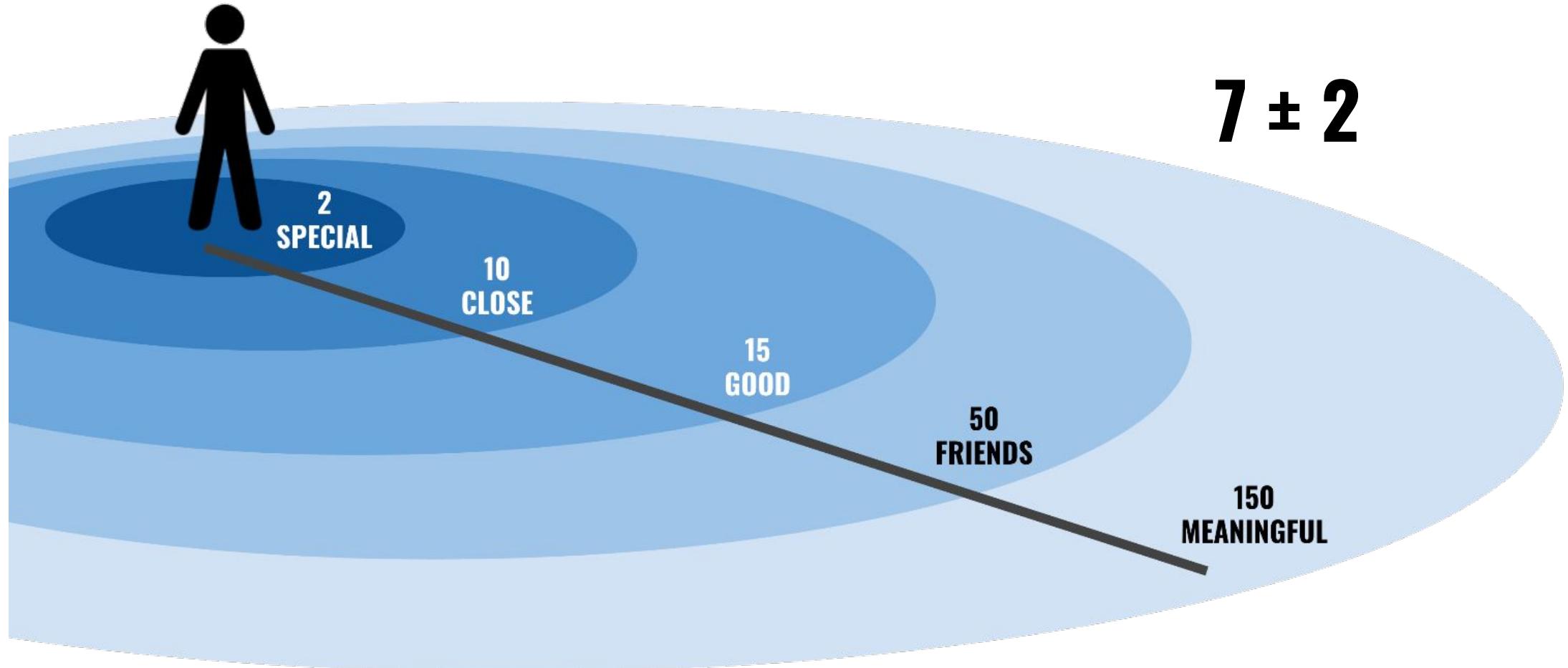
PROFESSIONAL EDUCATION  
Digital Plus<sup>+</sup> Programs



# Applied Generative AI for Digital Transformation Introduction

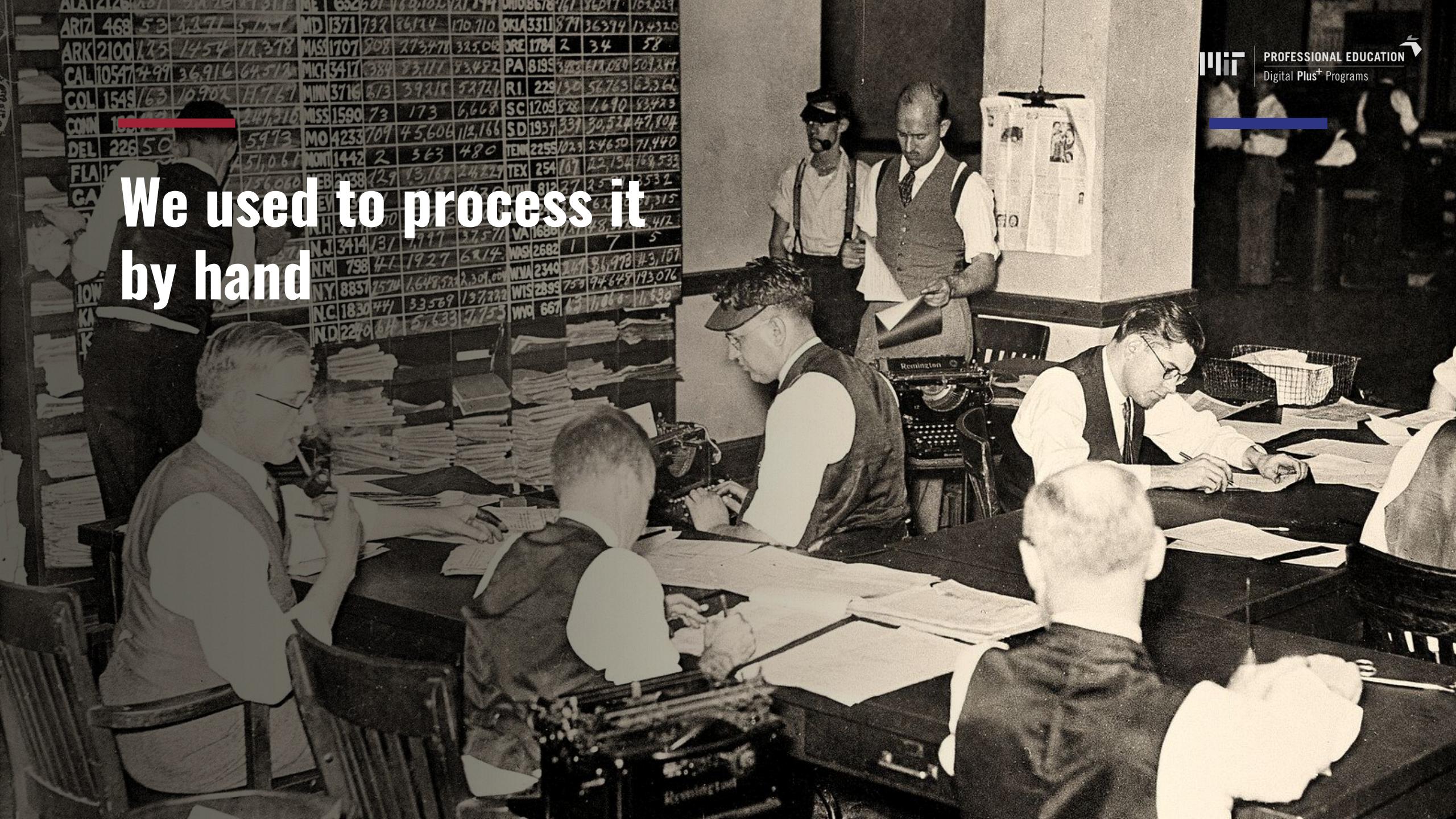
Live Digital Course | Live session

# Human Limitations



We used to collect  
data by hand

We used to process it  
by hand



# Herman Hollerith, The Tabulator, 1894 – First data company

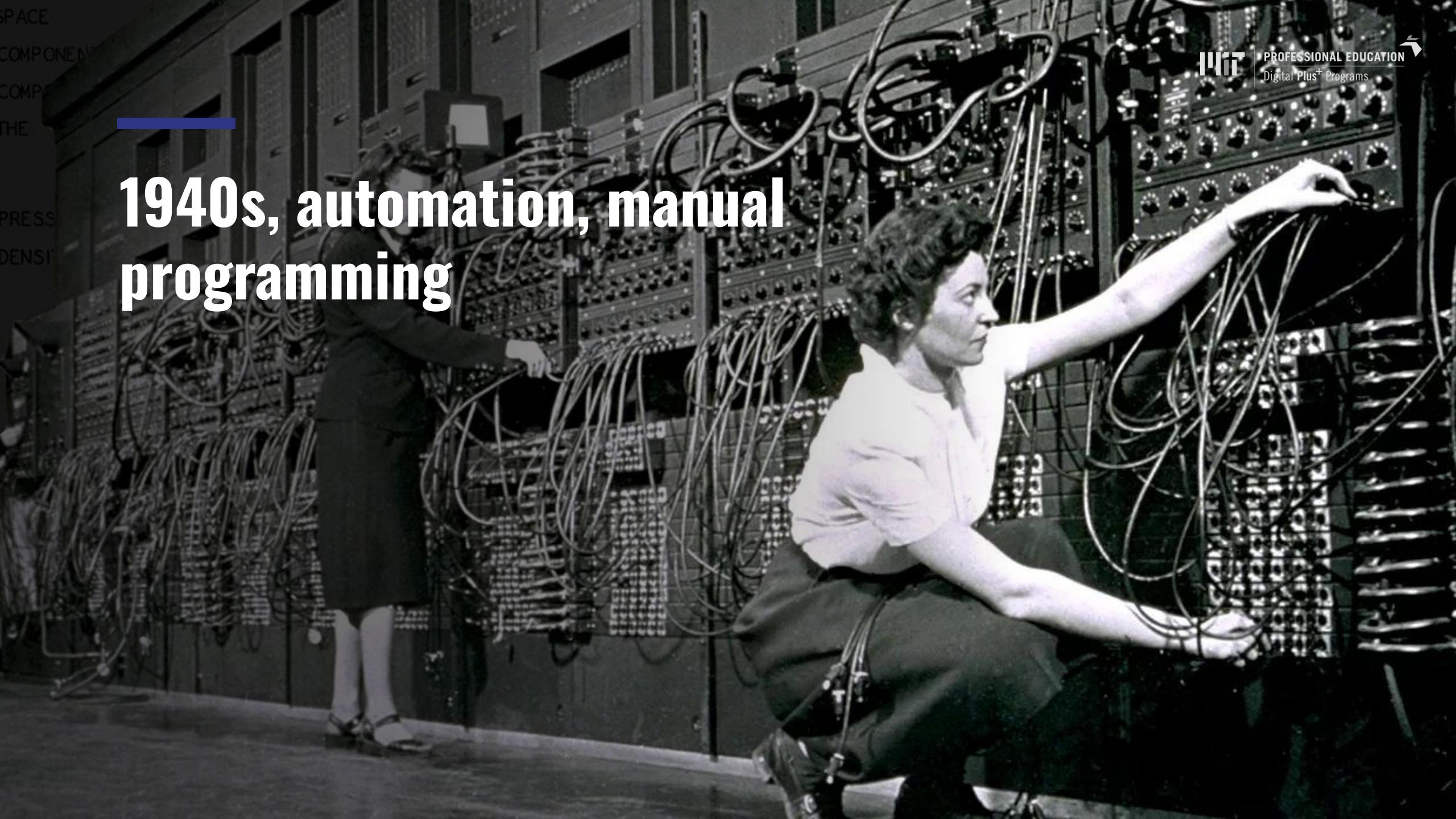




1920s, human layers  
of integration



# 1940s, automation, manual programming



---

# 1960s, capturing instructions

---

**1982**



Really easy,  
right?

Starting MS-DOS...

HIMEM is testing extended memory...done.

