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ELEVATING **POSSIBILITY:** PREPARING LEARNERS FOR ALABAMA'S WORKFORCE

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CEO, QuantHub

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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 Newsweek TIME

THE HECHINGER REPORT UB University Business The74

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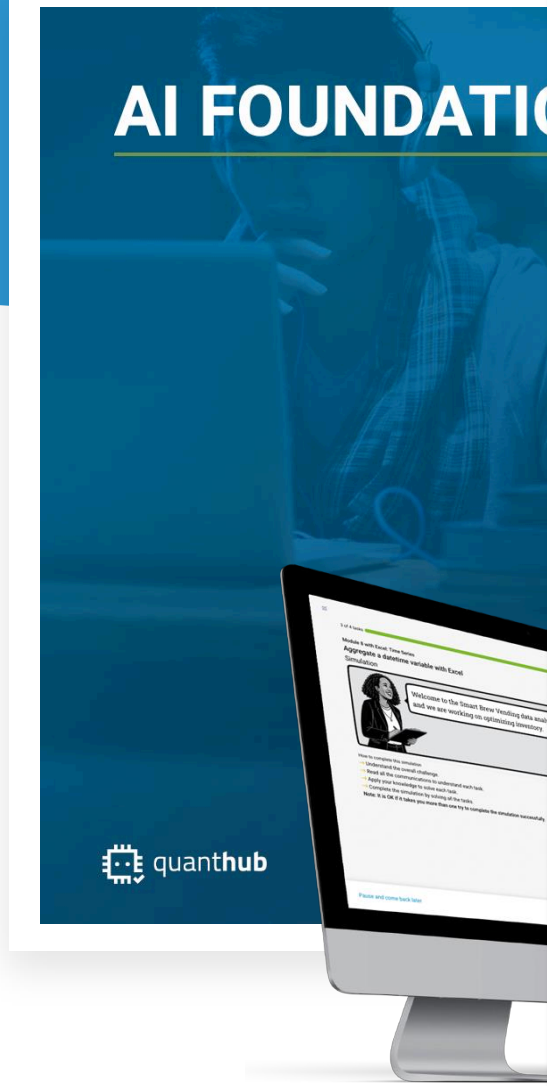

AI Foundations 0/16	Applying Excel Workspace Tools 0/4	Chapter 10: A Cluster Analysis Example 0/5	Chapter 1: Conducting a survey and summarizin... 0/5	Chapter 2: Applying probability 0/5
Chapter 3: Mean as Equal/Fair Share and... 0/5	Chapter 4: Inference about Association 0/5	Chapter 5: Measuring the strength of... 0/5	Chapter 6: Comparing a quantitative variable... 0/5	Chapter 7: Linear Regression 0/5
Chapter 8: Predicting a Categorical Variable 0/5	Chapter 9: Time series 0/5	Data Analysis 0/6	Data Literacy 0/5	Data Security Foundations 0/6
Data Storytelling 0/5	Data Storytelling 0/5	Data Visual Literacy 0/4	Data Wrangling 0/5	Exploratory Data Analysis 0/10
Exploring Data Tools 0/4	Framing a Data Problem 0/4	Introduction to AI 0/6	Introduction to AI 0/6	Introduction to Data Literacy 0/3
Inventory Optimization 0/3	Machine Learning Data Tools 0/6	Performance Analysis 0/4	Statistical Problem Solving 0/6	Visual Data Literacy 0/4

TY

e subjects

king, advanced GenAI

Google Classroom schoology canvas Blackboard brightspace by D2L

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Trial - AI for Marketing | TFBK 300 | 110

