



FUTURE-PROOFING ALABAMA'S WORKFORCE: AI SKILLS AND THE JOBS OF TOMORROW

Joshua Jones

CEO, QuantHub





JOSHUA JONES

CEO, QuantHub

Joshua is a data science industry veteran with a twenty-five-year career spanning 4 languages and 50 countries. He has served on Alabama's Artificial Intelligence Commission, is a TEDx speaker, received his undergraduate degree from Alabama and holds an MBA from Emory University.

Inc.

Forbes

UB University Business

TIME



THE HECHINGER REPORT

Newsweek

The74

← Back

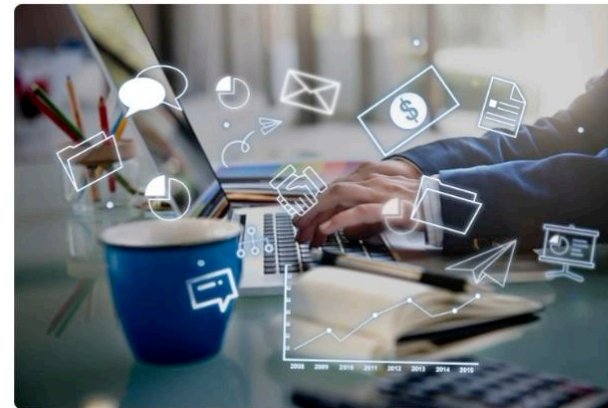
Trial - AI for Marketing

AI Foundations

7 Learning Activities

AI Foundations

Equip learners with essential AI knowledge and critical thinking frameworks for modern marketing practice. This course directly aligns to AACSB mandates for emerging technology integration—addressing the gap where 98% of marketers use AI but only 2% see measurable results due to lack of critical thinking skills, not tool access.



Achievement Available



CURRENT CUSTOMERS

THE UNIVERSITY OF
ALABAMA

VOYA
FINANCIAL

 **UNC**
KENAN-FLAGLER
BUSINESS SCHOOL

UAB

 **EMORY**
UNIVERSITY


**Southern
Company**

 **AUBURN**
UNIVERSITY




**HIGH POINT
UNIVERSITY**

UPSTATE

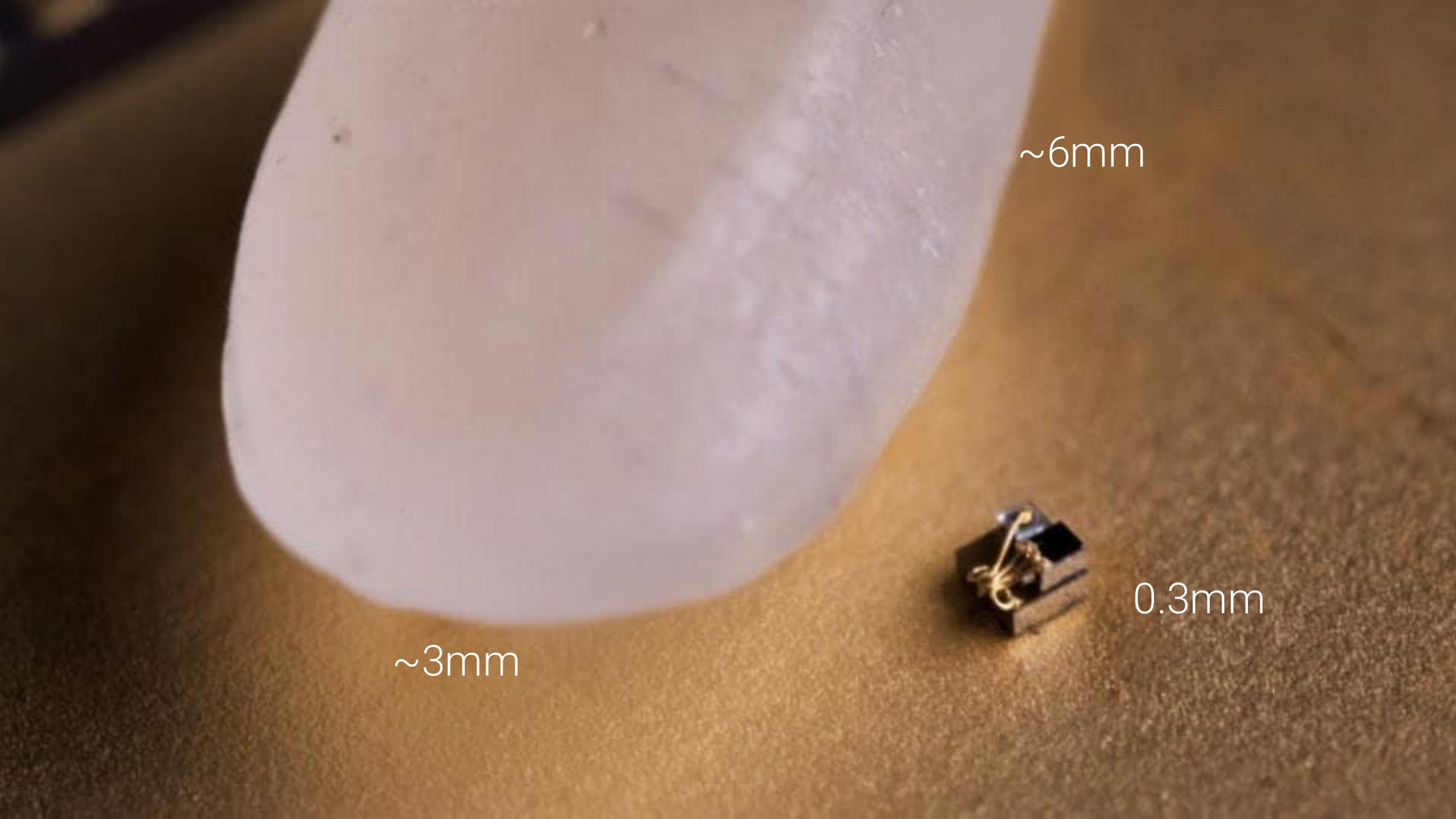
University of South Carolina Upstate

**OAKLAND
UNIVERSITY**


SH **Sam Houston
State University**

AROUND THE WORLD IN **ARTIFICIAL INTELLIGENCE**





~6mm

~3mm

0.3mm

6G Internet: Projected peak speeds of 1 terabit per second





Google releases Gemma 4 - an open-source multi- modal model that can run on your phone.

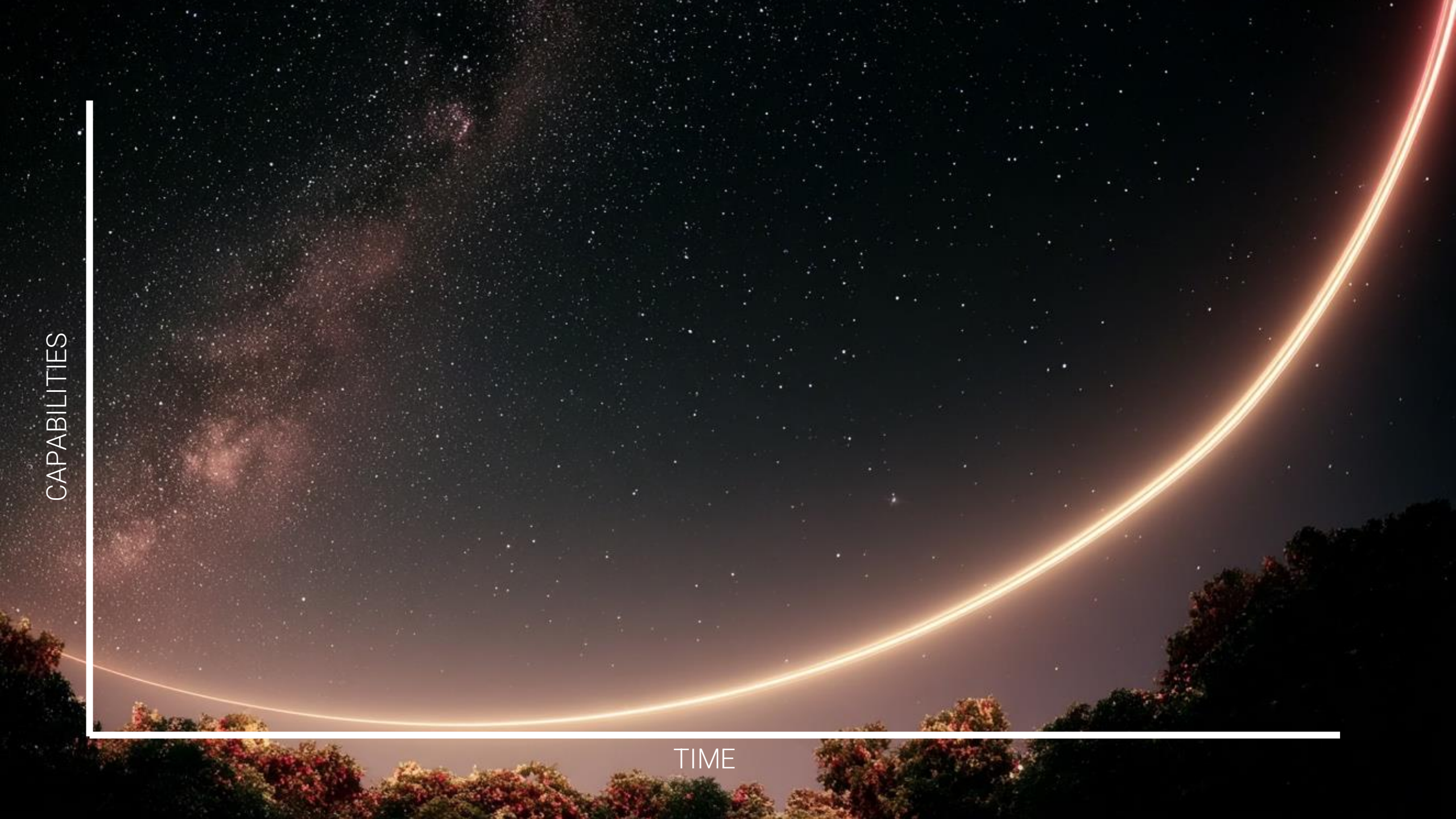
The 31B Dense model currently ranks #3 on the Arena AI leaderboard, outperforming many closed-source models and open-weights models 10–20x its size. This efficiency allows developers to achieve "frontier" performance on high-end laptops or workstations without needing a massive server farm.

HOW DID WE GET HERE?