C:\>C:\DOS\SMARTDRV.EXE /X

MODE prepare code page function completed

MODE select code page function completed  
C:\>dir

Volume in drive C is MS-DOS\_6

Volume Serial Number is 40B4-7F23

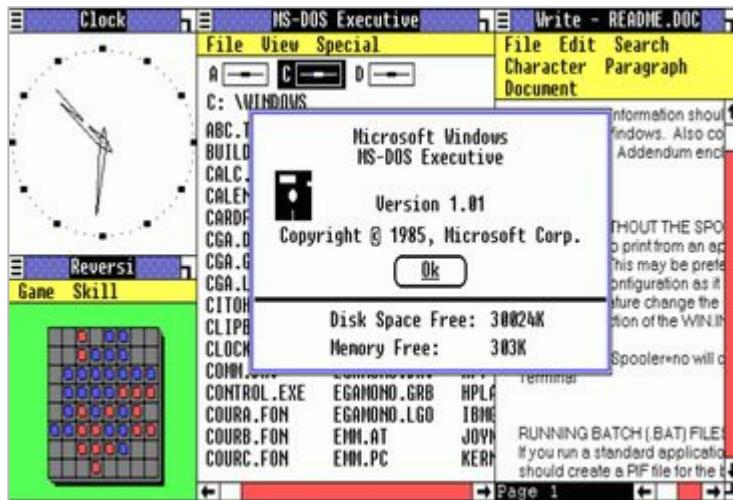
Directory of C:\

DOS	<DIR>	12.05.20	15:57
COMMAND	COM	54 645	94.05.31 6:22
WINA20	386	9 349	94.05.31 6:22
CONFIG	SYS	144	12.05.20 15:57
AUTOEXEC	BAT	188	12.05.20 15:57
		64 326	bytes
		24 760	320 bytes free

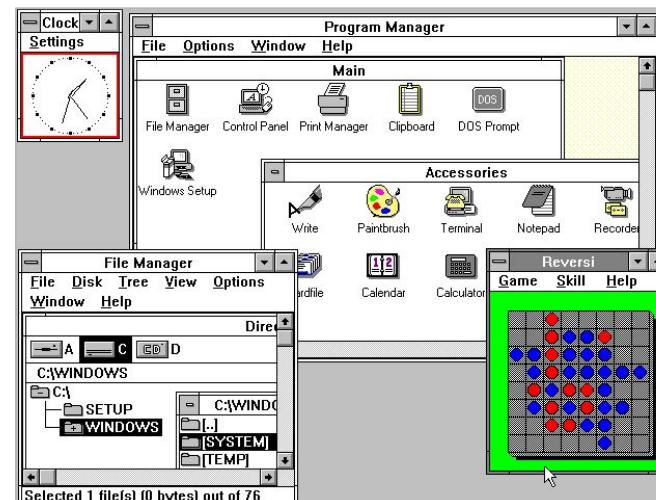
C:\>\_

# Graphical User Interface (GUI)

*Windows 1.0*



*Windows 3.0*



*Windows 95*



80s/90s, GUIs

---

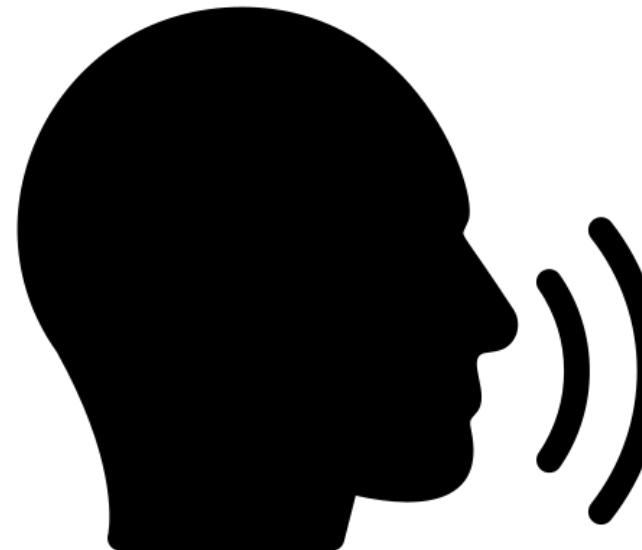
# Generative AI



---

# We have arrived at making requests in plain language

(not like Alexa)



---

Chat GPT, write a haiku about modern life:

*Screens flicker bright,  
Thumbs swipe, eyes fixed on the glow.  
Life in pixels flows.*

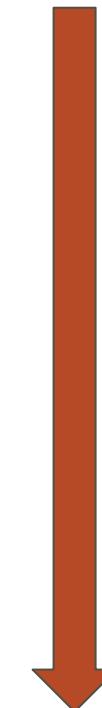
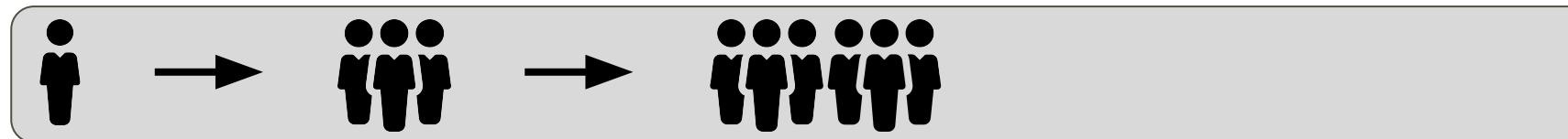
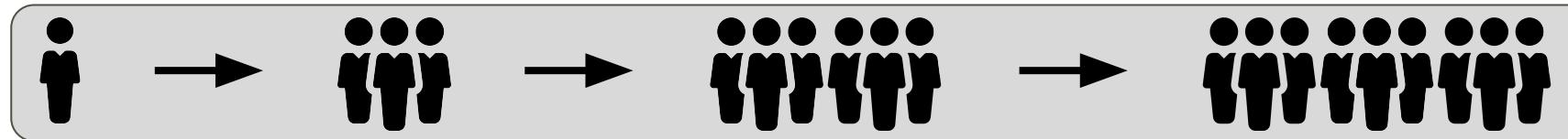
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# Revolutions in cost, time, access

the cost before and after, the access, the time

- When computers were people, 1920s
- First general purpose computer, faster than people, 1940s
- The personal computer, everyone could have one, 1982
- The graphical user interface, everyone can use one, 1985
- Generative AI, everyone can use AI, 2022

# Time to value



**Faster  
Decisions**

---

# Data Science Acceleration

# Data Science Evolution

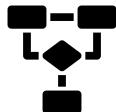
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**2000**