59 (1st) | Learn

- Learn
- Path
- History
- Accomplishments
- Get help

← Back

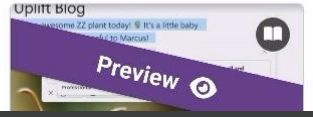
Trial - AI for Marketing

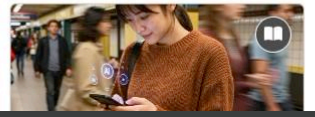
AI Foundations

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





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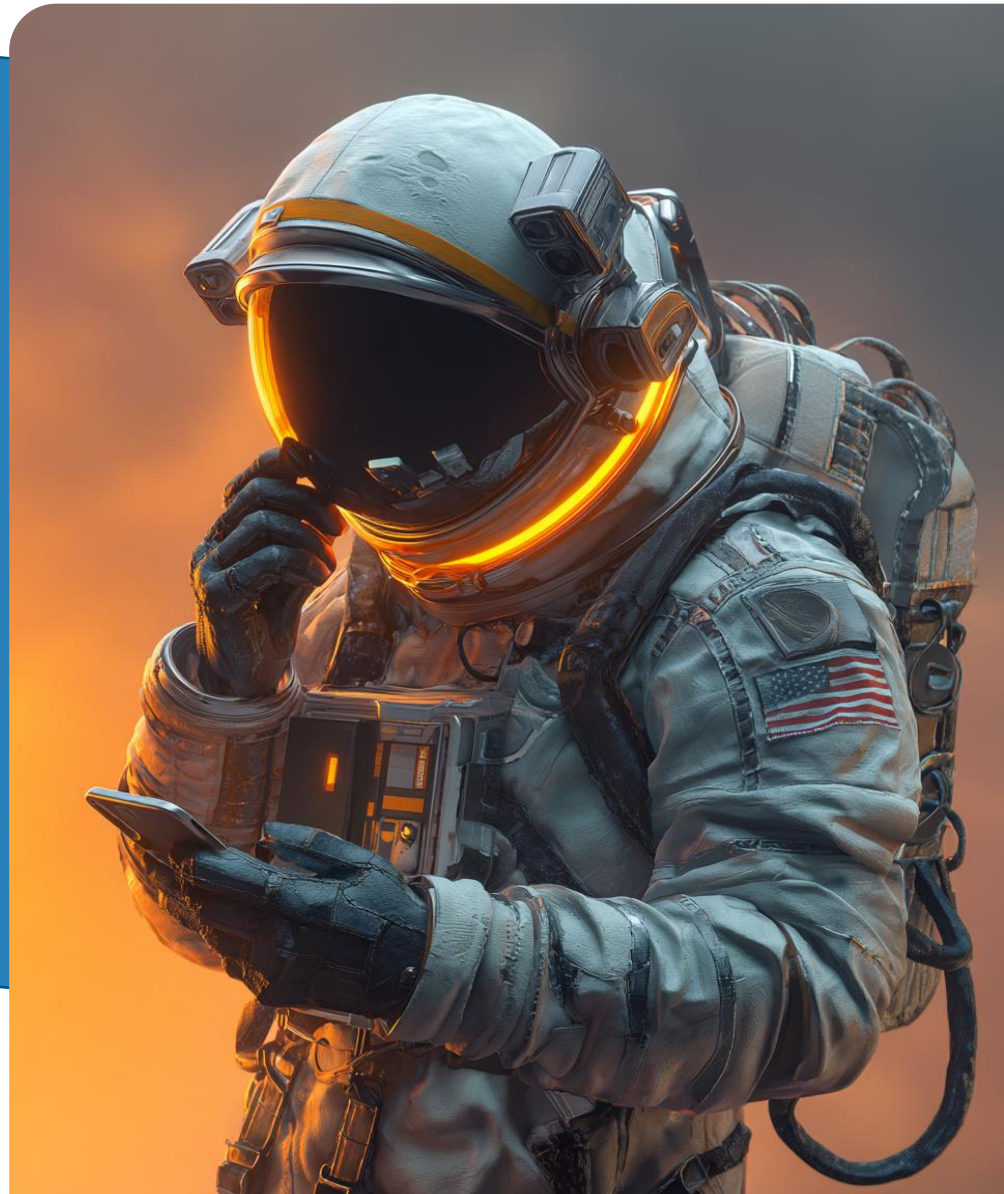
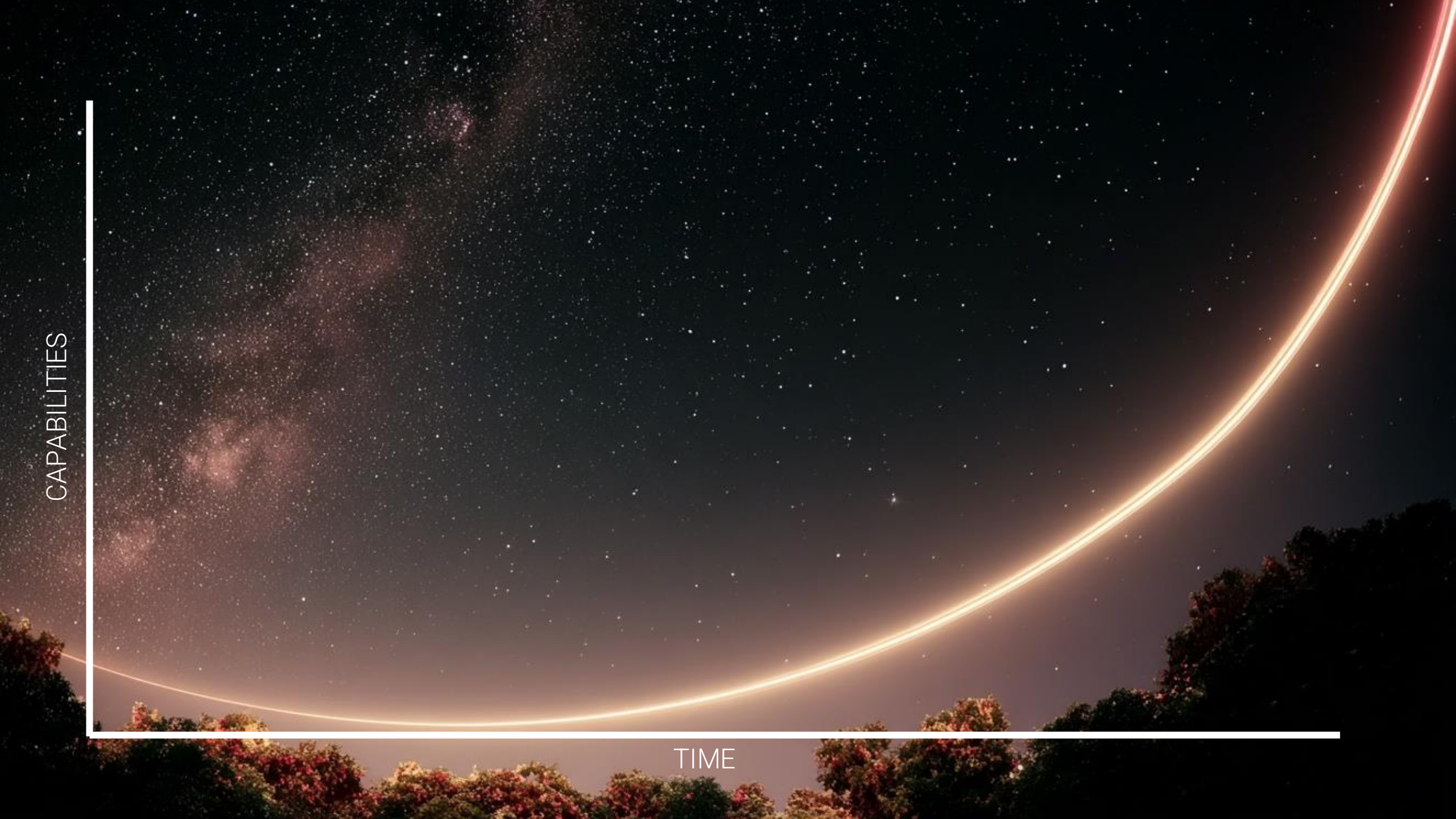
HOW DID WE **GET HERE?**