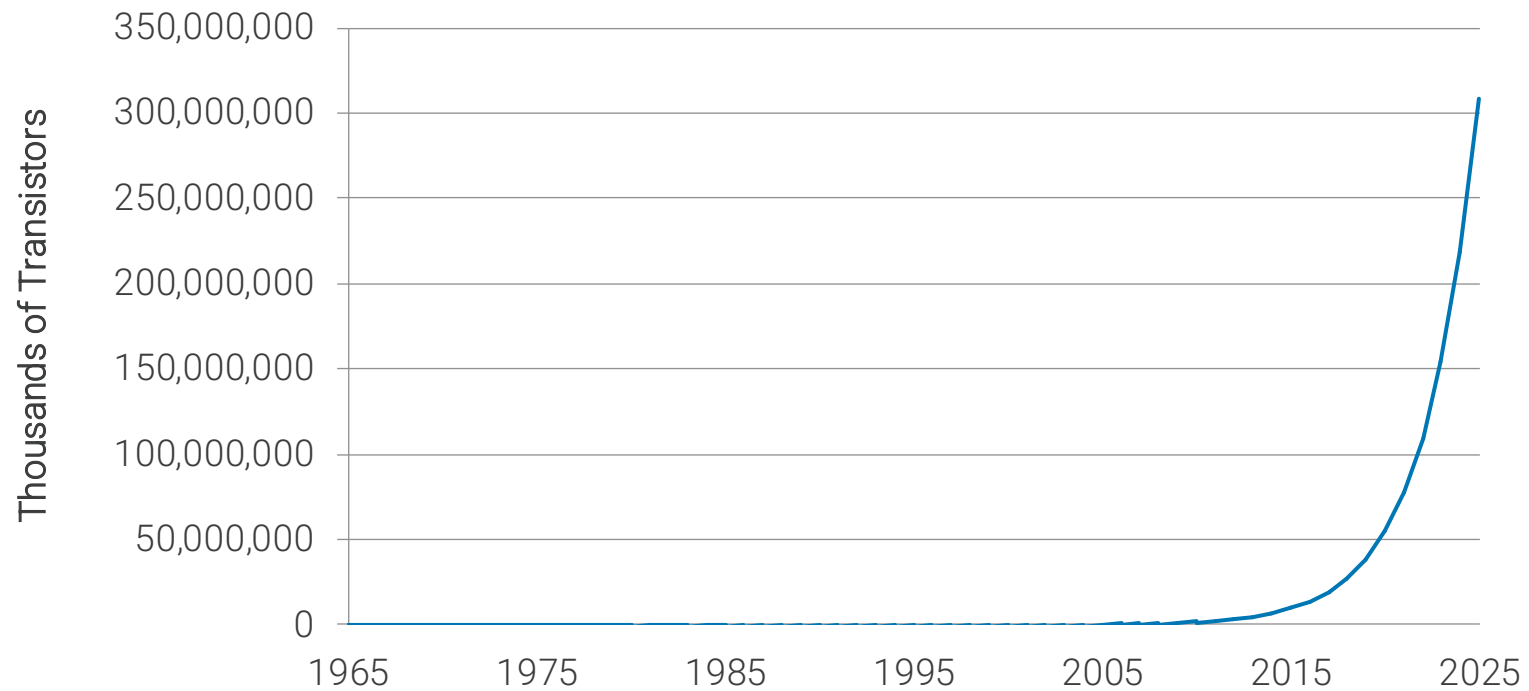
CAPABILITIES

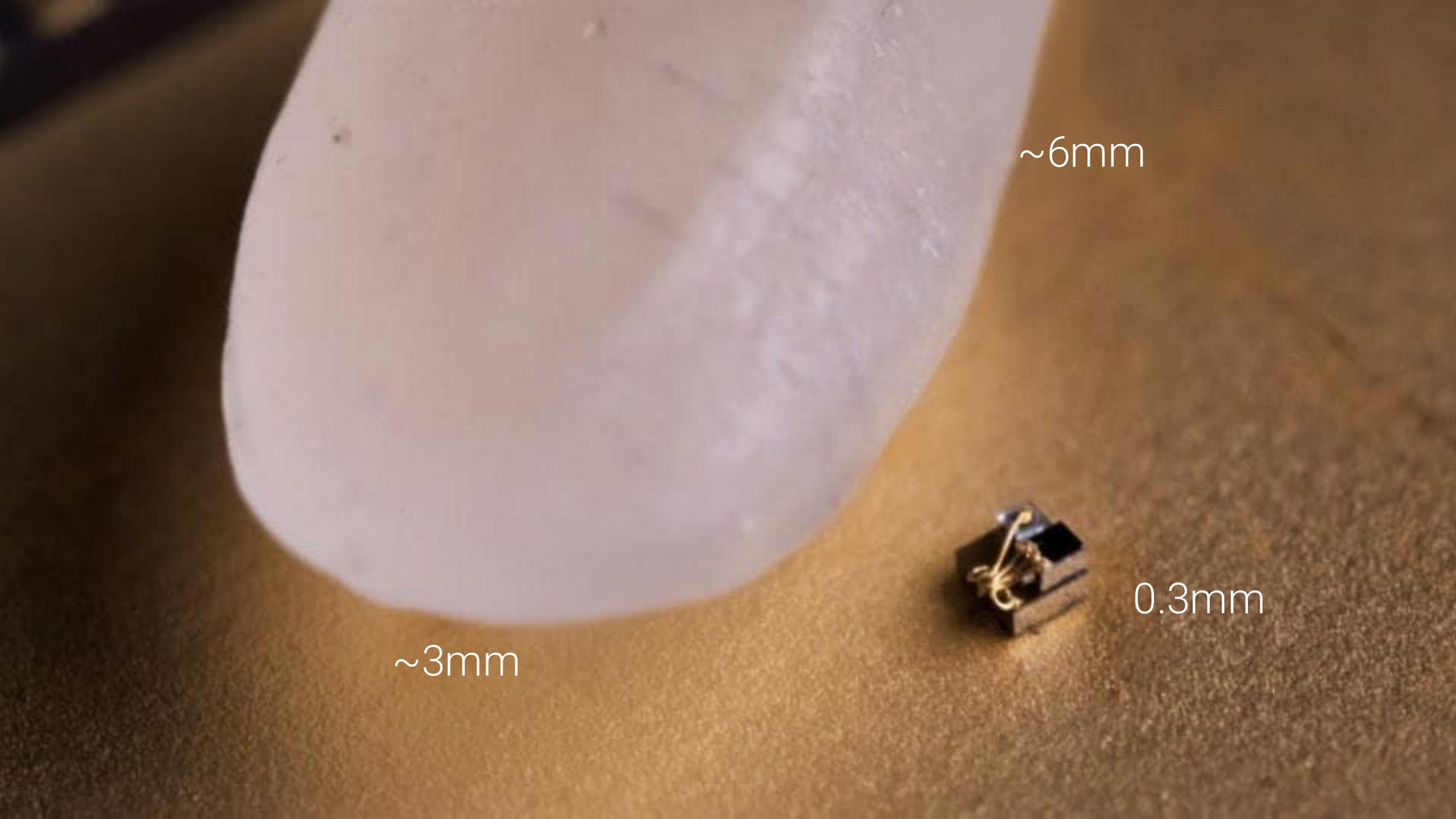
TIME



Our World
in DataOur World
in DataOur World
in DataOur World
in DataOur World
in DataOur World
in Data

The Number of Microchips on Transistors Doubles Every Two Years



A photograph showing a white, oval-shaped object, possibly a piece of paper or a small container, resting on a brown, textured surface. A small, black electronic component with gold-colored wires is also visible on the surface. The image includes three text labels indicating dimensions: '~6mm' near the top right of the white object, '~3mm' near the bottom left of the white object, and '0.3mm' next to the electronic component.

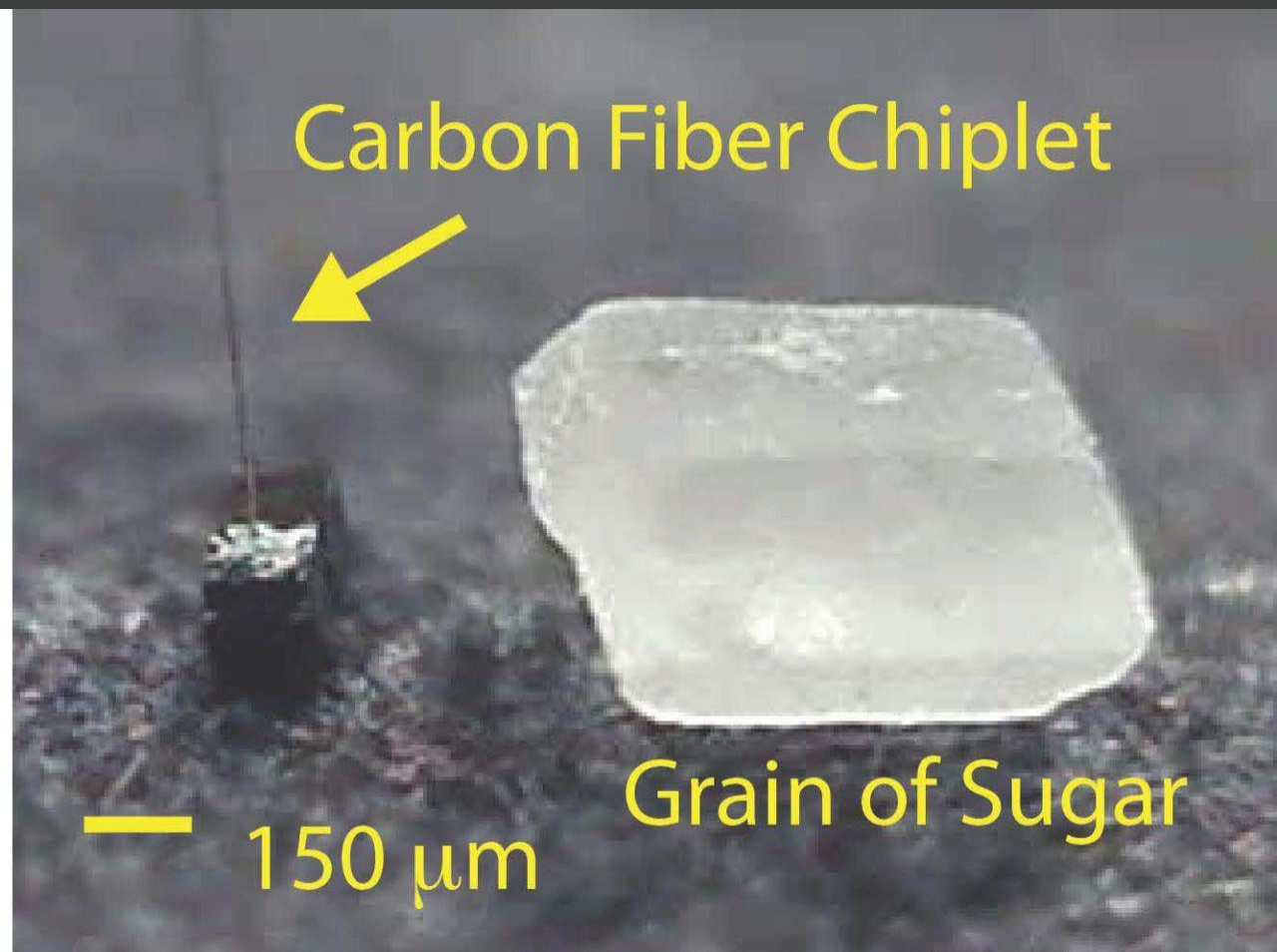
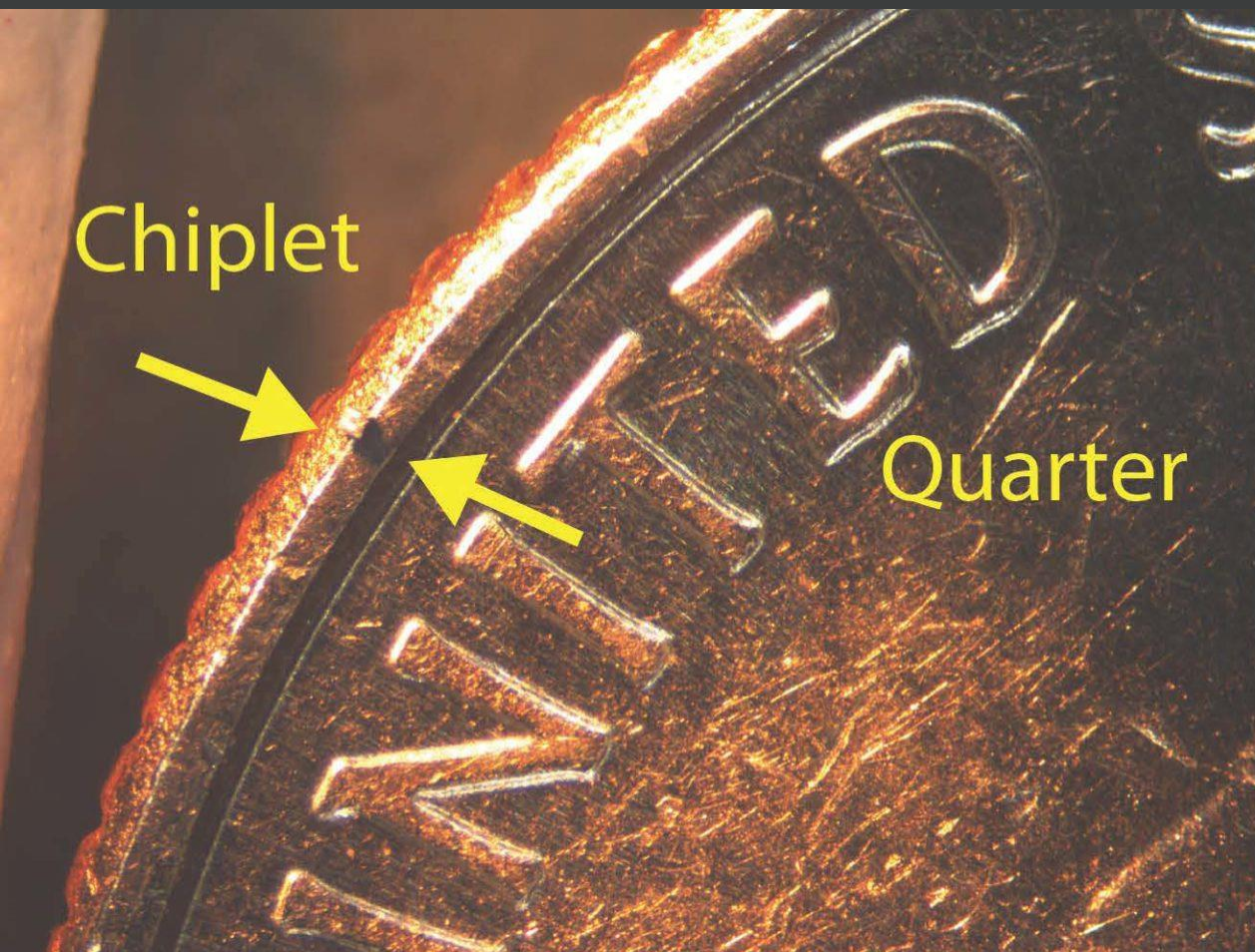
~6mm