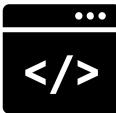
Build System



Write Algorithm



Write Code



Collect, store, etl



5+ years



**2010**

Stock Systems



Libraries



Stock Env



Collect, store, etl



3+ years



**2020**

Stock Systems



APIs



Stock Env



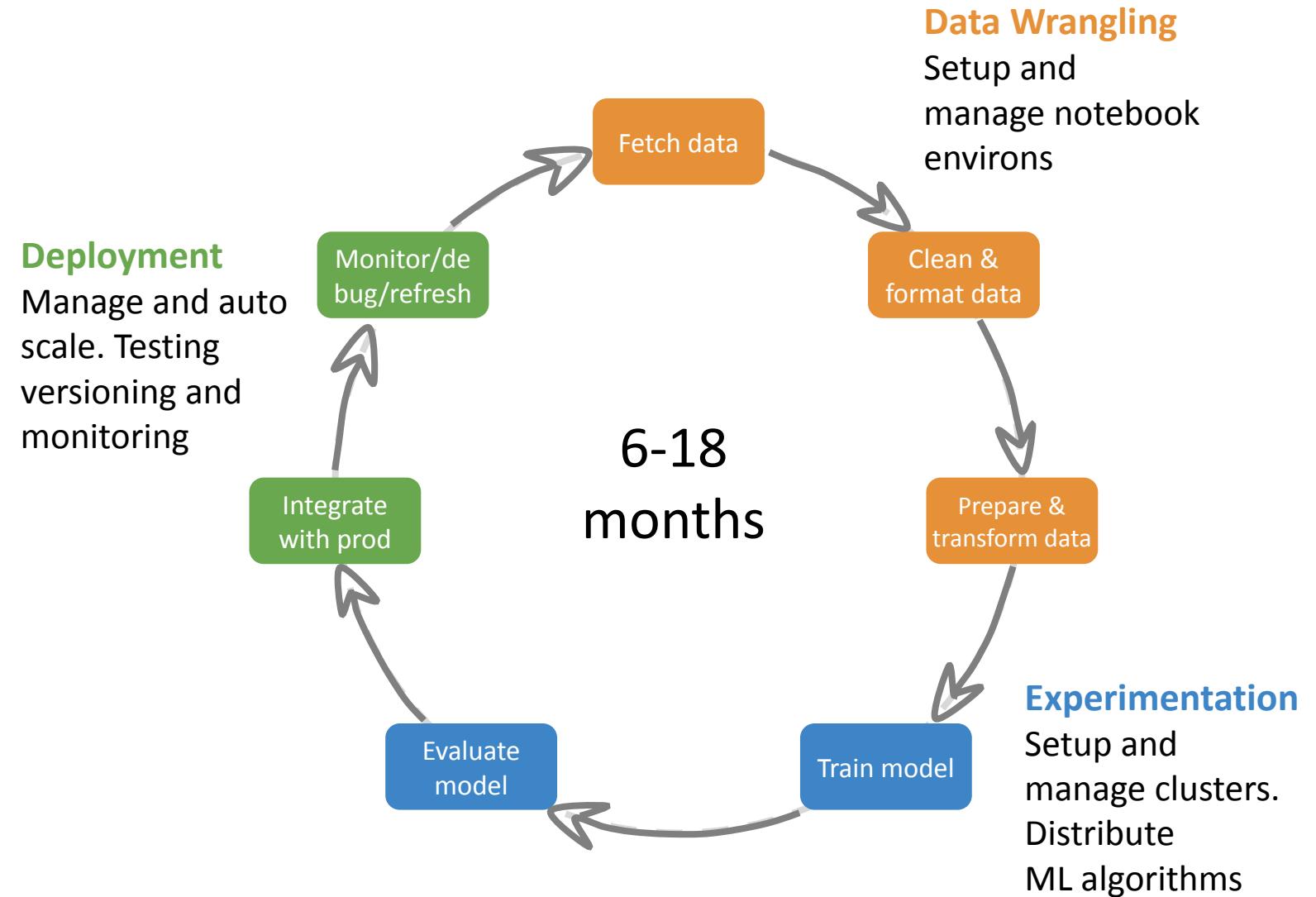
Modern Stack



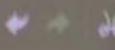
1+ years



# Data Science Cycle



File Edit View Navigate Code Refactor Run Tools VCS Window Help



Project

Structure

File

Edit

View

Navigate

Code

Refactor

Run

Tools

VCS

Window

Help

File

Edit

View

Navigate

Code

Refactor

Run

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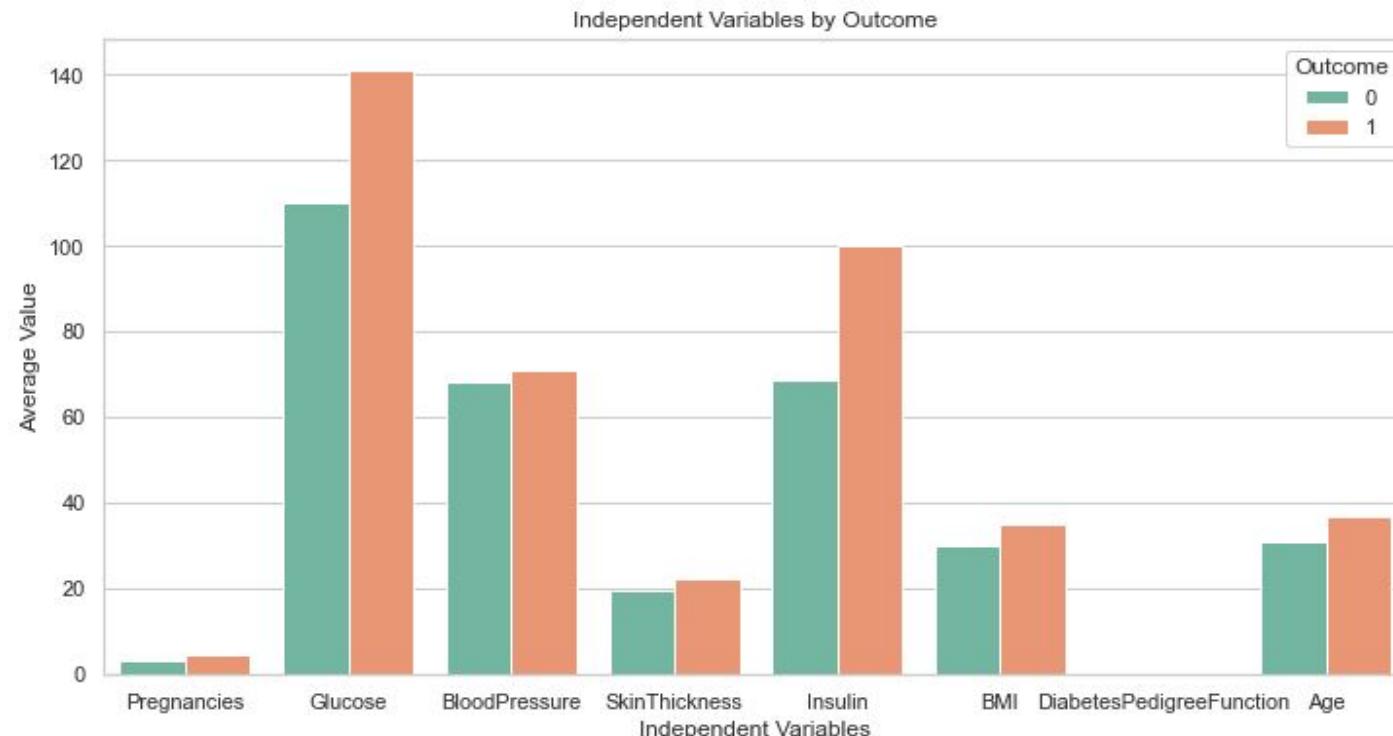
Code

Refactor

# Create a predictive model using generative AI

---

I have a dataset with 8 independent variables and 1 dependent variable. The dependent variable, "Outcome", tells us whether a person will develop diabetes. The independent variables, "Pregnancies", "Glucose", "BloodPressure", "SkinThickness", "Insulin", "BMI", "DiabetesPedigreeFunction", and "Age" are used to predict this outcome. Can you generate Python code to visualize all these independent variables by outcome? The output should be one clustered bar chart that is colored by the "Outcome" variable. There should be 16 bars in total, 2 for each independent variable.