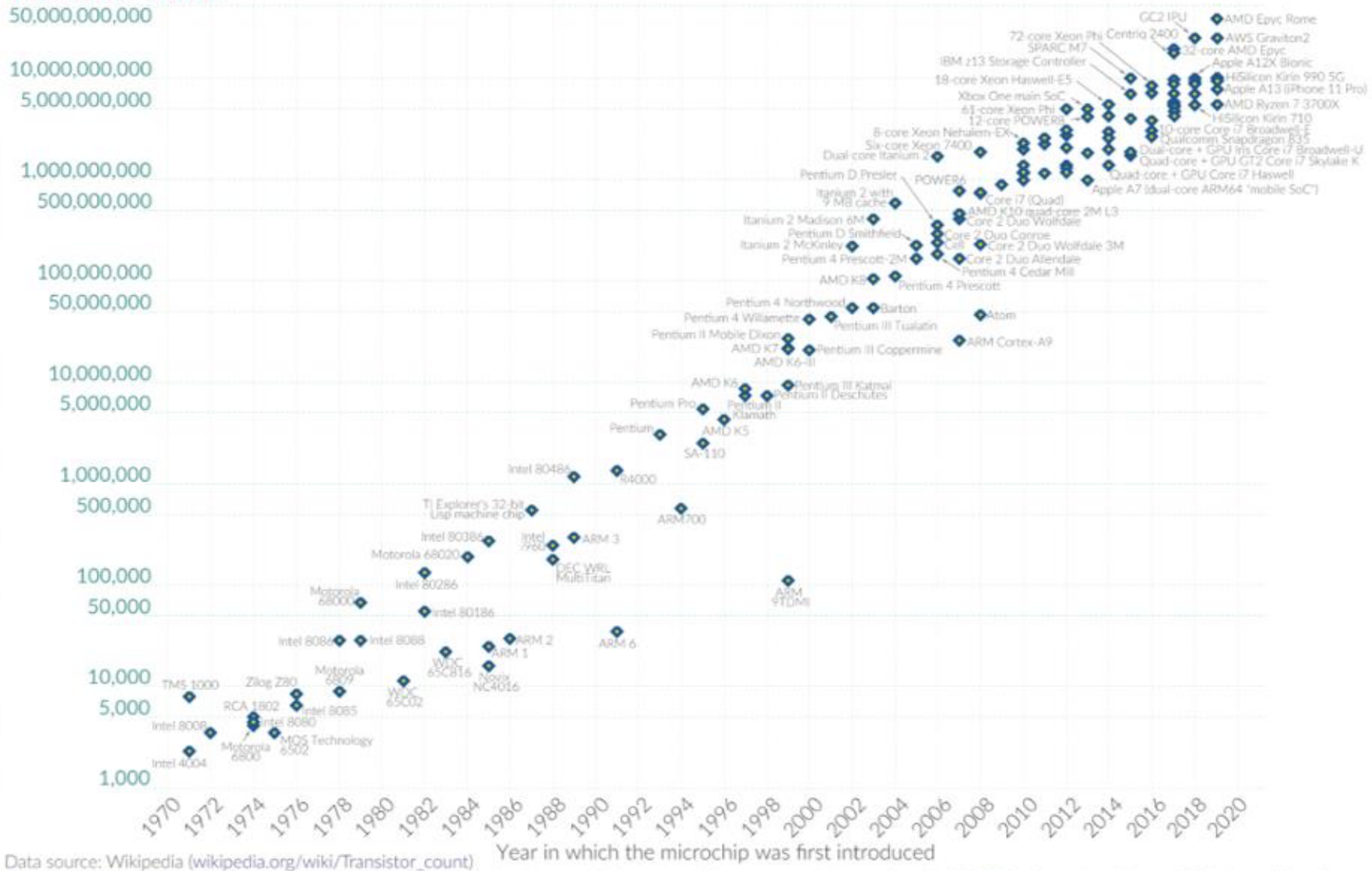



CAPABILITIES
TIME

Moore's Law: The number of transistors on microchips doubles every two years