~3mm

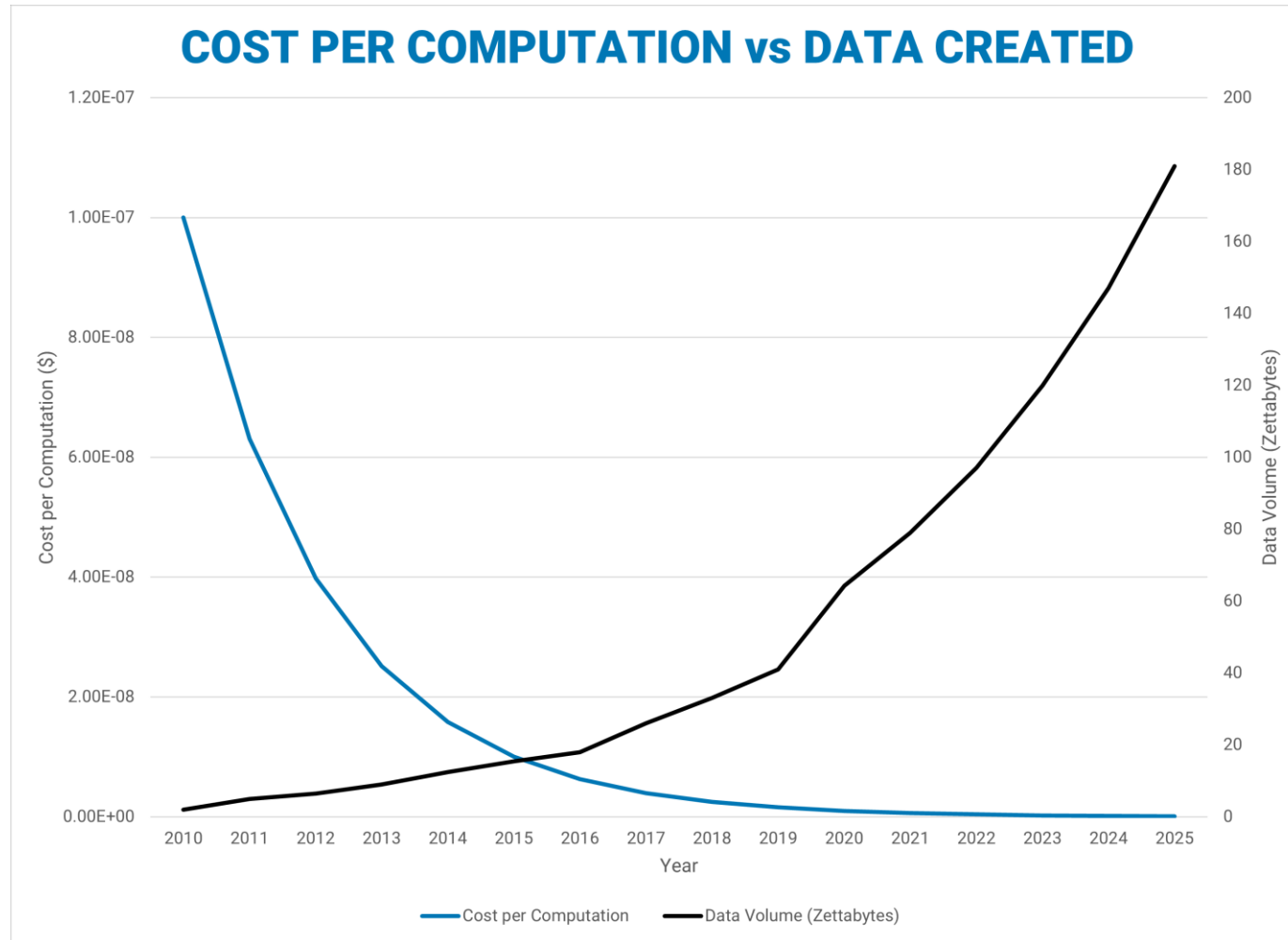
0.3mm



0.15mm





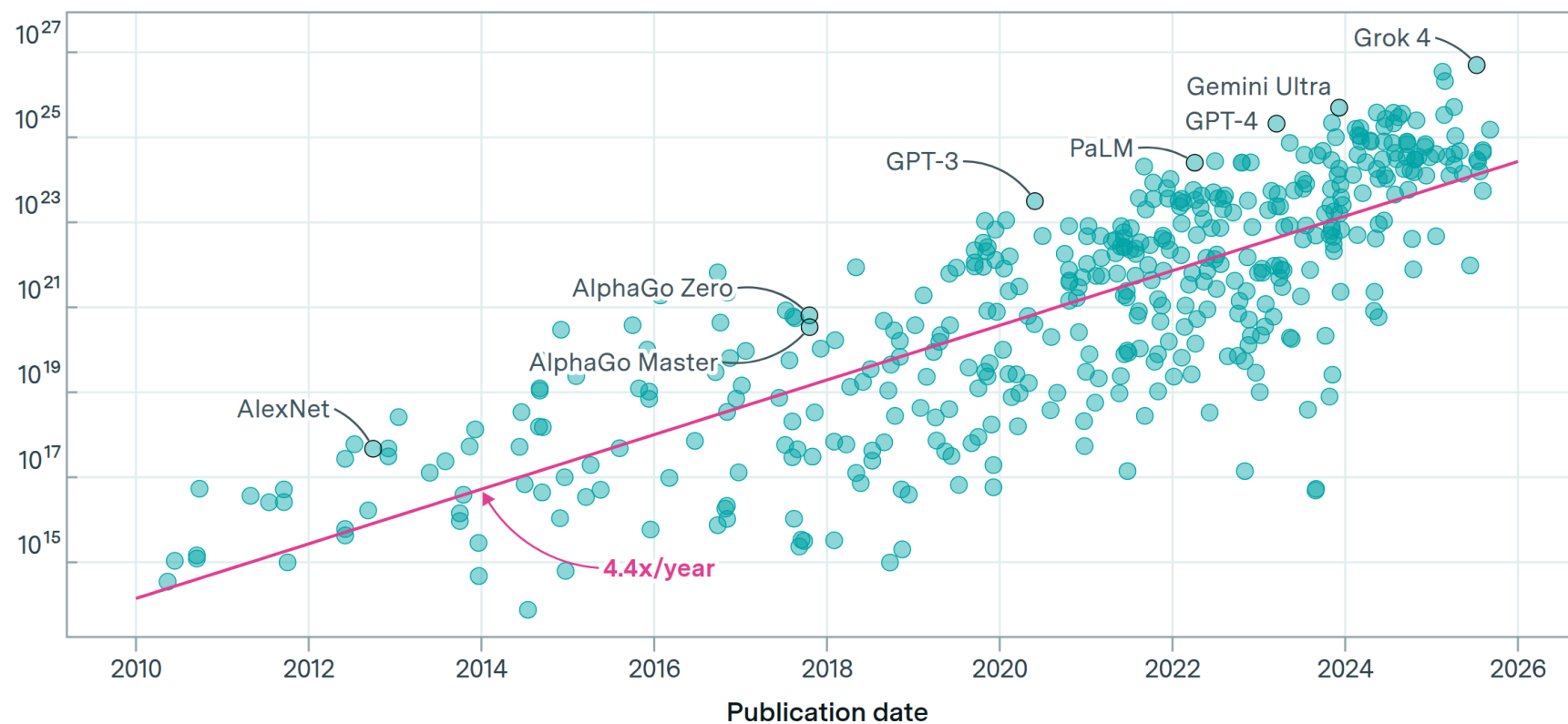


Training compute of notable models

EPOCH AI

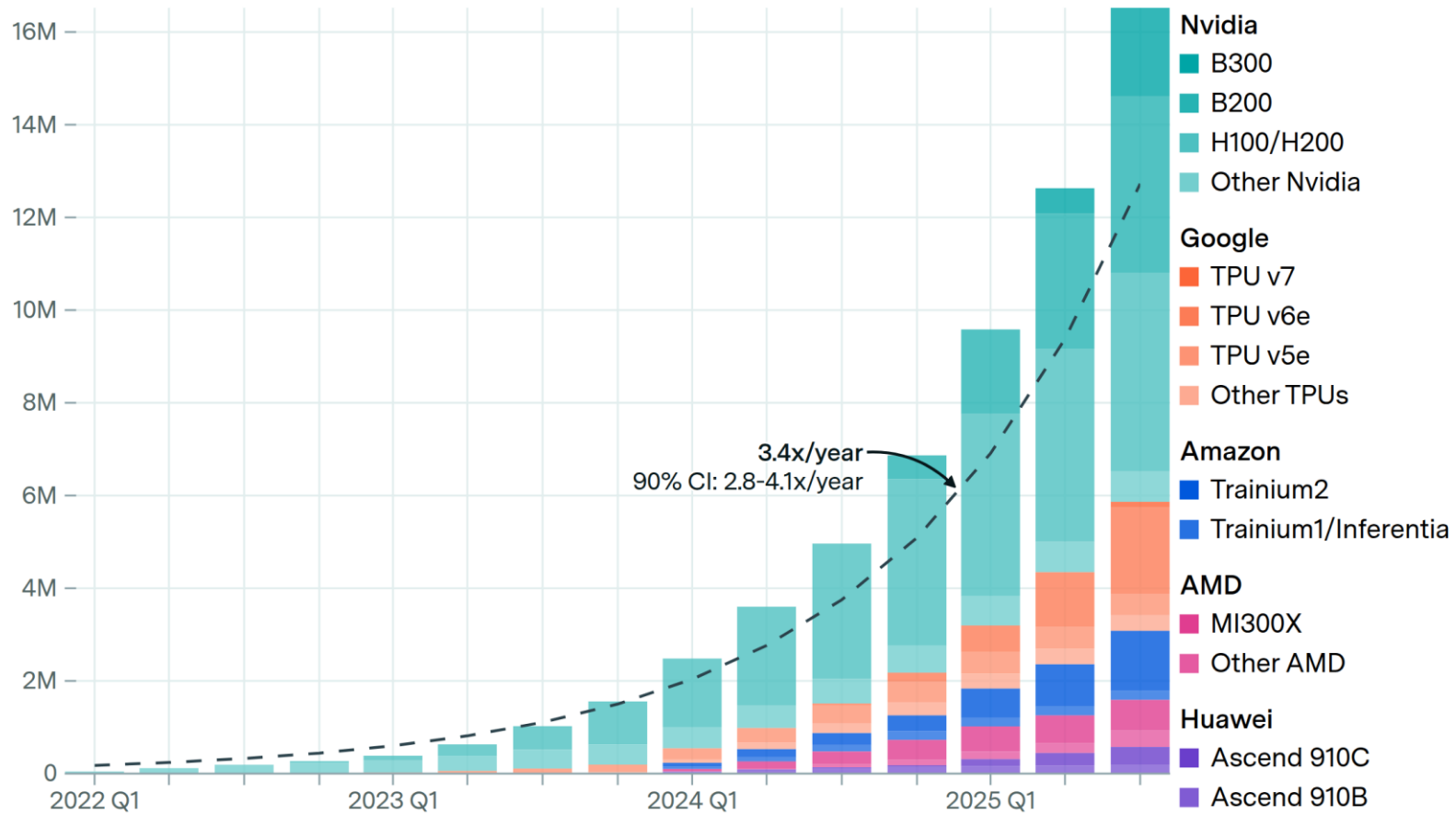
Training compute (FLOP)