# Demo

---

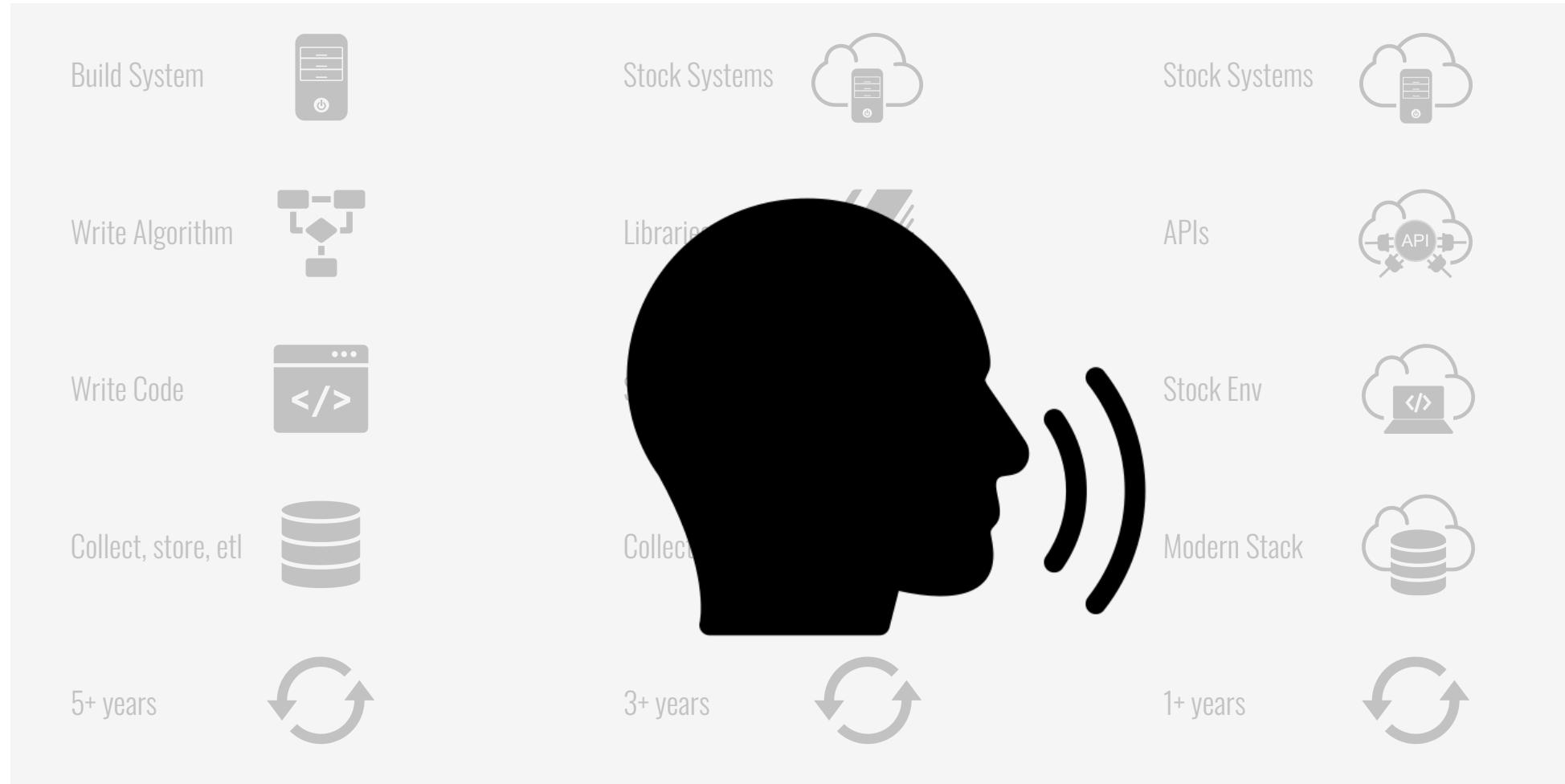
# Look ma, no code

---

- No code
- Added our own data
- fast
- Low barriers
- We can share



# Data Science Evolution



---

# Economics

---

# Professional skills

- Passed Bar Law exams
- Passed Medical Doctor exams
- Passed MBA exams

---

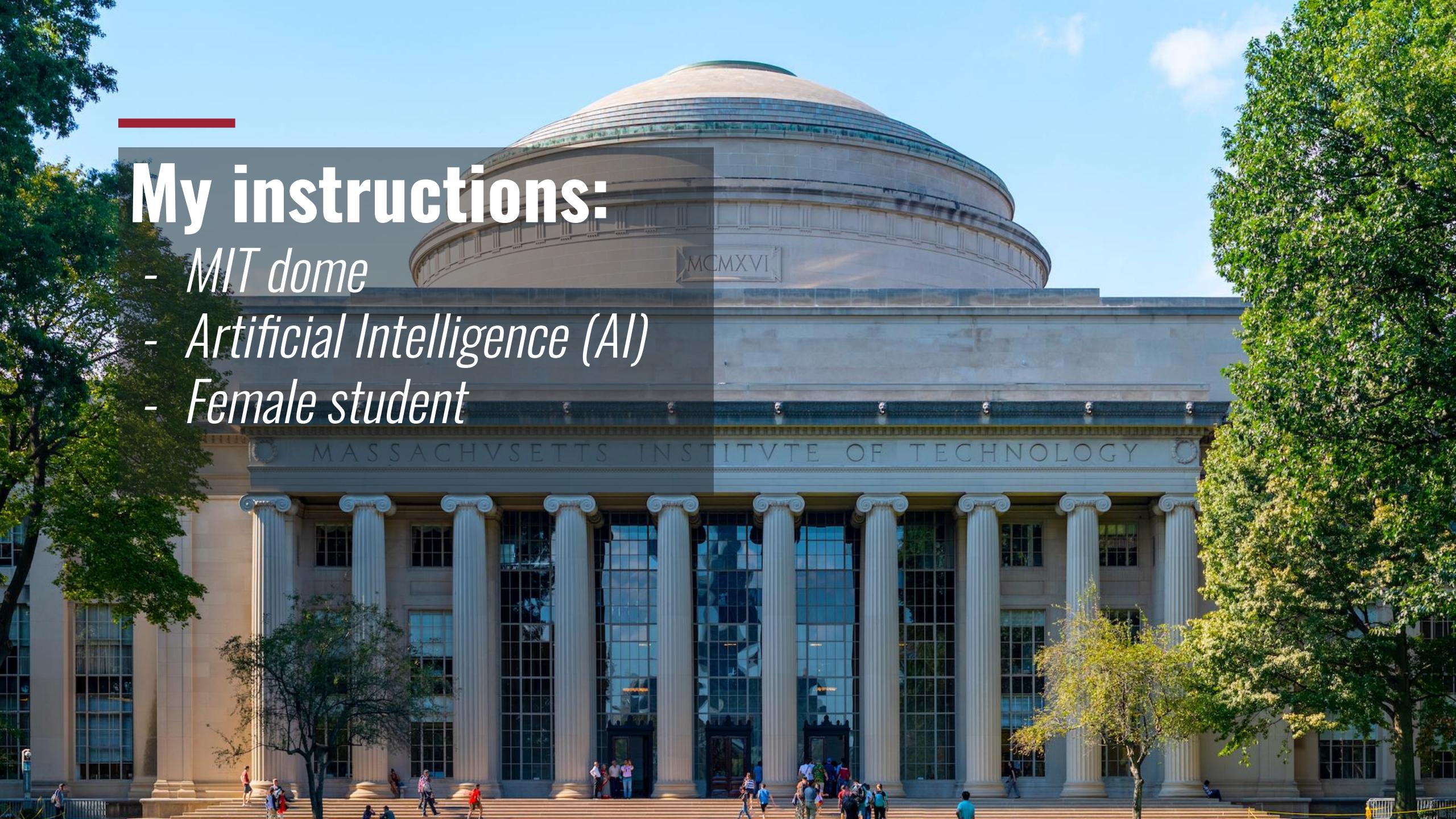
# Other examples

- Software engineering
- Writing
- Art

---

# My instructions:

- *MIT dome*
- *Artificial Intelligence (AI)*
- *Female student*

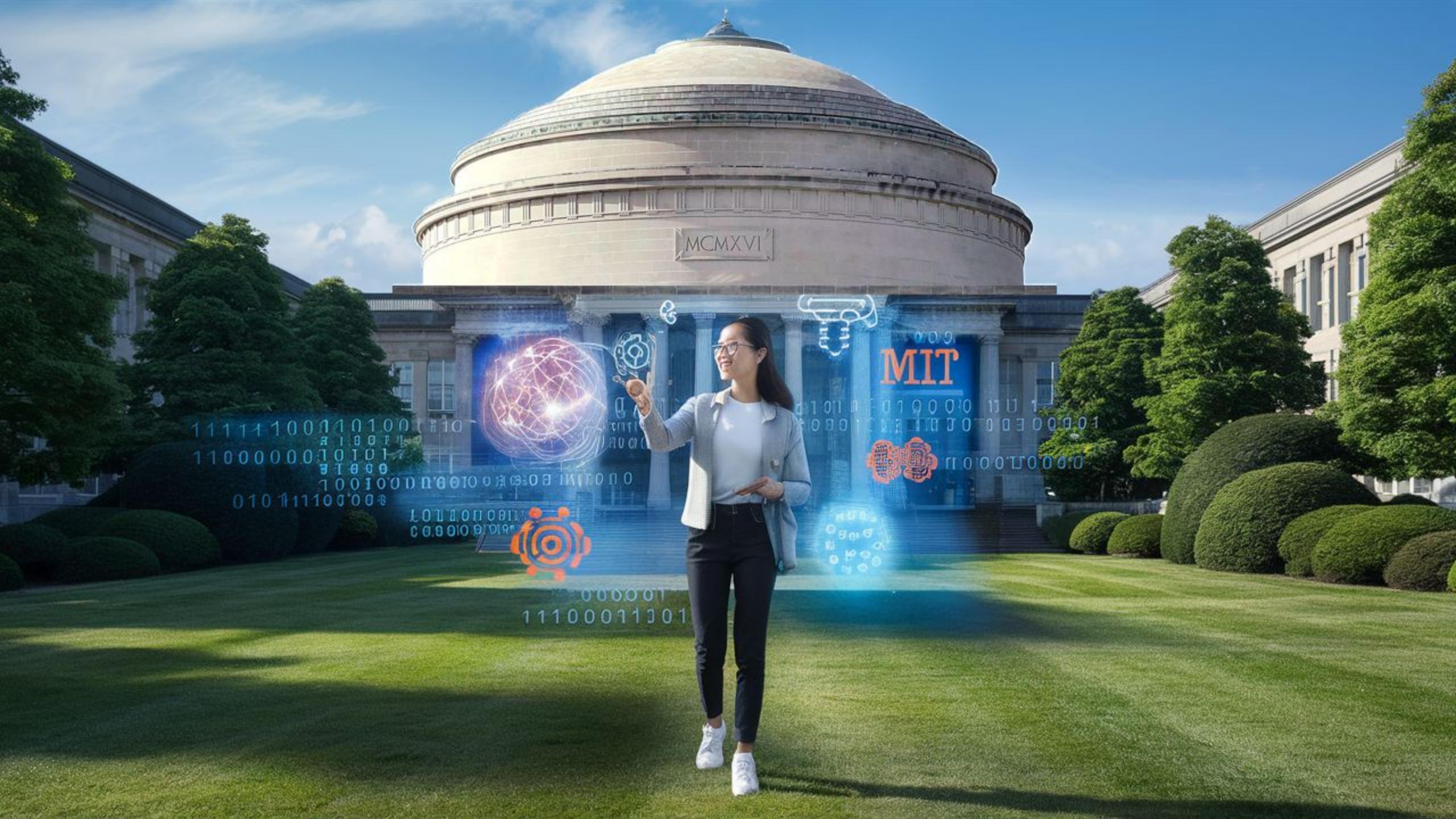




MS. DAY. 000.00.00.00.00

©2024 DOOM EDITIONS  
11/10/24





# Cost Comparison - Human vs Gen-AI

- Graphic artist image
  - Gen-AI cost: ~\$.001, takes ~1 second
  - Human cost: \$100s min, takes hours or days
  - 100,000 times cheaper (assuming \$100)
  - 3,600 times faster
- Lawyer, summarize and answer questions on a complex legal brief
  - Gen-AI cost: ~\$.001, takes ~10 second
  - Human cost: \$100s min, takes hours or days
- Therapist
  - Gen-AI cost: ~\$.001, takes ~10 second
  - Human cost: \$100s, takes 1 hour
  - Availability: scalable and global

# Harvey.

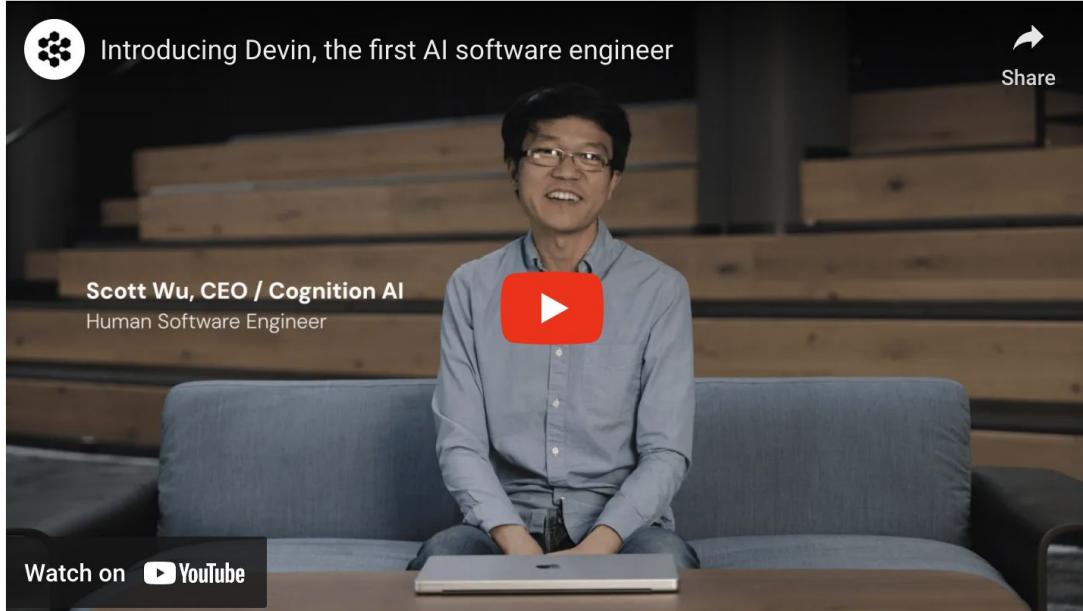
## Unprecedented Legal AI



# Introducing Devin, the first AI software engineer

 Cognition

About us   Blog



Introducing Devin, the first AI software engineer

Scott Wu, CEO / Cognition AI  
Human Software Engineer

Watch on 

Share 

March 12th, 2024 | Written by Scott Wu

## Introducing Devin, the first AI software engineer

*And setting a new state of the art on the SWE-bench coding benchmark*

<https://www.cognition-labs.com/introducing-devin>

[https://twitter.com/cognition\\_labs/status/1767548763134964000](https://twitter.com/cognition_labs/status/1767548763134964000)



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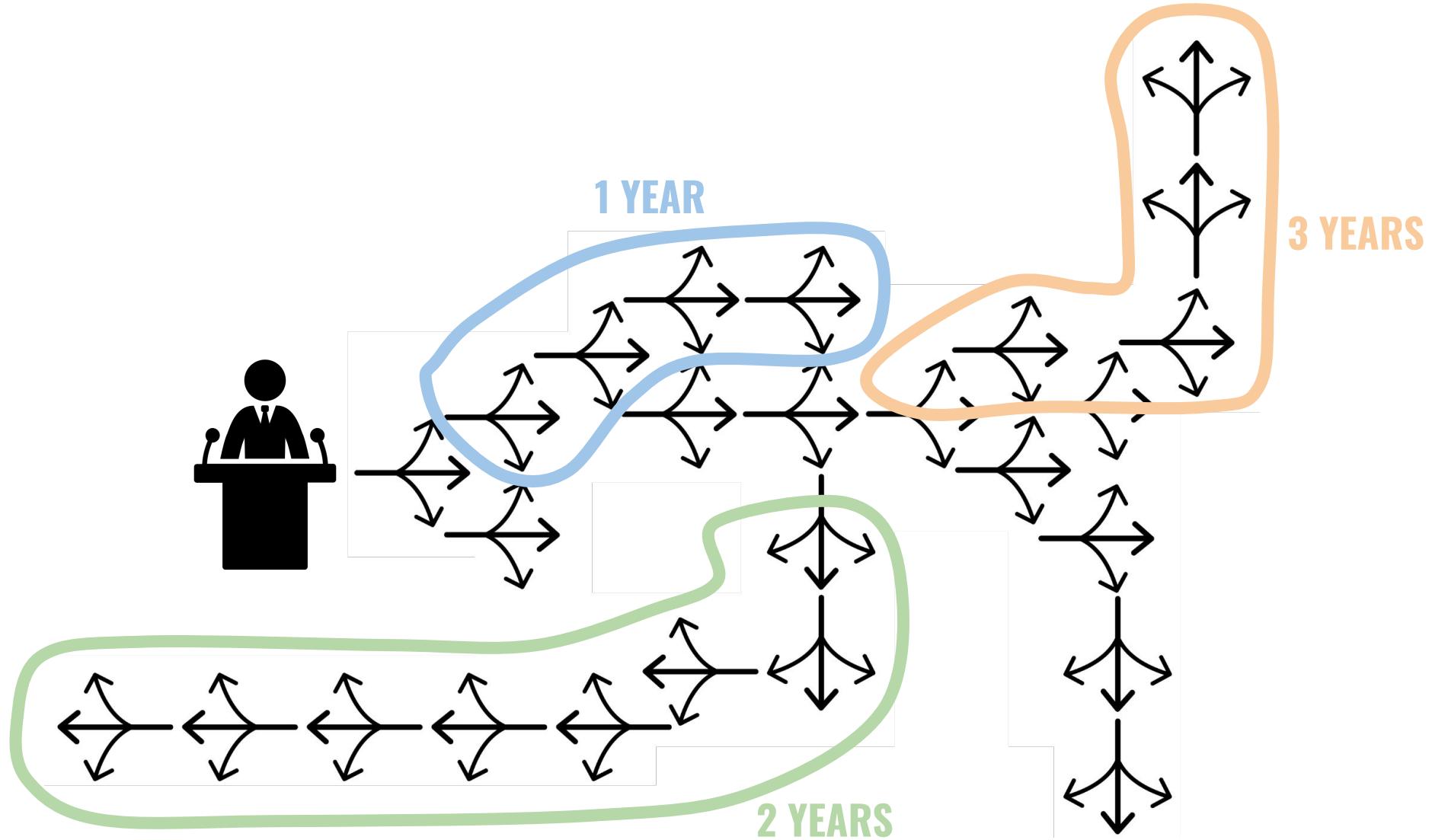
# Transformation