443 models



Global AI computing capacity is doubling every 7 months

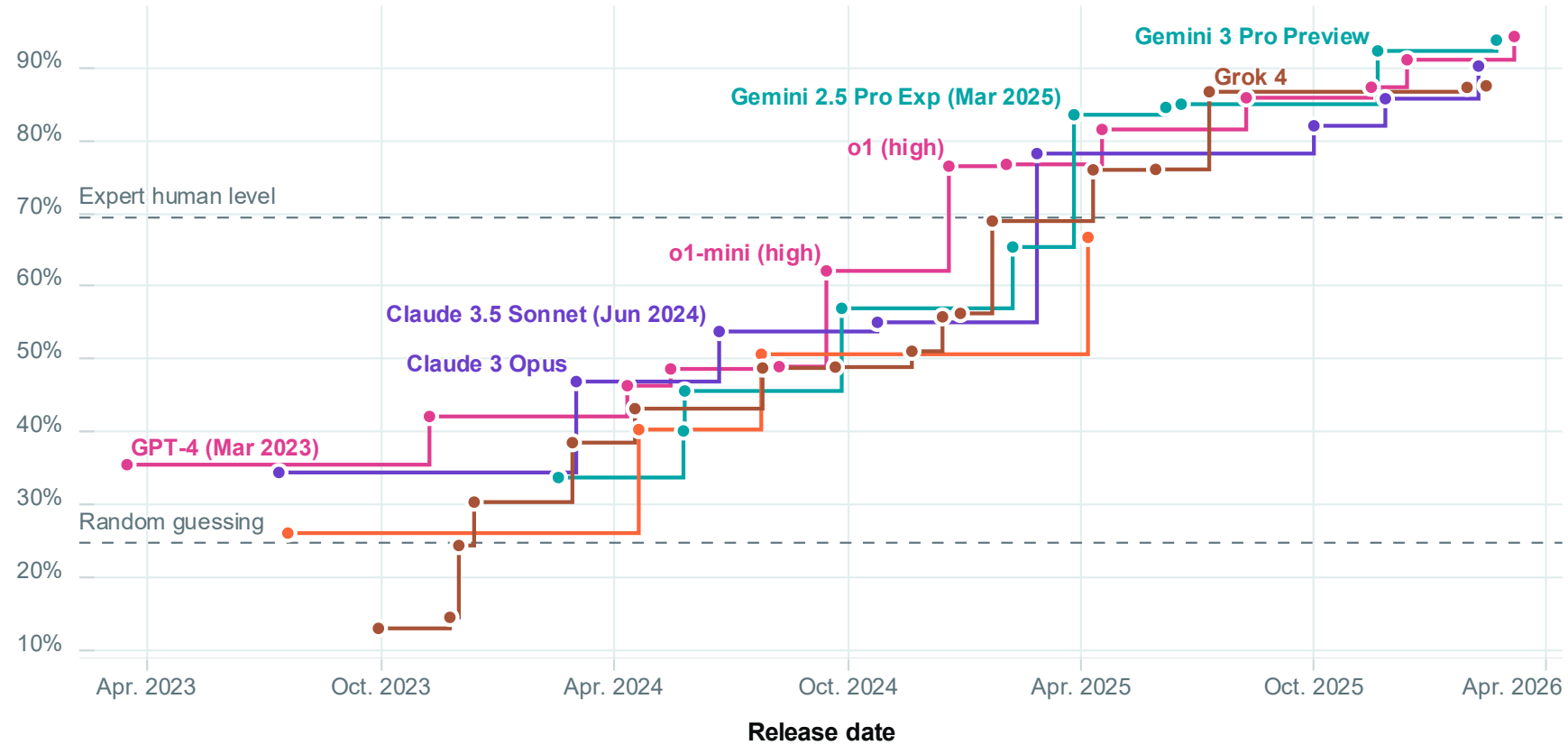
Cumulative compute capacity (H100e)

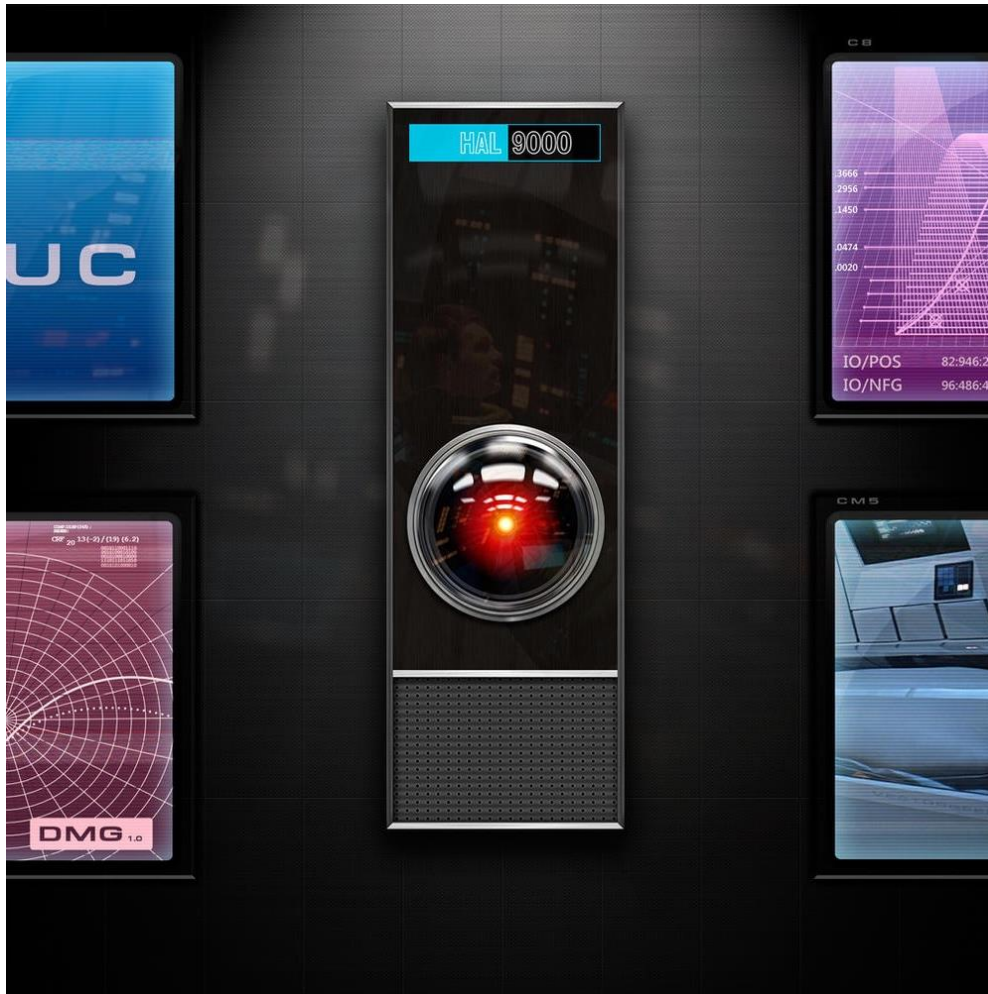


AI performance on a set of Ph.D.-level science questions

GPQA Diamond accuracy

52 Results





“Oh, no – We’re going to be replaced!”





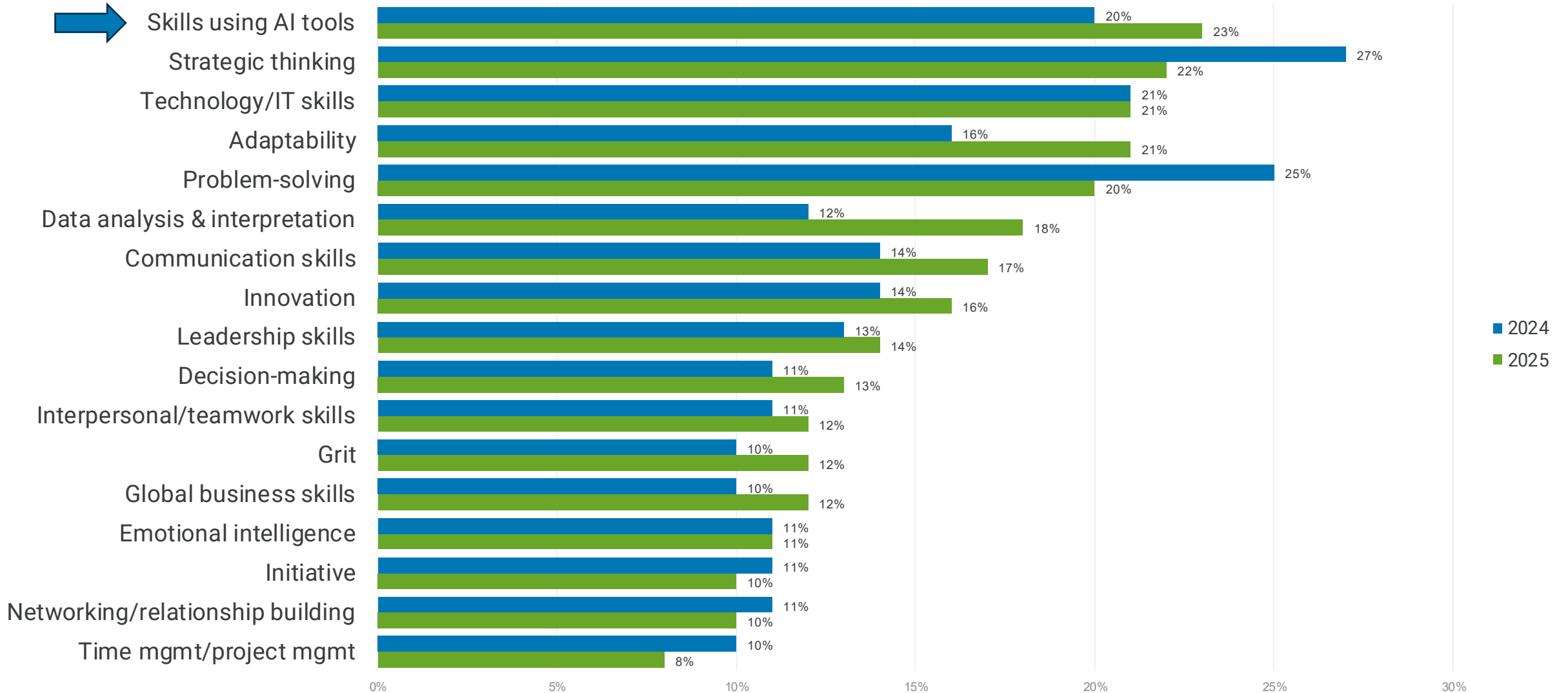
“Oh, no – We’re going to be replaced!

or...

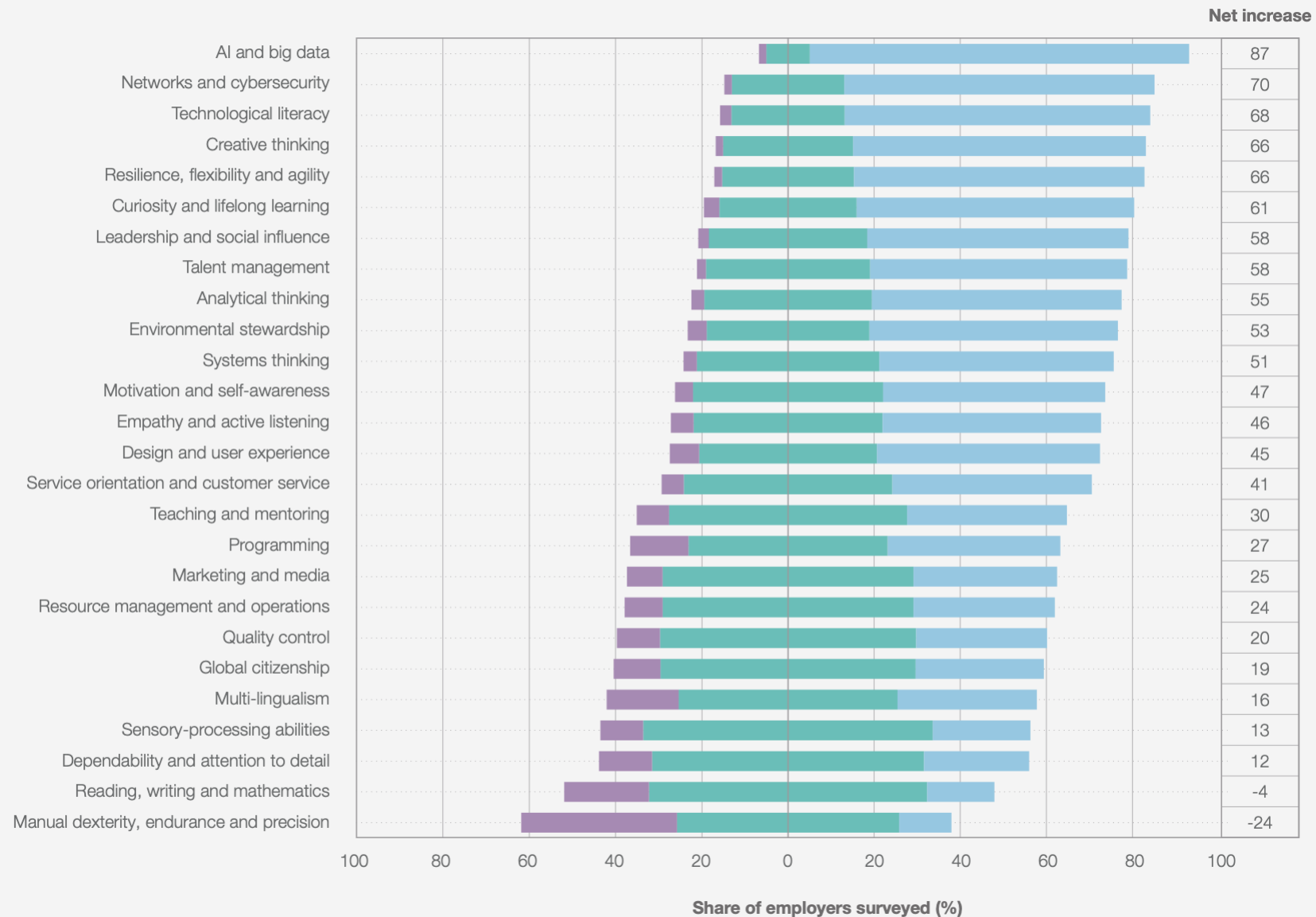
“Wow – I can accomplish the work of 2.5 people!”

Predicted Top 3 Most Important Skills in the Next 5 Years

Share of employers selecting skill in top 3 | GMAC Corporate Recruiters Survey, 2024 & 2025



Share of organizations surveyed which consider skills to be increasing or decreasing in importance, ordered by the net difference.



What About **Skill Atrophy?**



"It will create forgetfulness in the learners' souls, because they will not use their memories. They will become hearers of many things and will have learned nothing;

...they will appear to be omniscient and will generally know nothing; they will be tiresome company, having the show of wisdom without the reality."

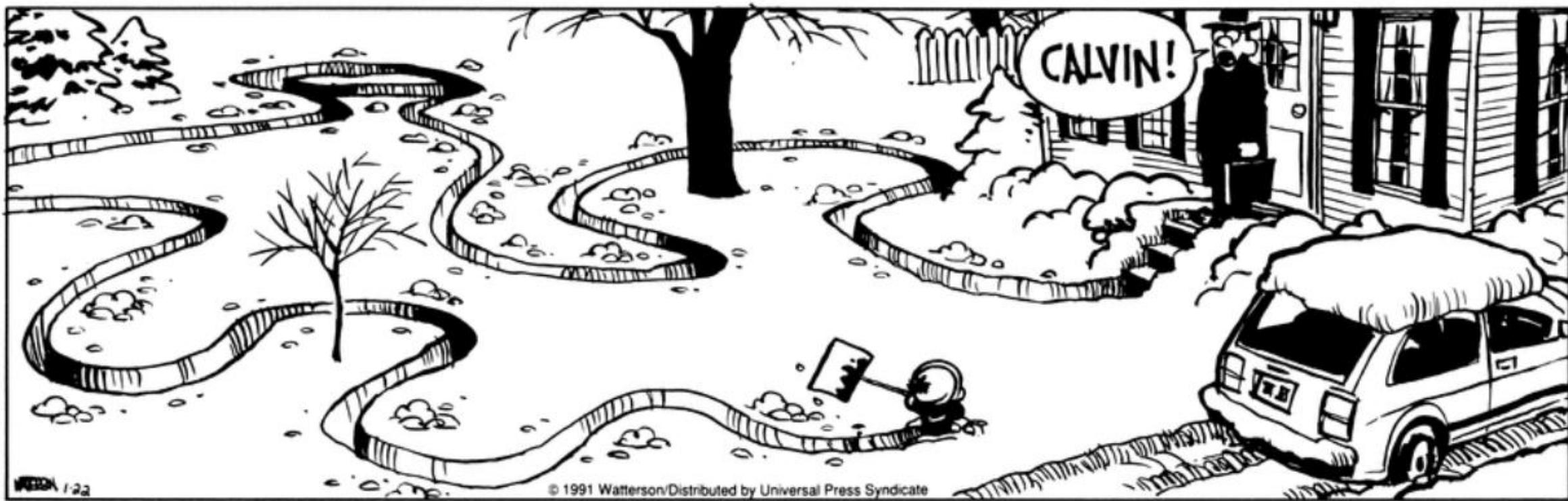
-Socrates

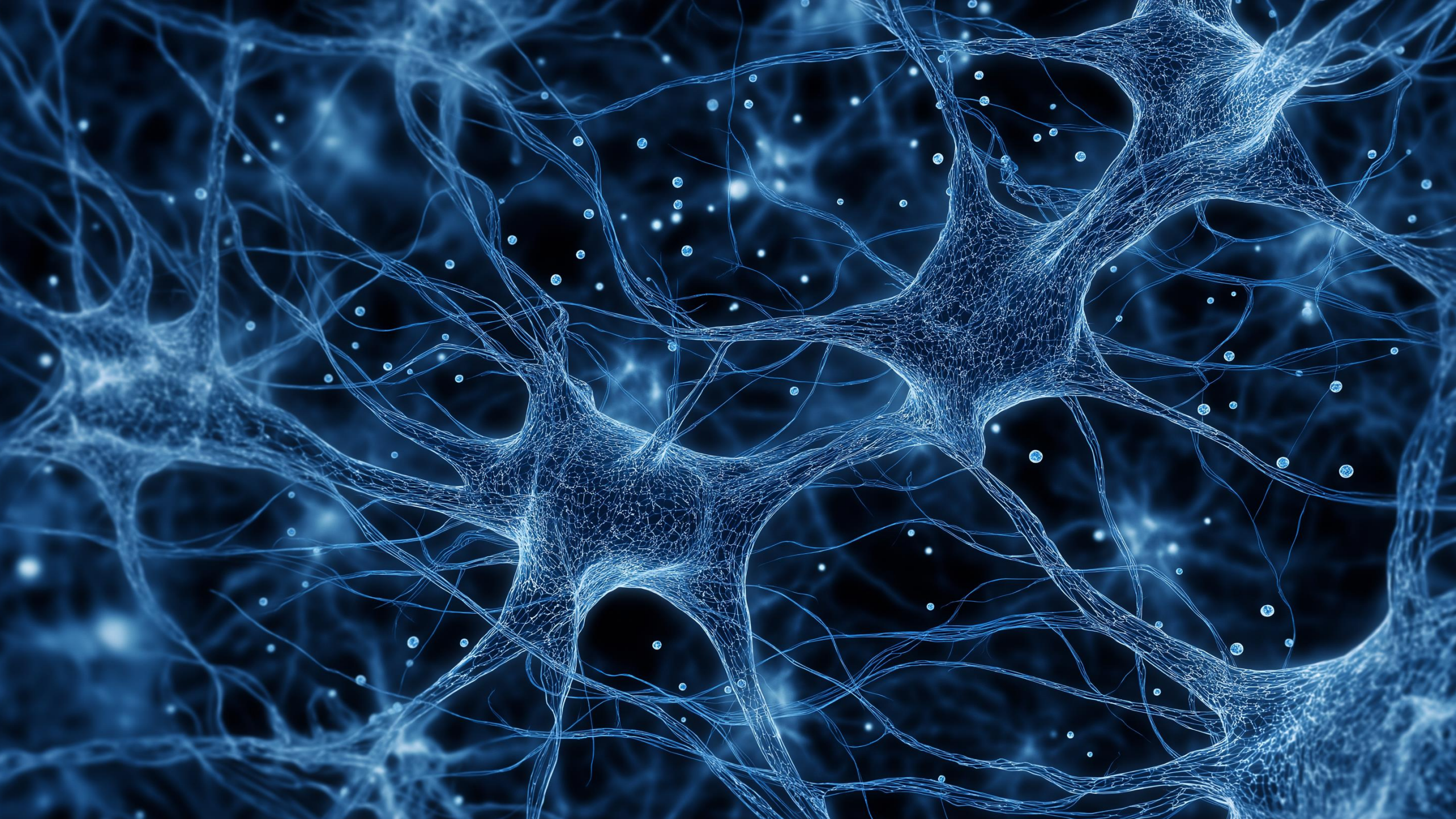


A Common Theme

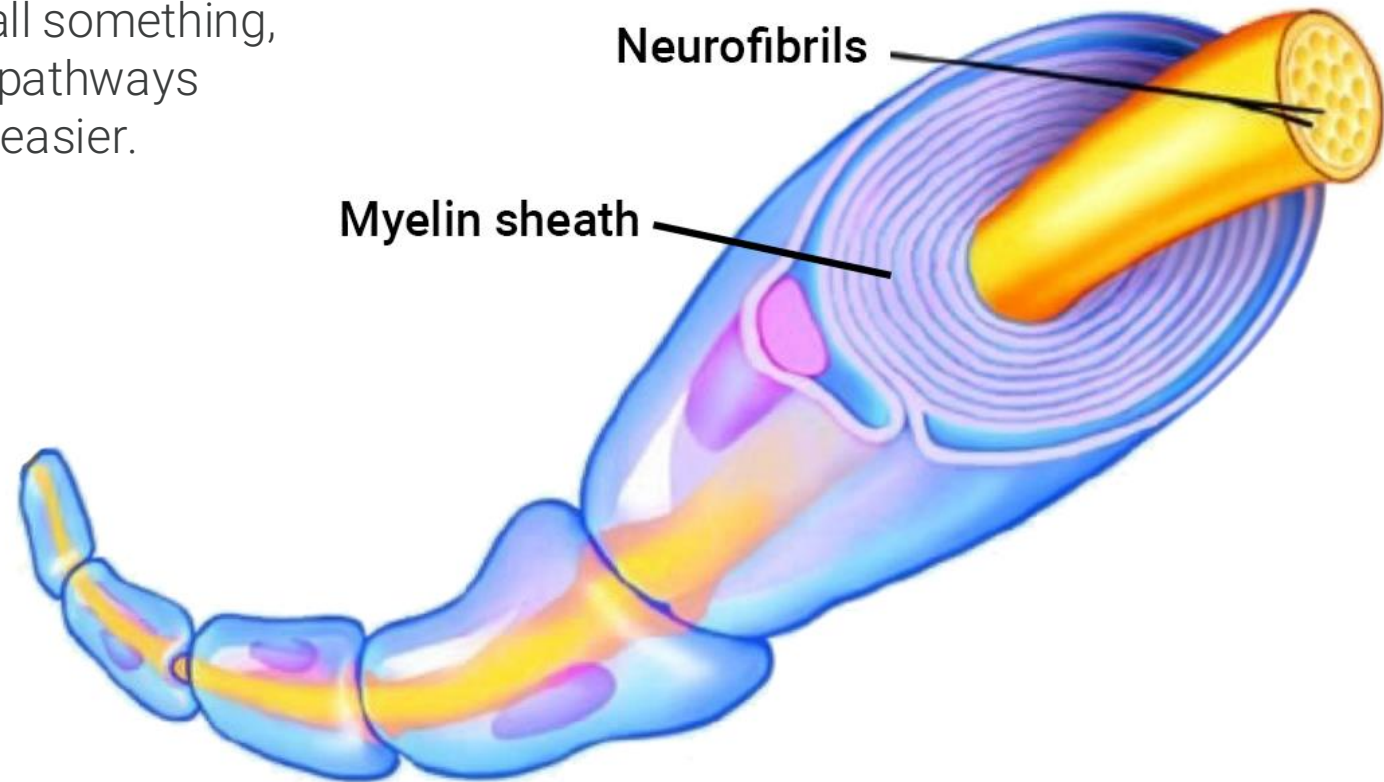
- Luddites - textile workers destroyed machinery
- Printing press - will spread heresy
- Telegraph will create unbearable information overload
- Telephone will end face-to-face communication
- Smartphones will destroy attention spans







Learning science shows that effortful retrieval strengthens memory traces. When you struggle to recall something, you're building the neural pathways that make future retrieval easier.