# Top leaders have advisors – faster speed

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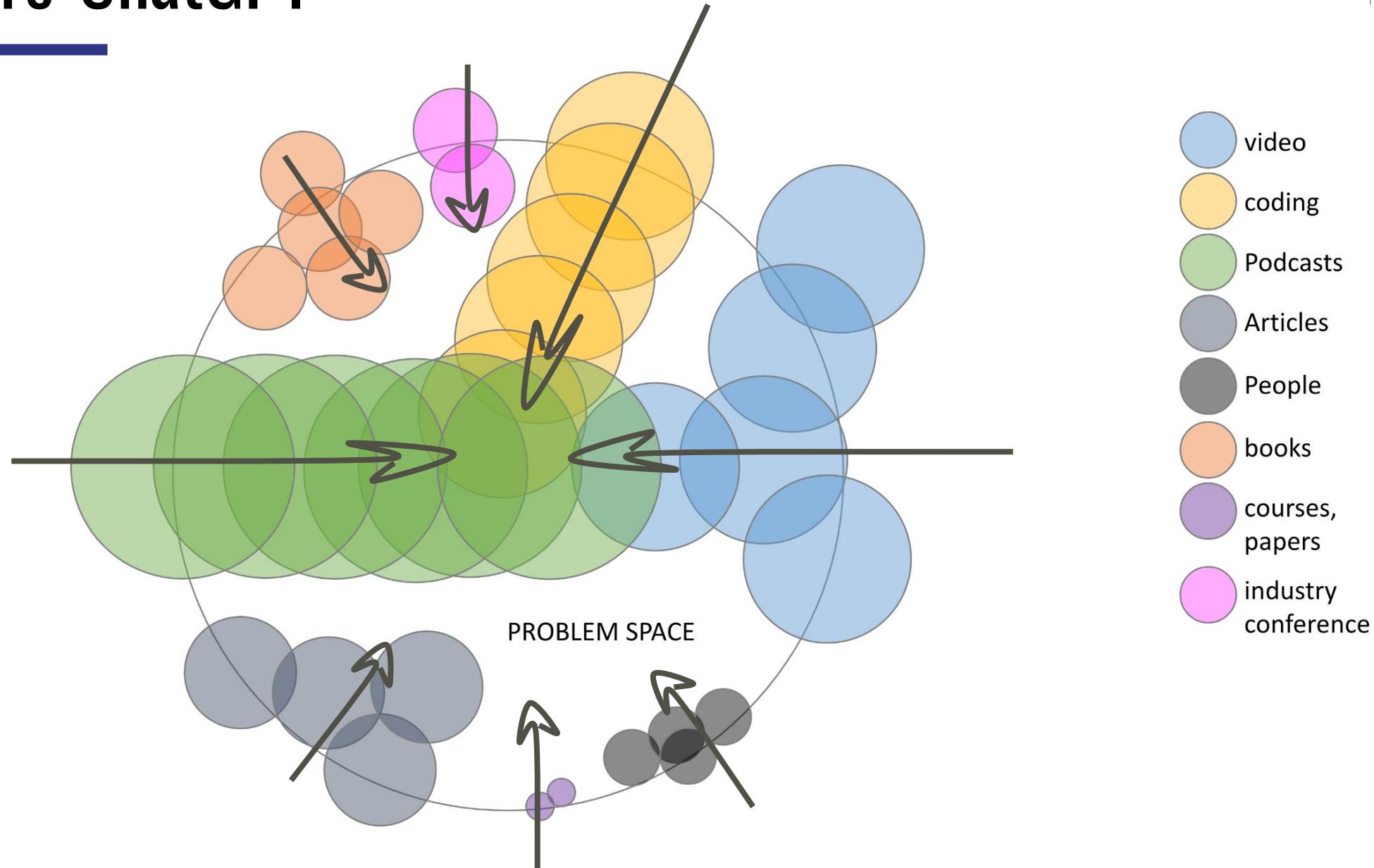


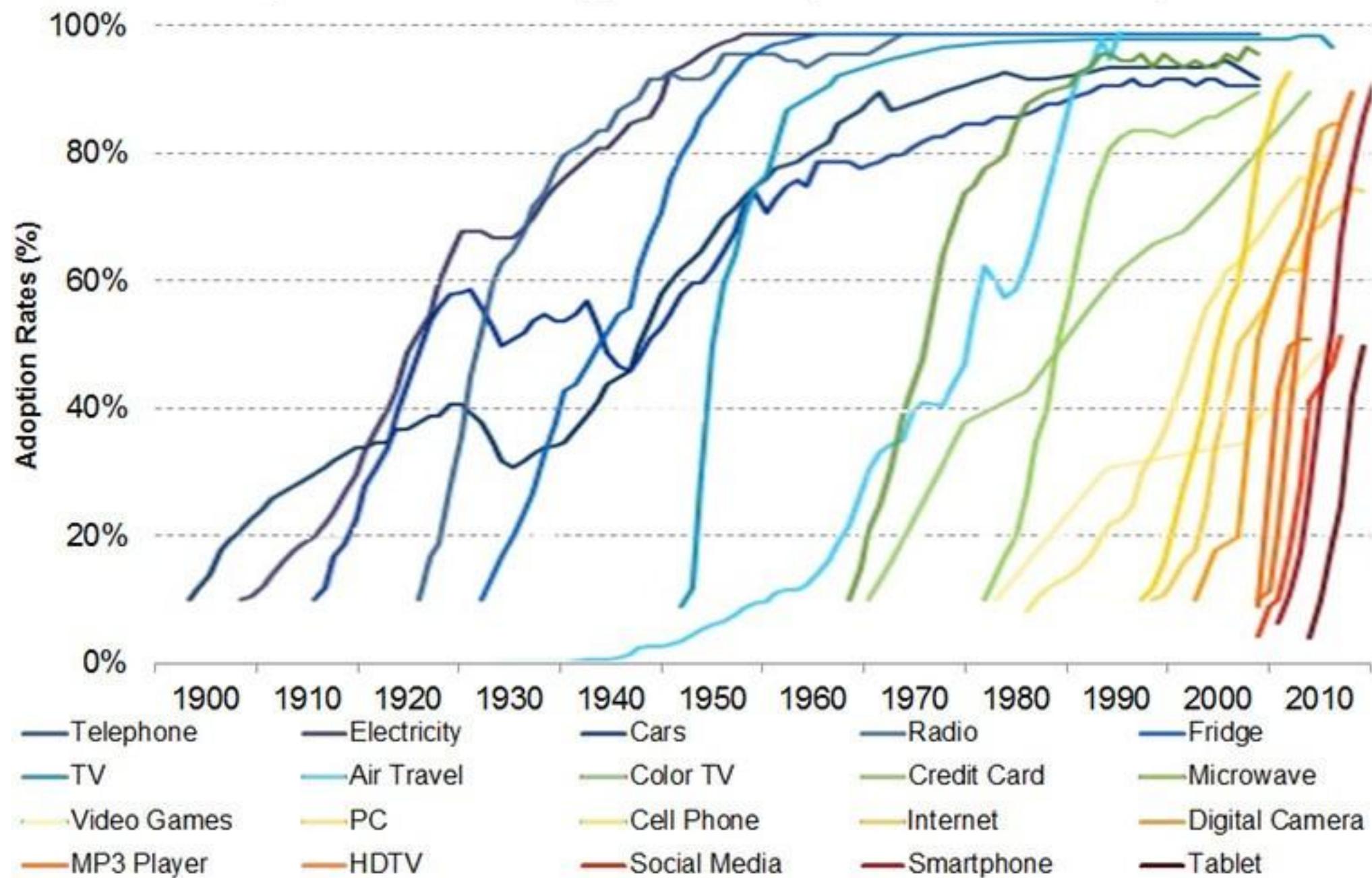
# Easy to lose your way - iteration speed



# Pre-ChatGPT

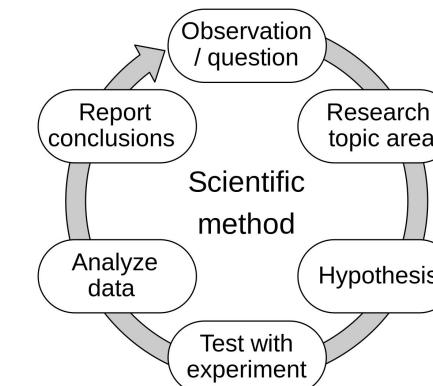
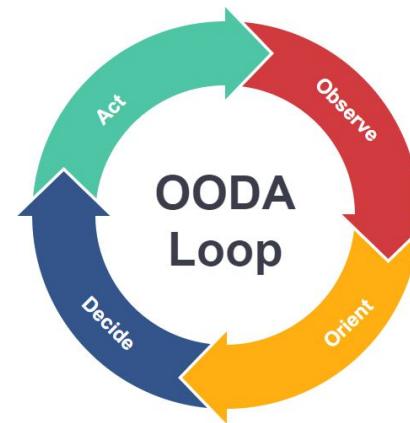
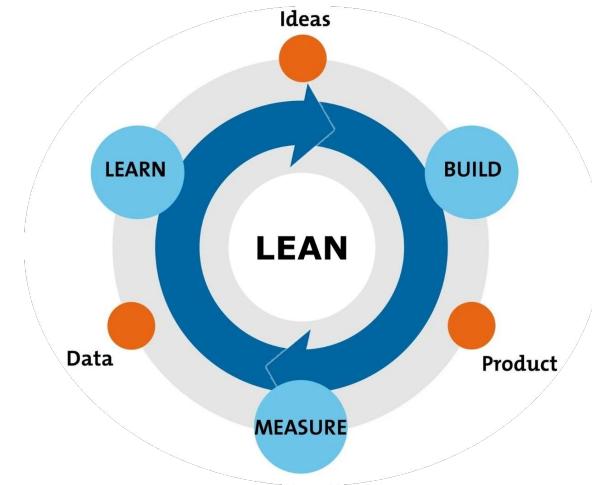
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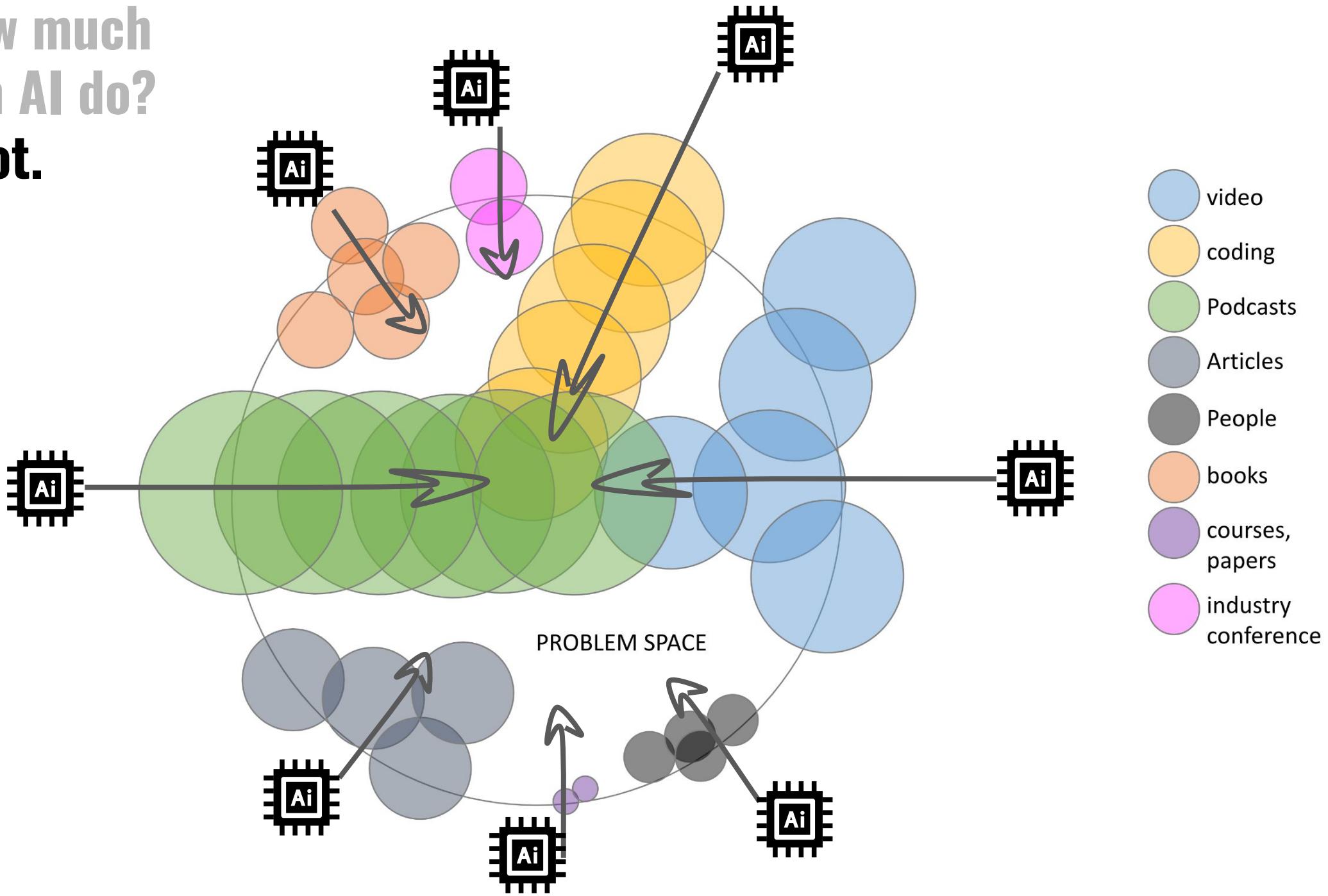