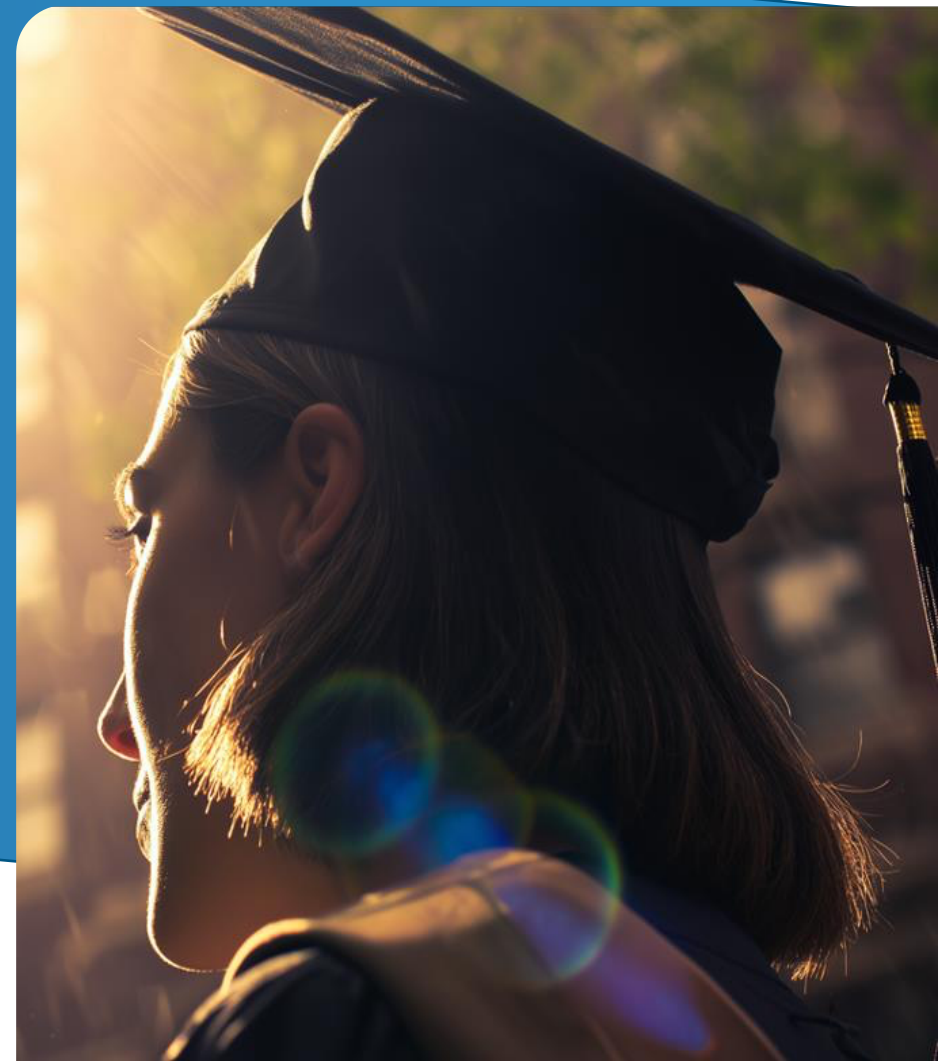
We learn who we are partly through what we find difficult, what we persist through, what we give up on, what we find boring, what energizes us.

If AI removes the friction from intellectual work, students may never discover their own tolerances, preferences, and capacities. The struggle is where character develops—not just skills.

 Gemini



AI FLUENCY TOOLKIT





**AI History &
Context**



**Ethics &
Responsible Usage**



**Practical Skills &
Tool Mastery**



**Critical Evaluation &
Assessment**



**Social Impact &
Communication**

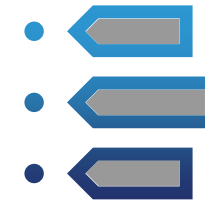
201 Level AI Fluency Skills



**ITERATIVE
PROMPTING**



**WORKFLOW
INTEGRATION**



**TASK
DECOMPOSITION**

AI FLUENCY TOOLKIT

ITERATIVE **PROMPTING**









The image depicts the cockpit of an aircraft, specifically a de Havilland plane. Here's a detailed explanation of the various gauges and controls visible in the photo:

Upper Panel

1. Directional Gyro / Compass:

- **Top Center:** Shows the aircraft's heading in degrees, allowing pilots to navigate along a specific course.

2. Artificial Horizon (Attitude Indicator):

- **Top Left:** Indicates the aircraft's orientation relative to the horizon, showing pitch and bank.

3. Altimeter:

- **Left of Center:** Displays altitude above sea level in feet.

4. Airspeed Indicator:

- **Top Right:** Measures the aircraft's speed through the air, typically in knots or miles per hour.

5. Vertical Speed Indicator (VSI):

- **Below the Altimeter:** Shows the rate of climb or descent in feet per minute.

6. Turn Coordinator:

- **Below the Attitude Indicator:** Helps maintain balanced turns, showing the rate of turn and slip/skid.

7. Fuel Quantity Gauge:



- **Right Side:** Displays the amount of fuel remaining in the tanks.



Message ChatGPT





QuantHub

Welcome, Josh

Type / for commands



Opus 4.5



Write

Learn

Code

Career chat

From Drive




```
=====
DHC-2 BEAVER COCKPIT PROCEDURAL TRAINER
=====
```

```
ENGINE STATE: OFF
OIL TEMP: 46 C
```

```
-----
GAUGES (Feedback)
```

```
MANIFOLD PRES |-----| 10 "Hg
TACHOMETER    |-----| 0 RPM
-----
```

```
-----
QUADRANT LEVERS (Your Inputs)
```

```
[T]HROTTLE |-----| 0 % Fwd
[P]ROP RPM |#####| 100 % Fwd
[M]IXTURE  |###-----| 10 % Rich
-----
```

```
CURRENT OBJECTIVE: Set Mixture FULL RICH (100%), Throttle CRACKED (10-20%). Then press [S].
```

```
CONTROLS:
```

```
Throttle: [T] increase / [t] decrease
Prop:      [P] increase / [p] decrease
Mixture:   [M] increase / [m] decrease
Actions:   [S] Try Starter | [Q] Quit Game
Action > █
```

TELEPORT TO:
Alaska - Denali

94 KTS

1500 FT
- 0 FPM

180° S

AIRBORNE THR: 60%

DHC-2 BEAVER
de Havilland Canada

W/S: Throttle | A/D: Roll | ↑/↓: Pitch | T: Training | ?: Help

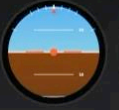
Flight Training

Welcome to the DHC-2 Beaver

You're flying one of the greatest bush planes ever built. The de Havilland DHC-2 Beaver has been the workhorse of backcountry aviation since 1947.

Use W/S for throttle, A/D or arrows for roll, ↑/↓ for pitch

BackNext

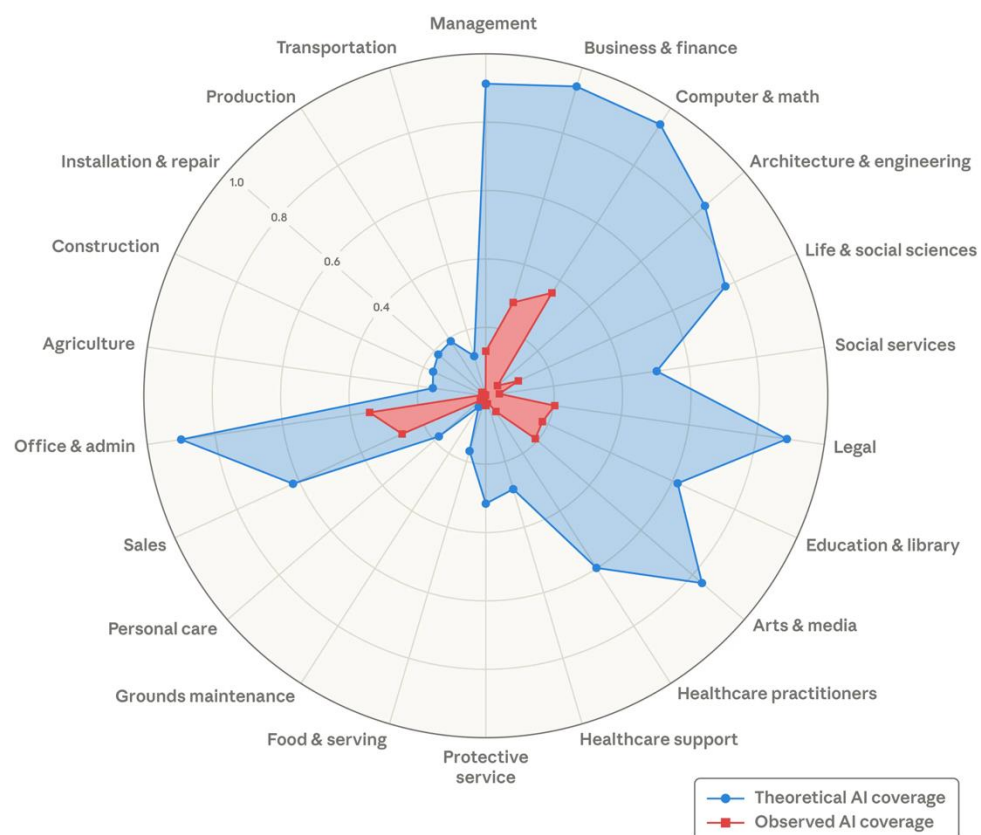


94 KTS
AIRSPEED
1500 FT
ALTITUDE
180°
HEADING

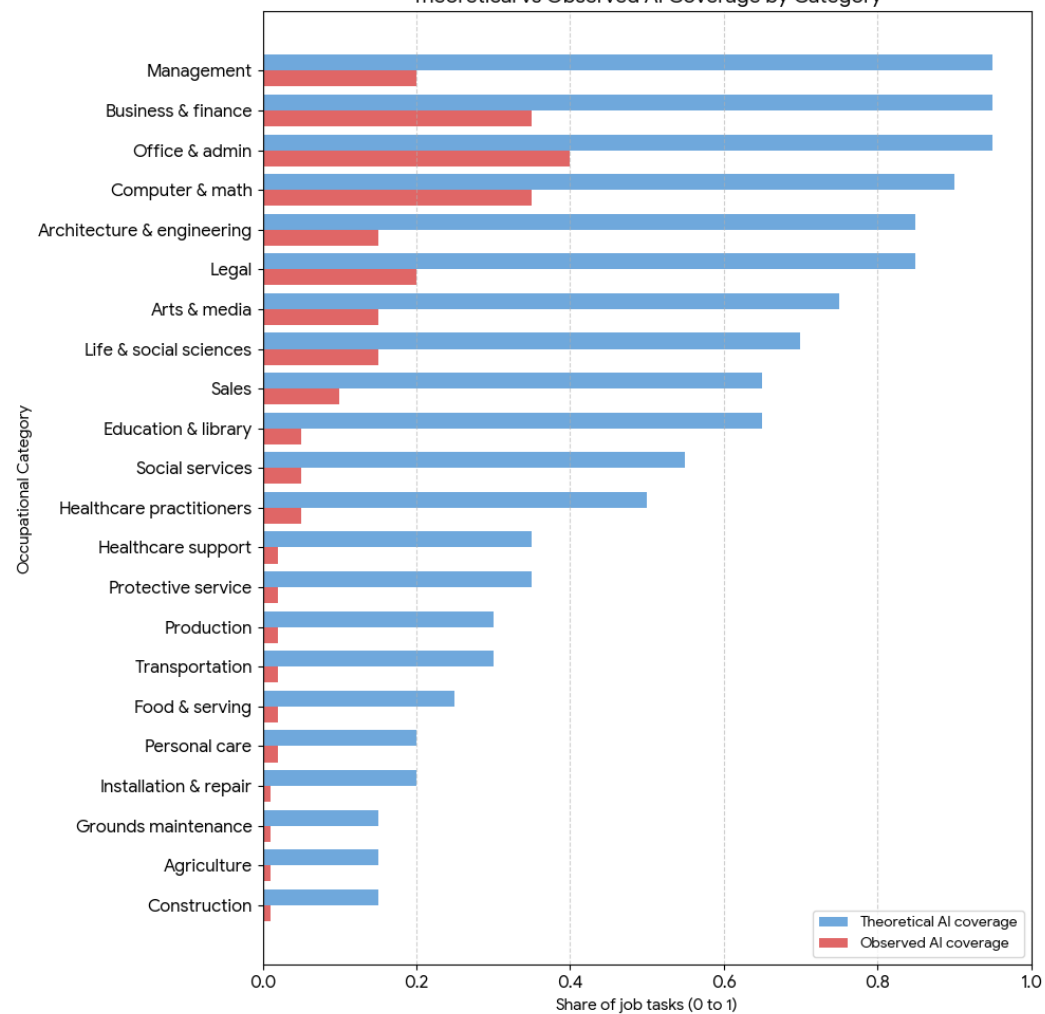
AI FLUENCY TOOLKIT

TASK DECOMPOSITION

Theoretical capability and observed usage by occupational category



Theoretical vs Observed AI Coverage by Category



**“Look how much
more I can do!”**



Application error: a client-side exception has occurred while loading claude.ai (see the browser console for more information)



You've reached the limit for Claude messages at this time.
Please wait before trying again.