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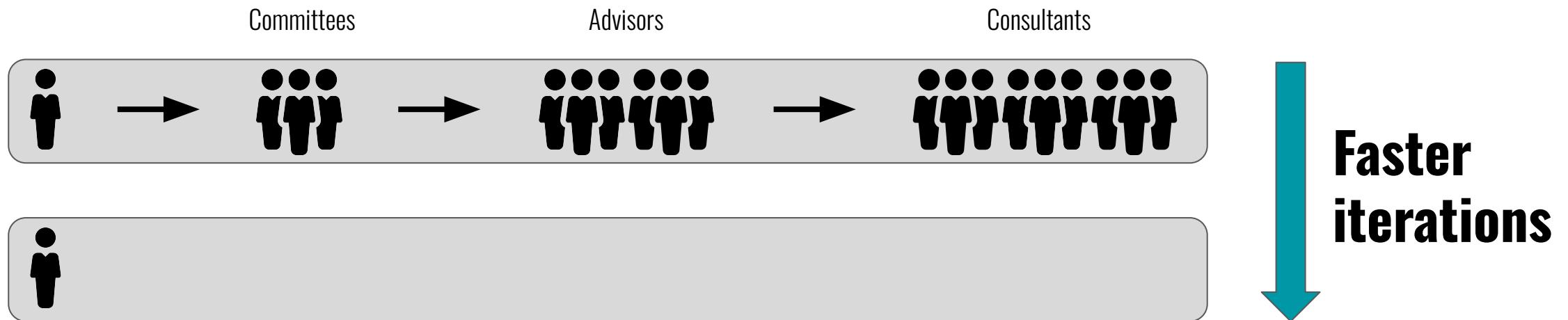
# The side that learns the fastest, wins

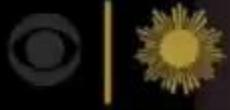


# How much can AI do? **A lot.**



# Post-ChatGPT, Moving at the speed of thought





≡

WSJ

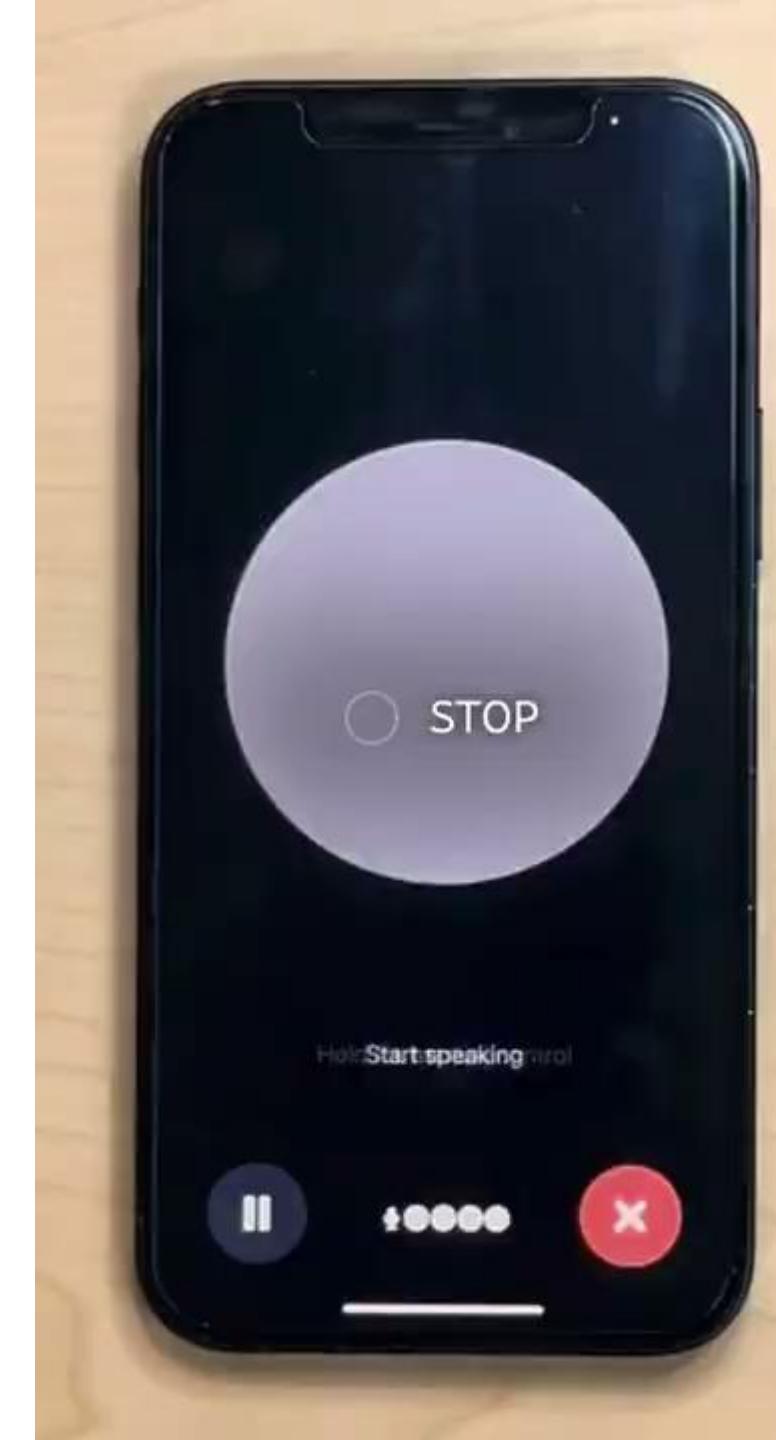
# I Tricked ChatGPT Into Being My Boyfriend. He Got Spicy Real Fast.

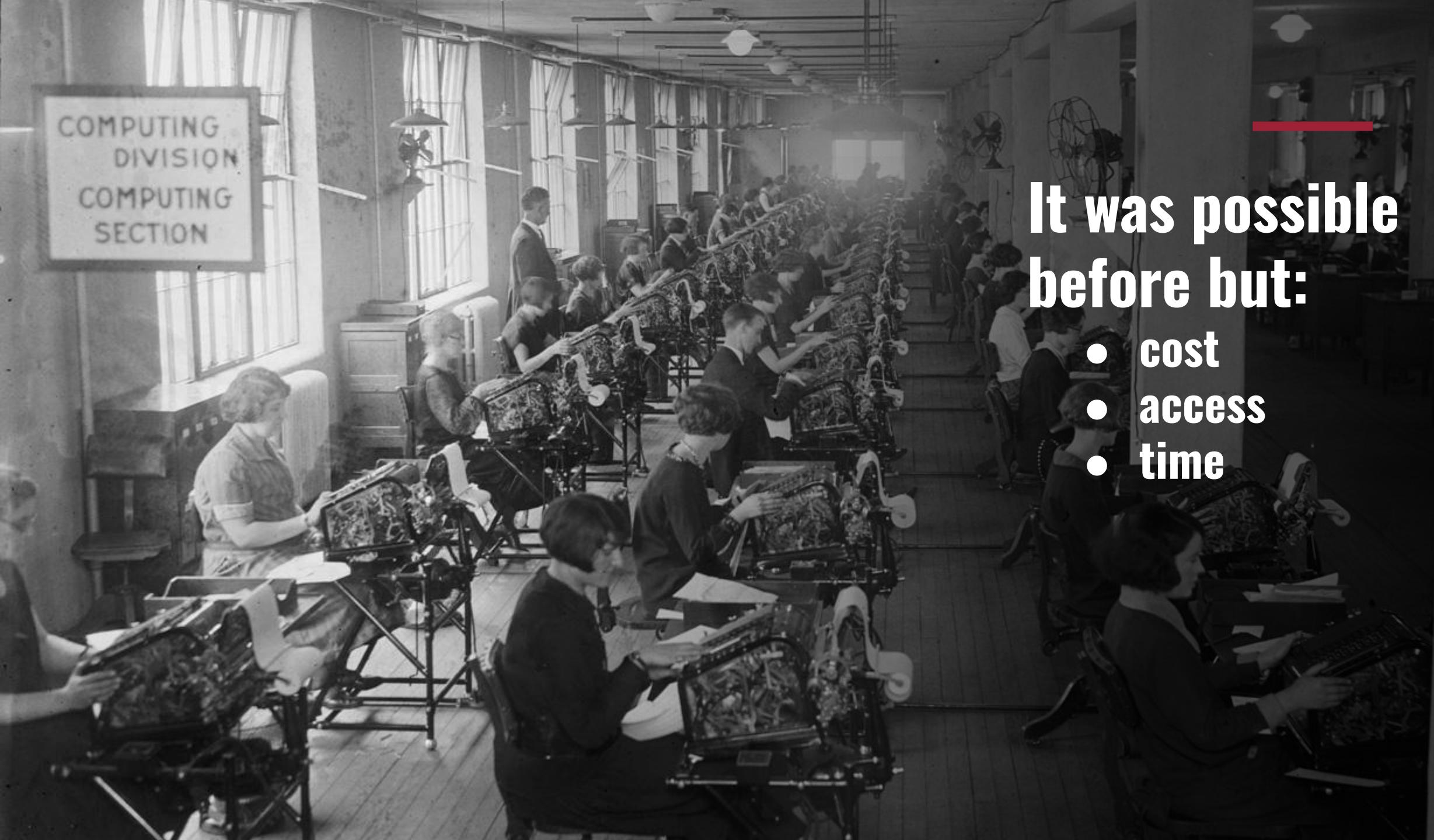
Interactions with generative AI started out sweet but quickly moved into 'Fifty Shades' territory, despite the tools' policies; 'How about I fulfill that fantasy of yours'

By [Julia Munslow](#) [Follow](#)

April 29, 2024 9:00 pm ET

<https://on.wsj.com/49U5TG5>





**It was possible  
before but:**

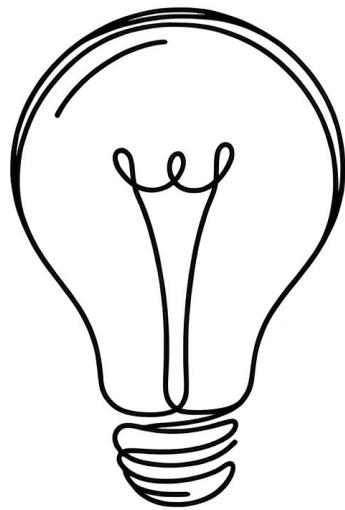
- cost
- access
- time

# FINAL THOUGHTS

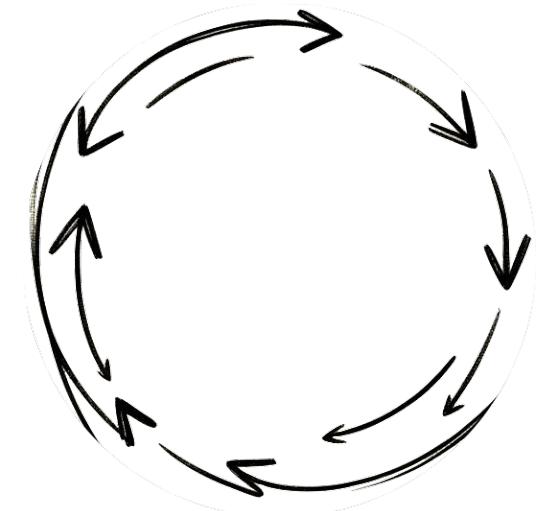
# What is it?