You're almost out of usage - your limits will reset at 6:00 PM

Subscribe to Max



Reply to Claude...



Research



Your message will exceed the length limit for this chat. Try
attaching fewer or smaller files or starting a new
conversation.



404 Not Found

In the heat of day,
The path dissolves to nothing—
An empty mirage.



Something went wrong. Please try again.

Retry



A network error occurred. Please check your connection and try again. If this issue persists
please contact us through our help center at help.openai.com.



Retry



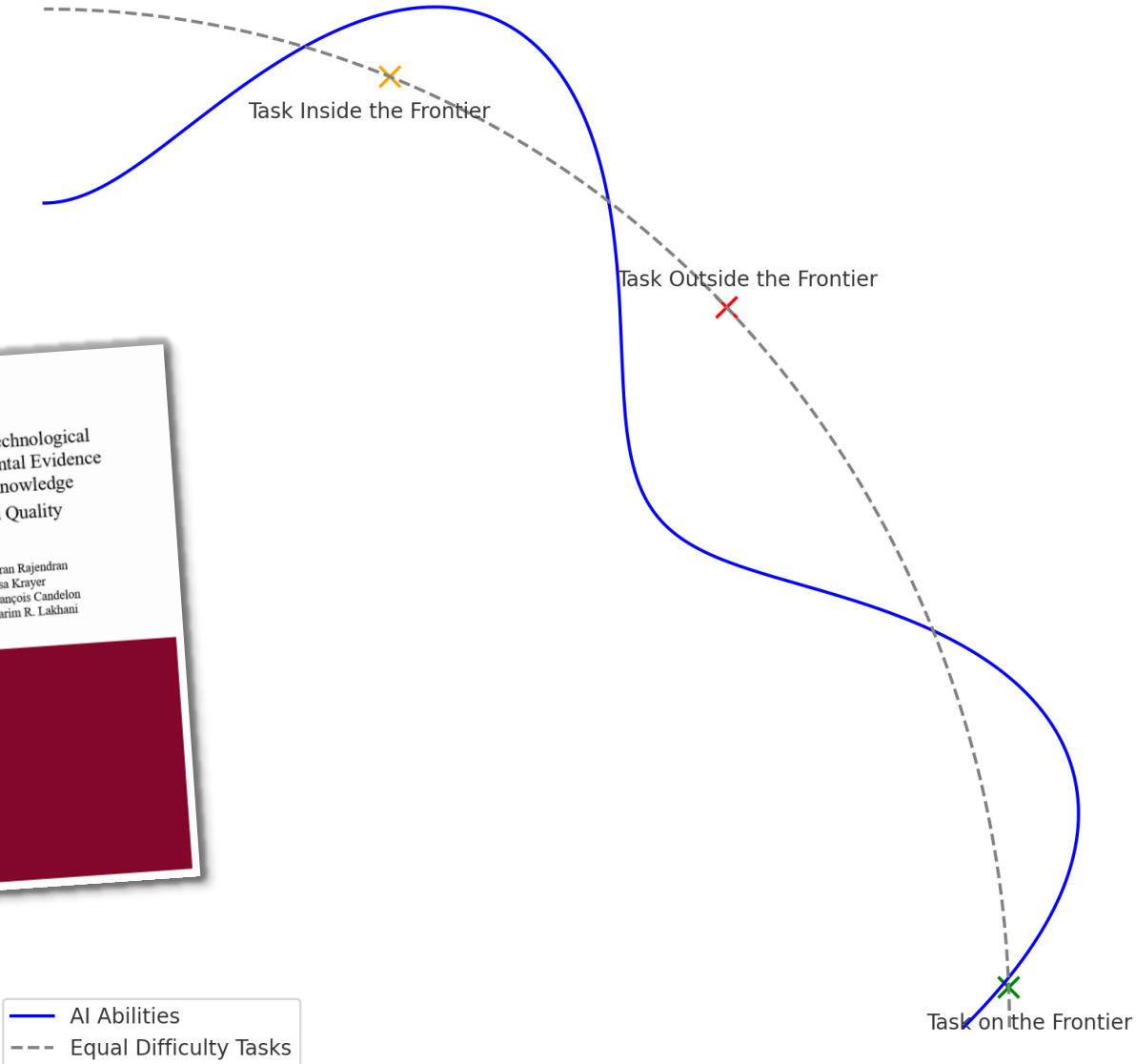
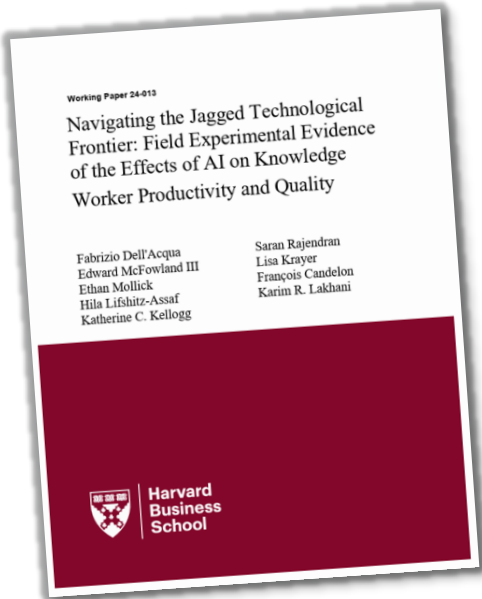
This functionality is undergoing temporary maintenance



The network connection was lost.

Retry

"THE JAGGED FRONTIER"