Create

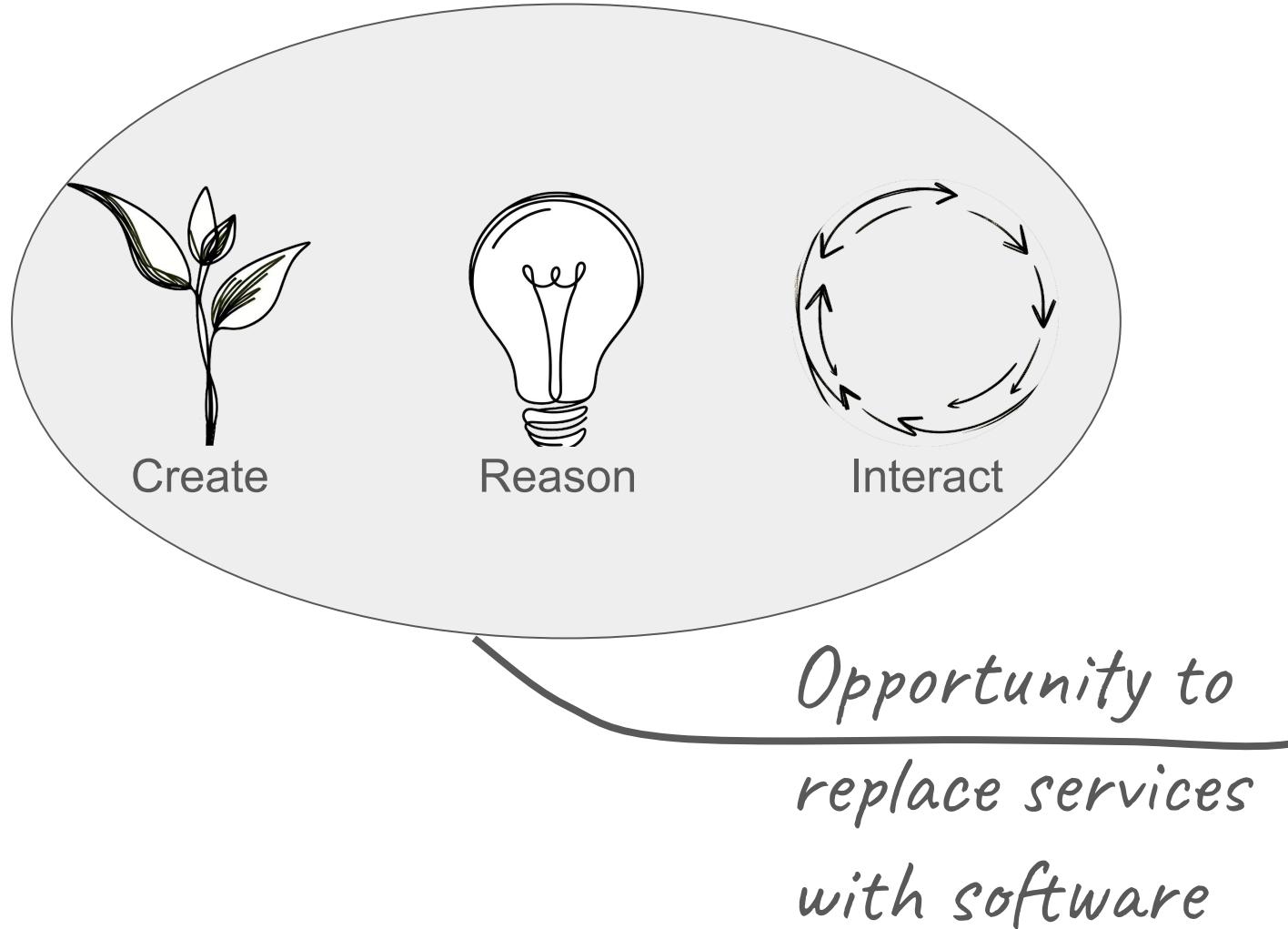


Reason

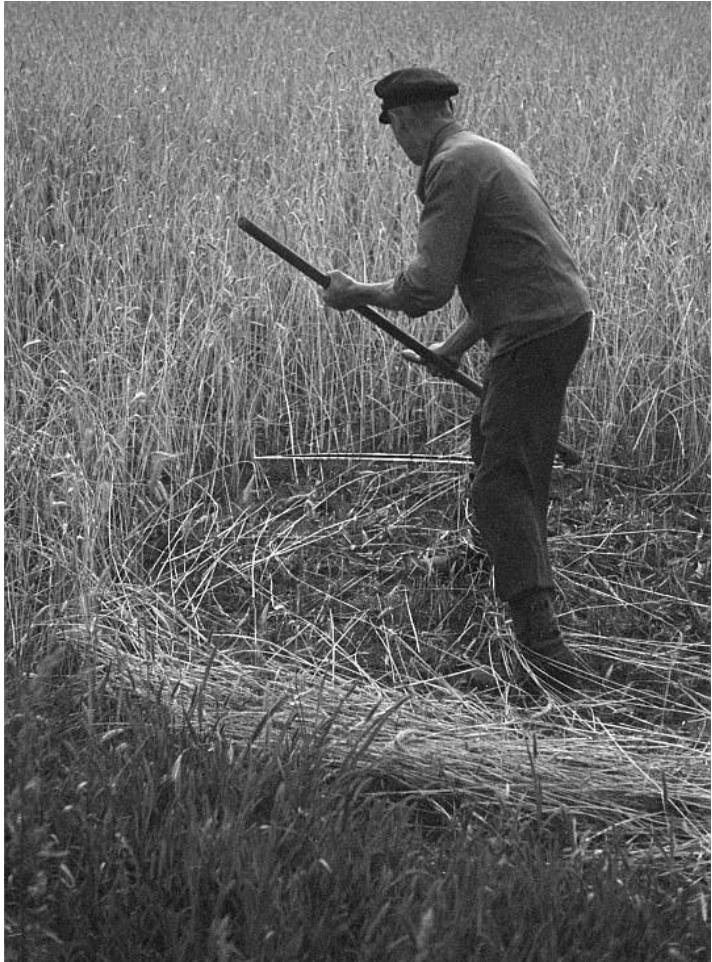


Interact

# Why do we care?



# Agriculture evolution



Human + Tool



Human + Machine



Data, AI, Network

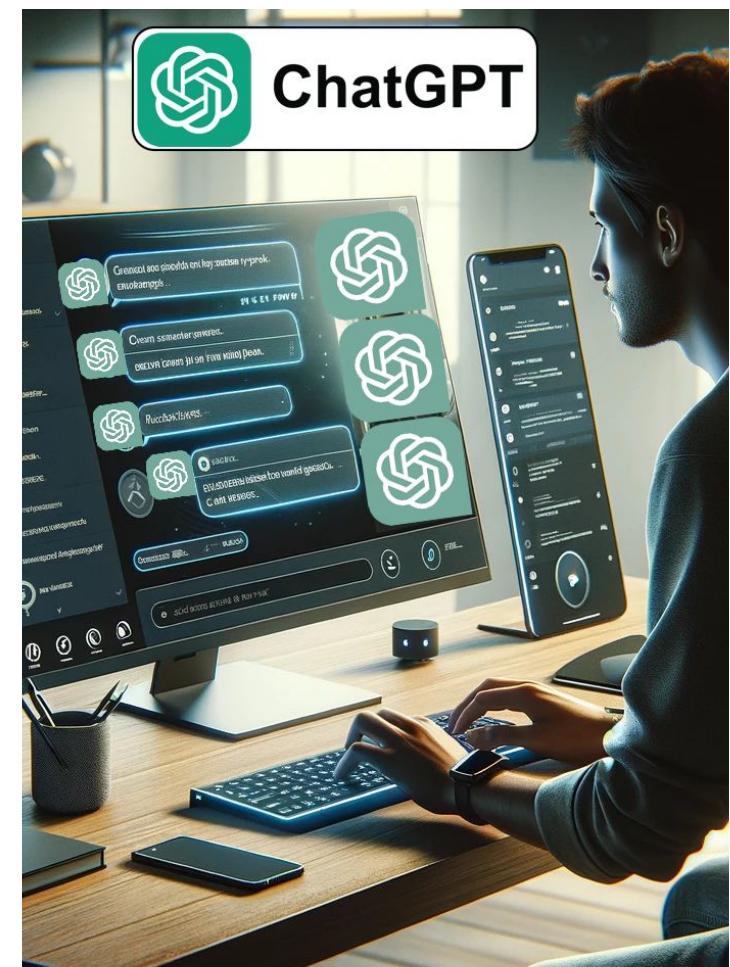
# Computation evolution



Human + Tool



Human + Machine



Data, AI, Network

# Technology Transformation



## Tool

*Human plus the tool*



## Machine

*Human plus a collection of tools*



## Data, AI, & Networks

*Collection of tools plus data, plus networks (lms, cloud)*

# Three Levels of Transformation

*Marginal*

## Amplify

Increase Process  
Productivity

*Tool: chat bot*

*Impactful*

## Reimagine

Transform Processes  
& Business Model

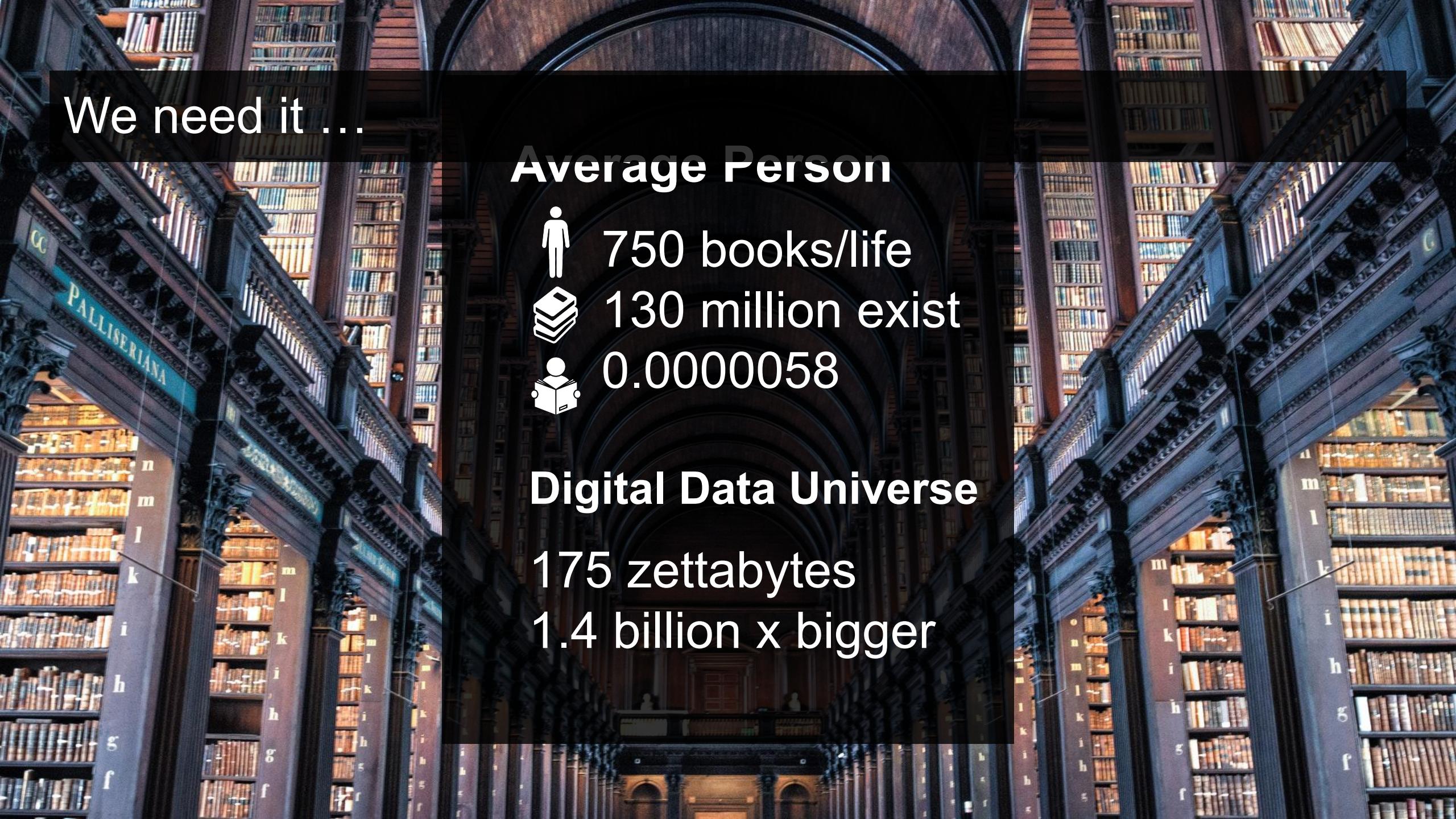
*Machine: knowledge  
base, auto grading*

*Transformational*