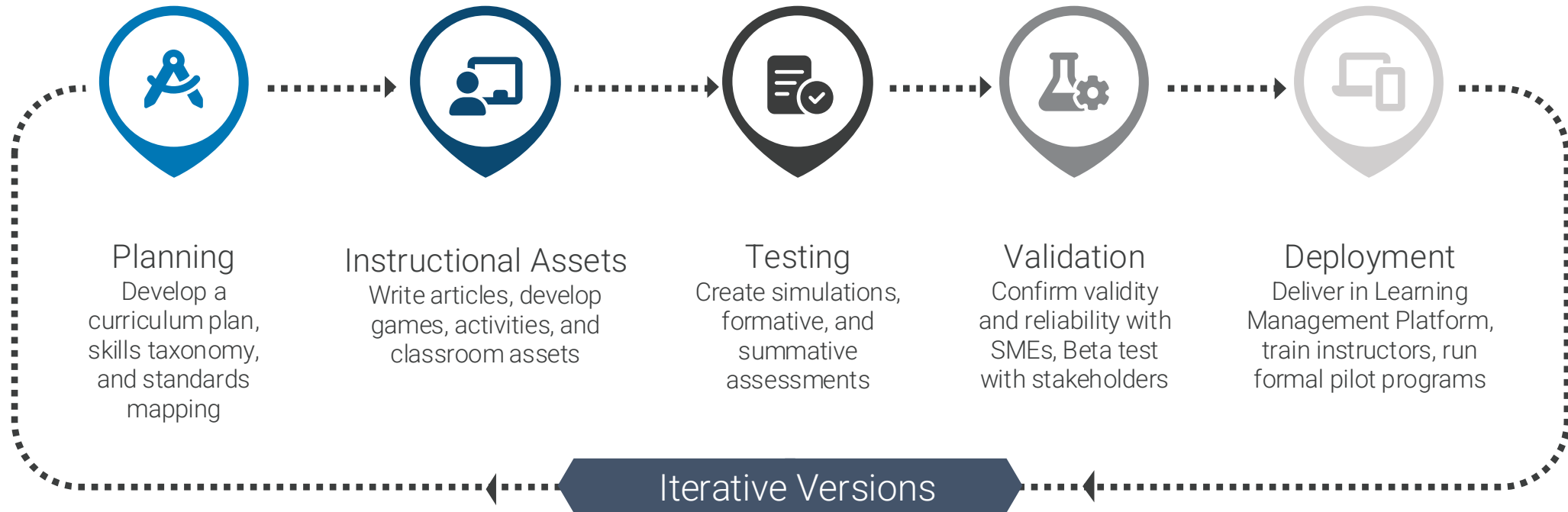




AI FLUENCY TOOLKIT

CURRICULUM AT THE **SPEED OF AI**

CURRICULUM DEVELOPMENT

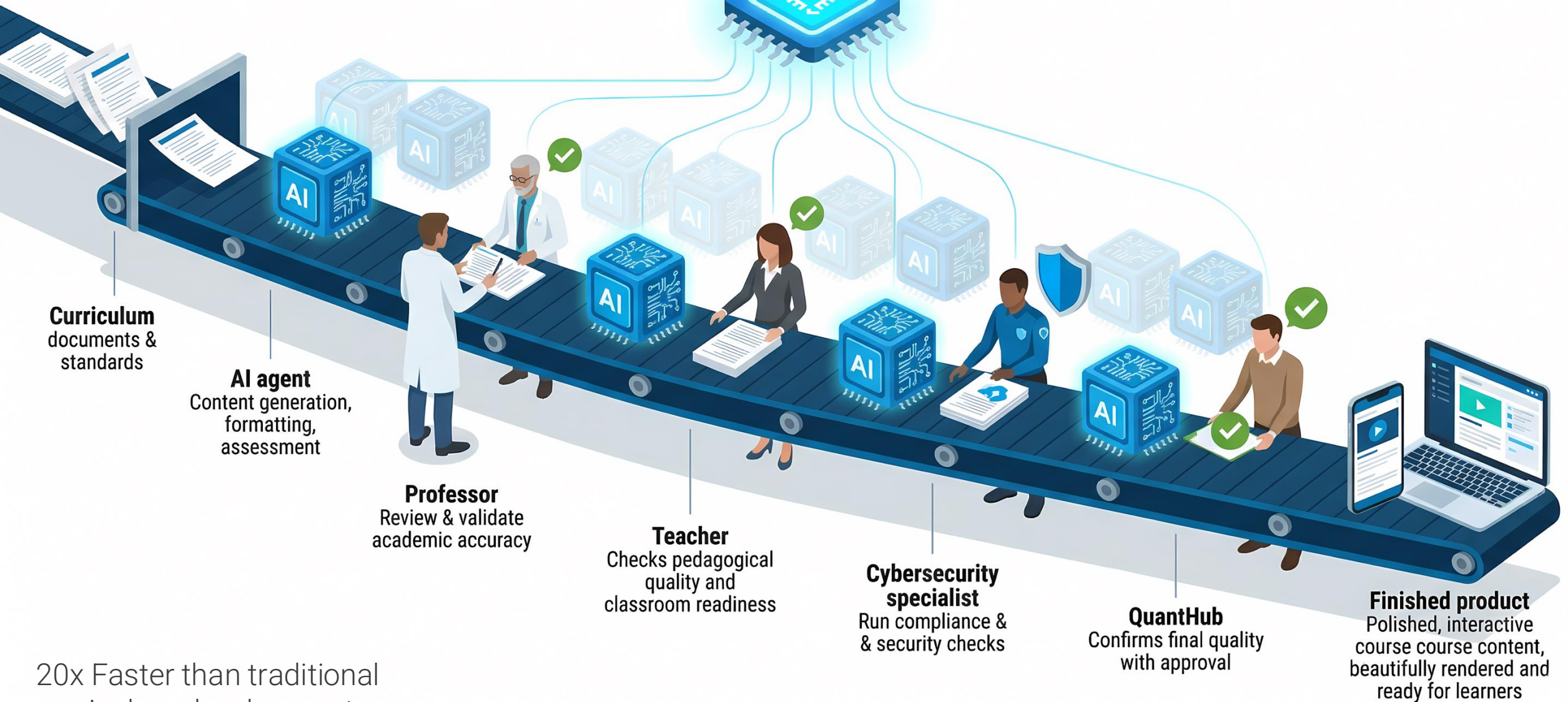


Every 3-5 Years → Every 3-5 Months

~~45-750 hours per study hour~~
10-20 hours per study hour

A FEW OF OUR AGENTS





20x Faster than traditional curriculum development

← Back

Trial - AI for Marketing

AI Foundations

7 Learning Activities

AI Foundations

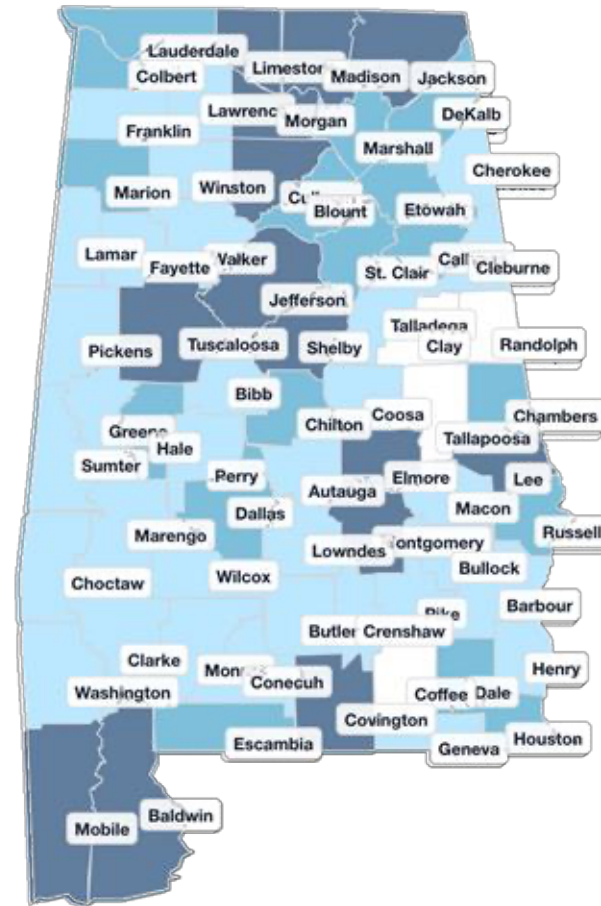
Equip learners with essential AI knowledge and critical thinking frameworks for modern marketing practice. This course directly aligns to AACSB mandates for emerging technology integration—addressing the gap where 98% of marketers use AI but only 2% see measurable results due to lack of critical thinking skills, not tool access.



Achievement Available



TEACHING DIGITAL AGILITY ACROSS ALABAMA



Legend (25-26)

☐ 0 Active Schools
 ☐ 1-3 Active Schools
 ☐ 4-6 Active Schools
 ☐ 7+ Active Schools

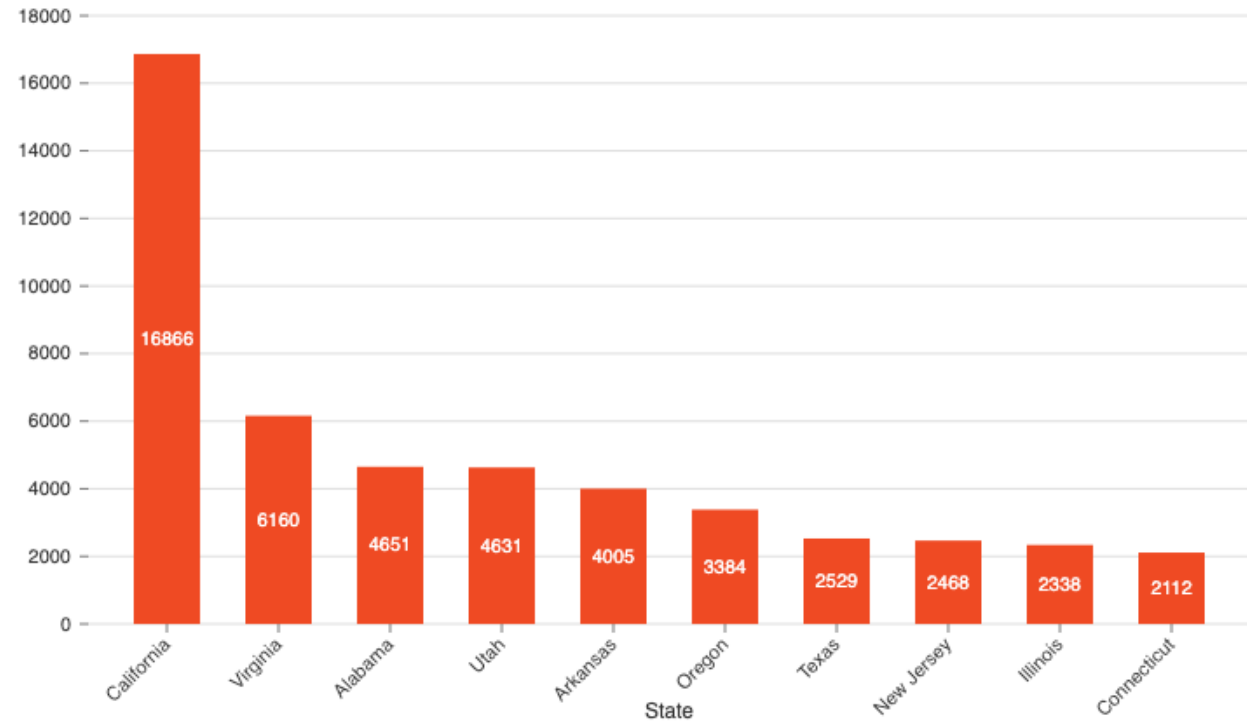
State of The Field 2025 Data Science and Data Literacy Education in US K-12

Sean Sukol

Foreword by

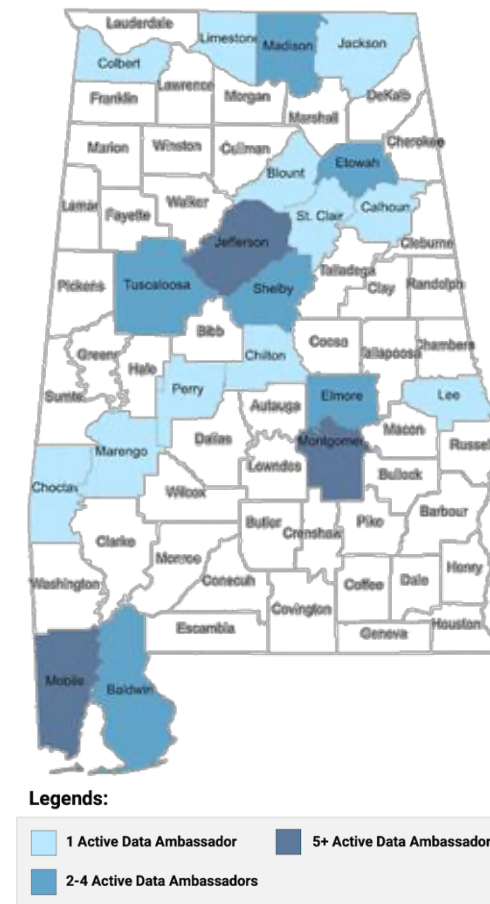
Dr. Ken Ono
STEM Advisor to the Provost
Fellow, Shannon Center for Advanced Studies
Marvin Rosenblum Professor of Mathematics
Professor of Data Science by Courtesy
Professor of Electrical and Computer Engineering by Courtesy
Professor Affiliate of Statistics
University of Virginia

Student Enrollment by State





ACTIVE DATA AMBASSADORS



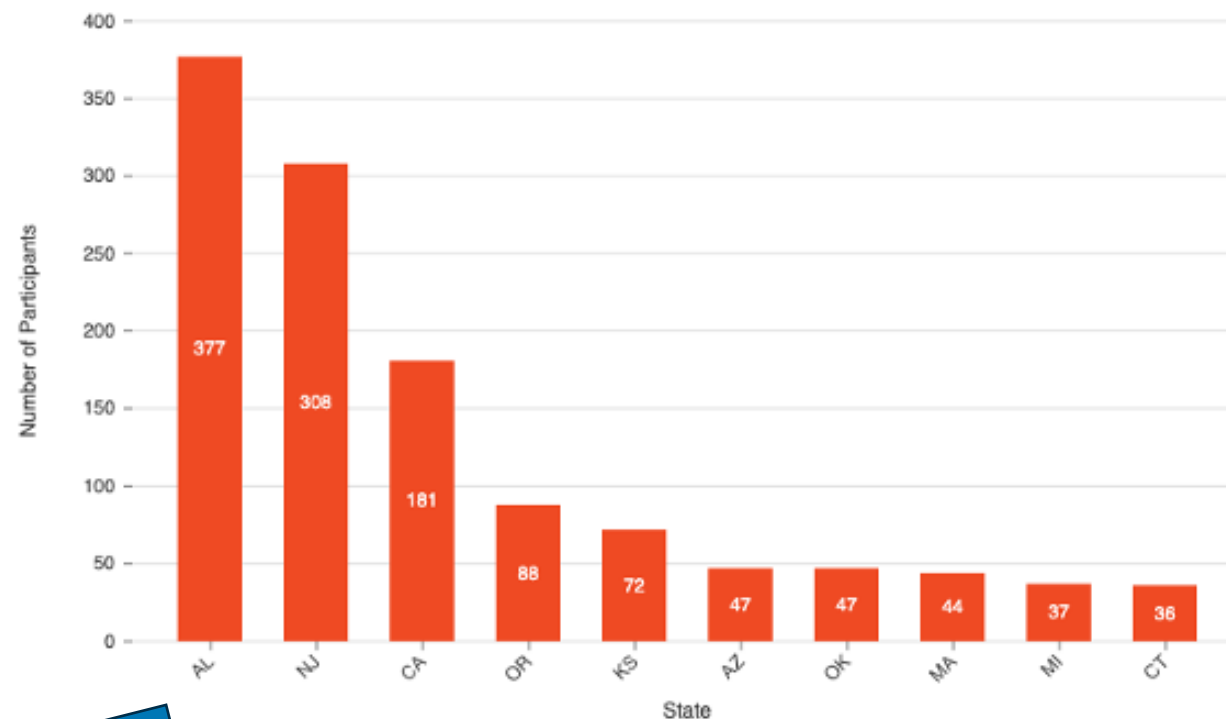
State of The Field 2025 Data Science and Data Literacy Education in US K-12

Sean Sukol

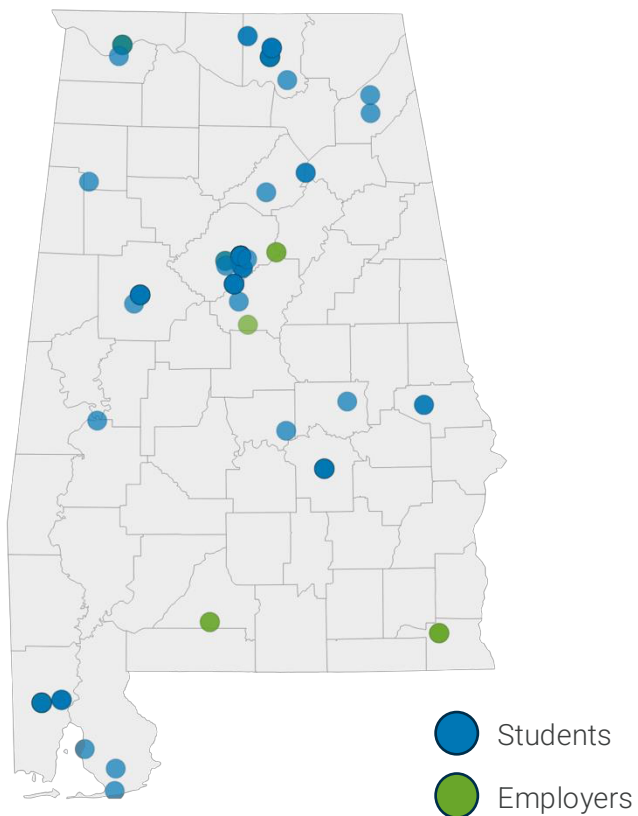
Foreword by

Dr. Ken Ono
STEM Advisor to the Provost
Fellow, Shannon Center for Advanced Studies
Marvin Rosenblum Professor of Mathematics
Professor of Data Science by Courtesy
Professor of Electrical and Computer Engineering by Courtesy
Professor Affiliate of Statistics
University of Virginia

Teacher PD Participation by Home State



Students Have Come From 16 Counties Across The State



ALABAMA DATA SCHOLARS

70 Internships filled across Alabama and counting



MADE IN ALABAMA



Team members in Birmingham, Huntsville, Tuscaloosa, and Wetumpka



Get in touch!

- Download session slides
- Learn about our educational products
- Connect with our internship program