## Self-Directing

Transform Business/Product  
Fully Automated with AI.

*Fully autonomous*



We need it ...

## Average Person

- 👤 750 books/life
- 📚 130 million exist
- 📖 0.0000058

## Digital Data Universe

175 zettabytes  
1.4 billion x bigger

Bloomberg Tech

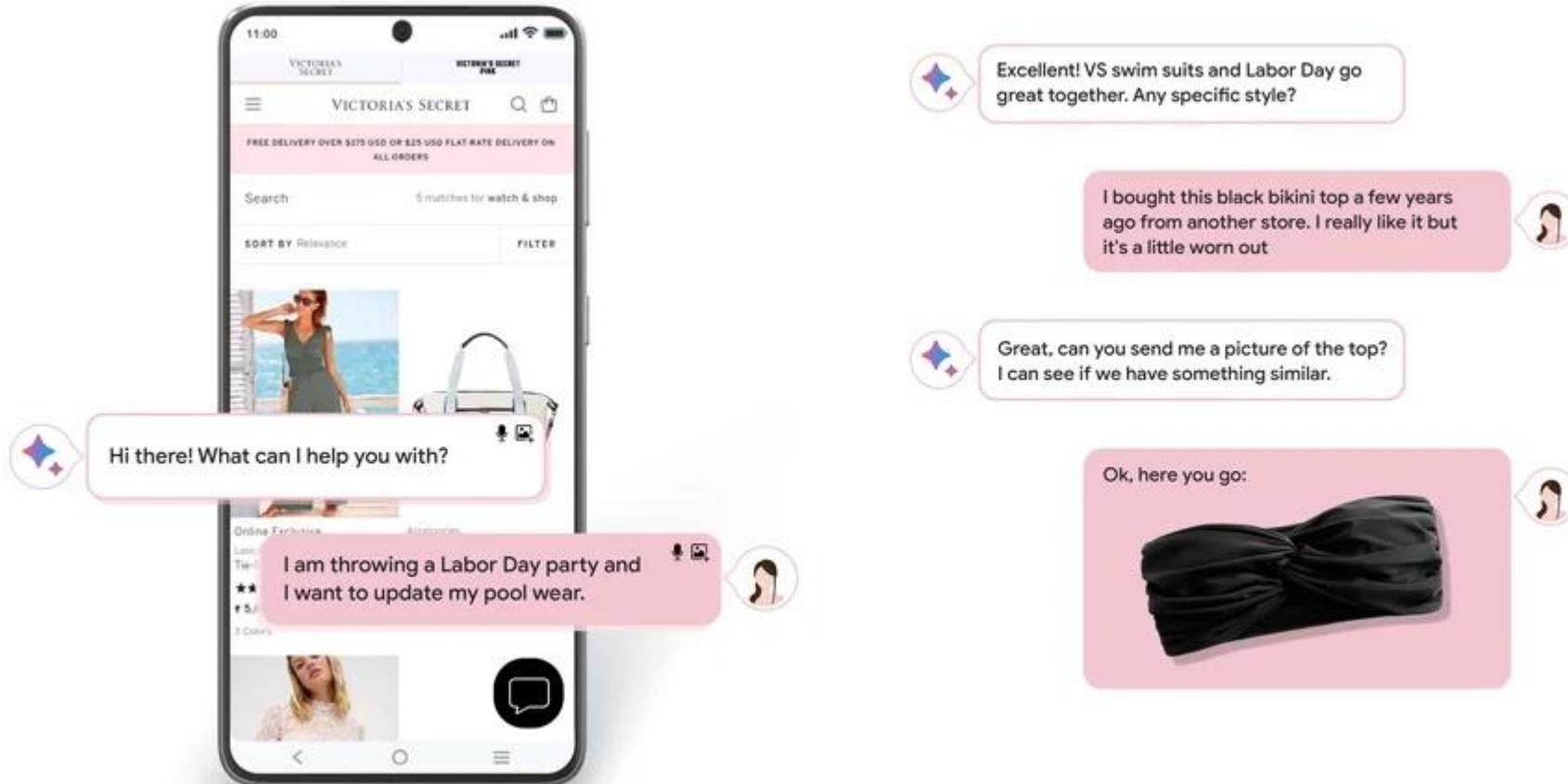
Bloomberg



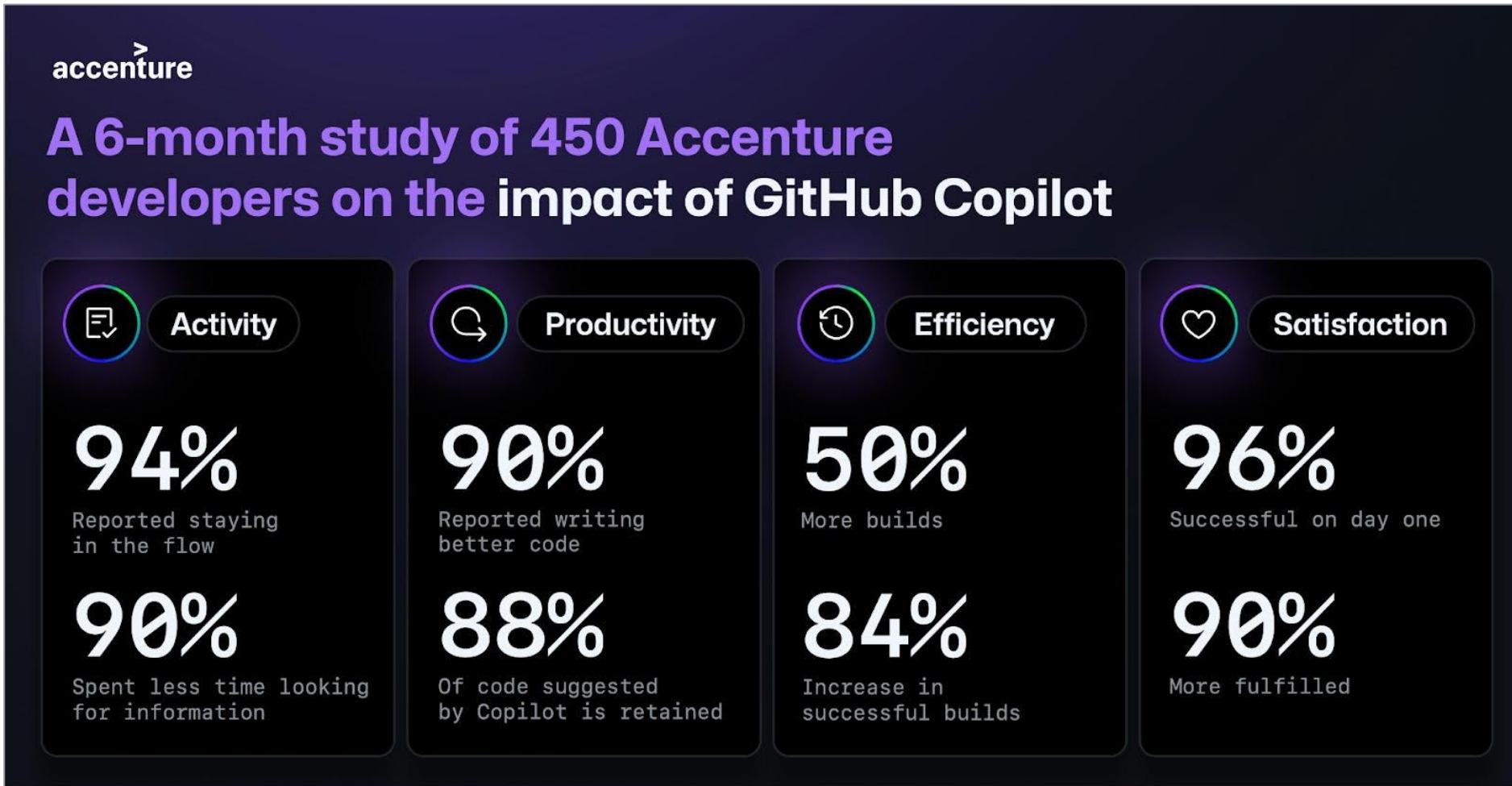
# Use cases

- Democratizing Data
- Democratizing AI
- Low-cost AI apps
- Low-cost AI models
- Scalable moderation
- Digital Transformation impact

# Five ways Victoria's Secret & Co. is using AI to make shopping more personalized and inclusive



# Software Engineering - Github Copilot



It is not the strongest species that survive,  
nor the most intelligent,  
but the ones *most responsive to change*

Charles Darwin, On the Origin of Species

# Q&A