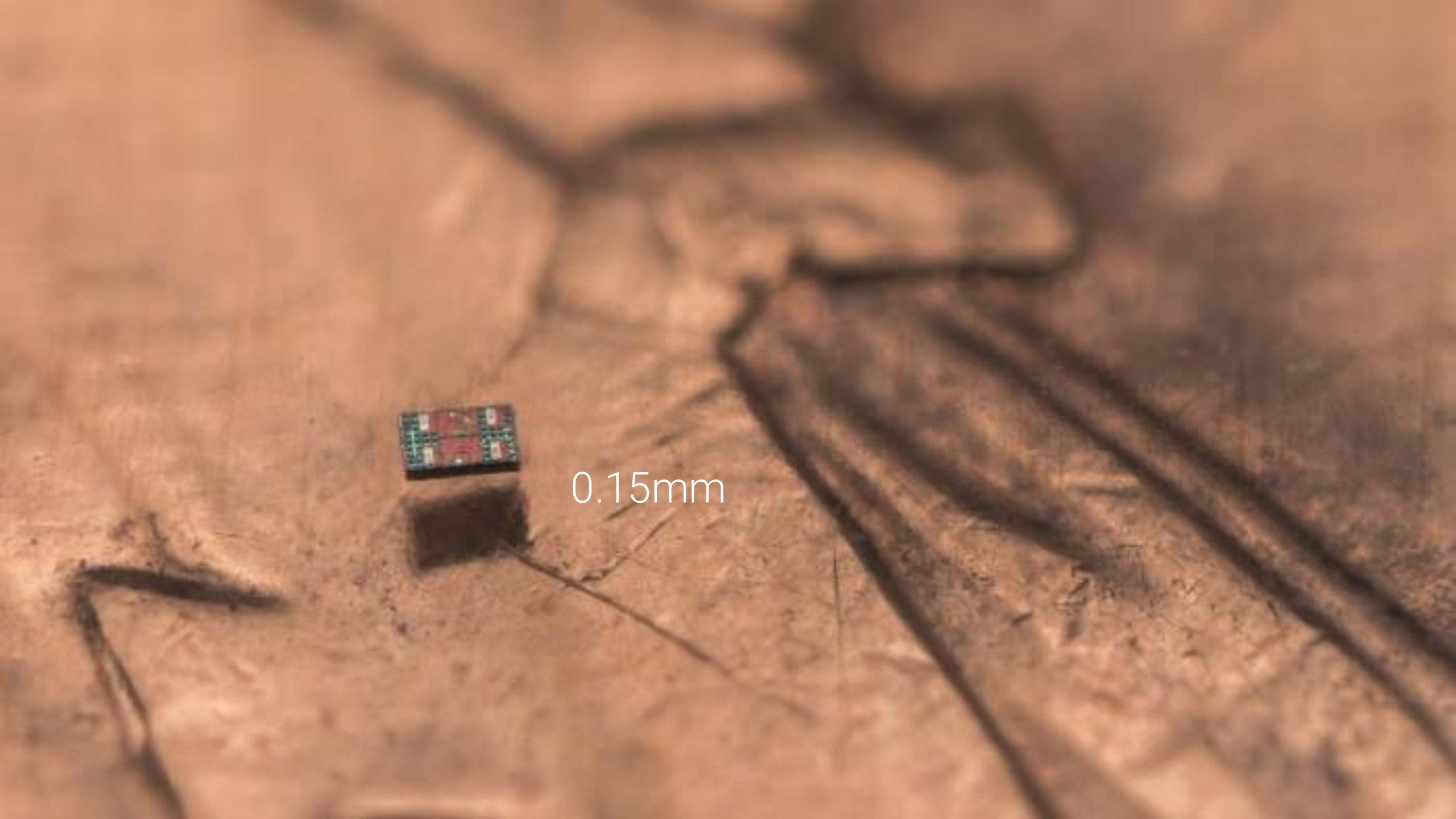
Our World in Data

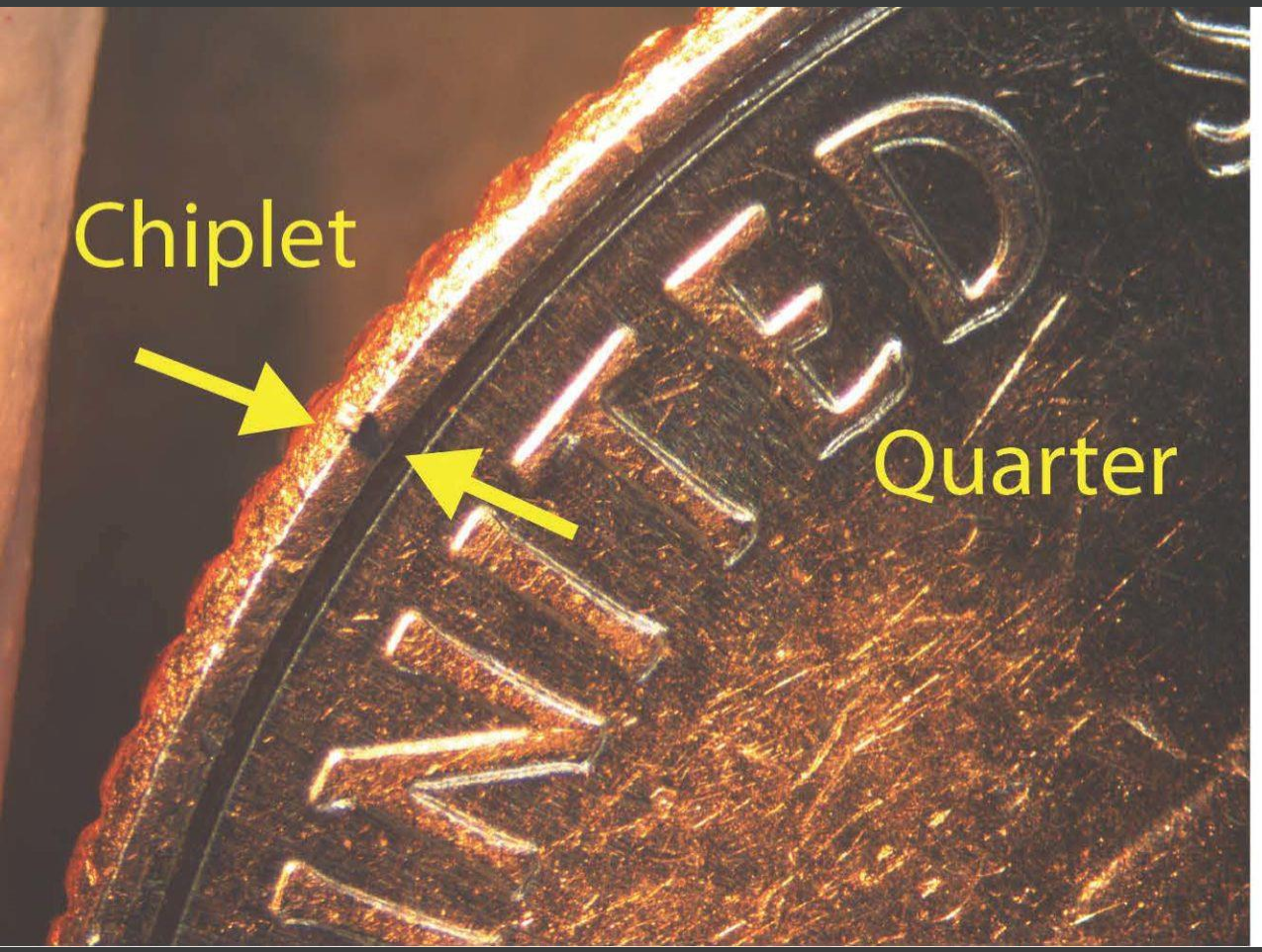
Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important for other aspects of technological progress in computing – such as processing speed or the price of computers.

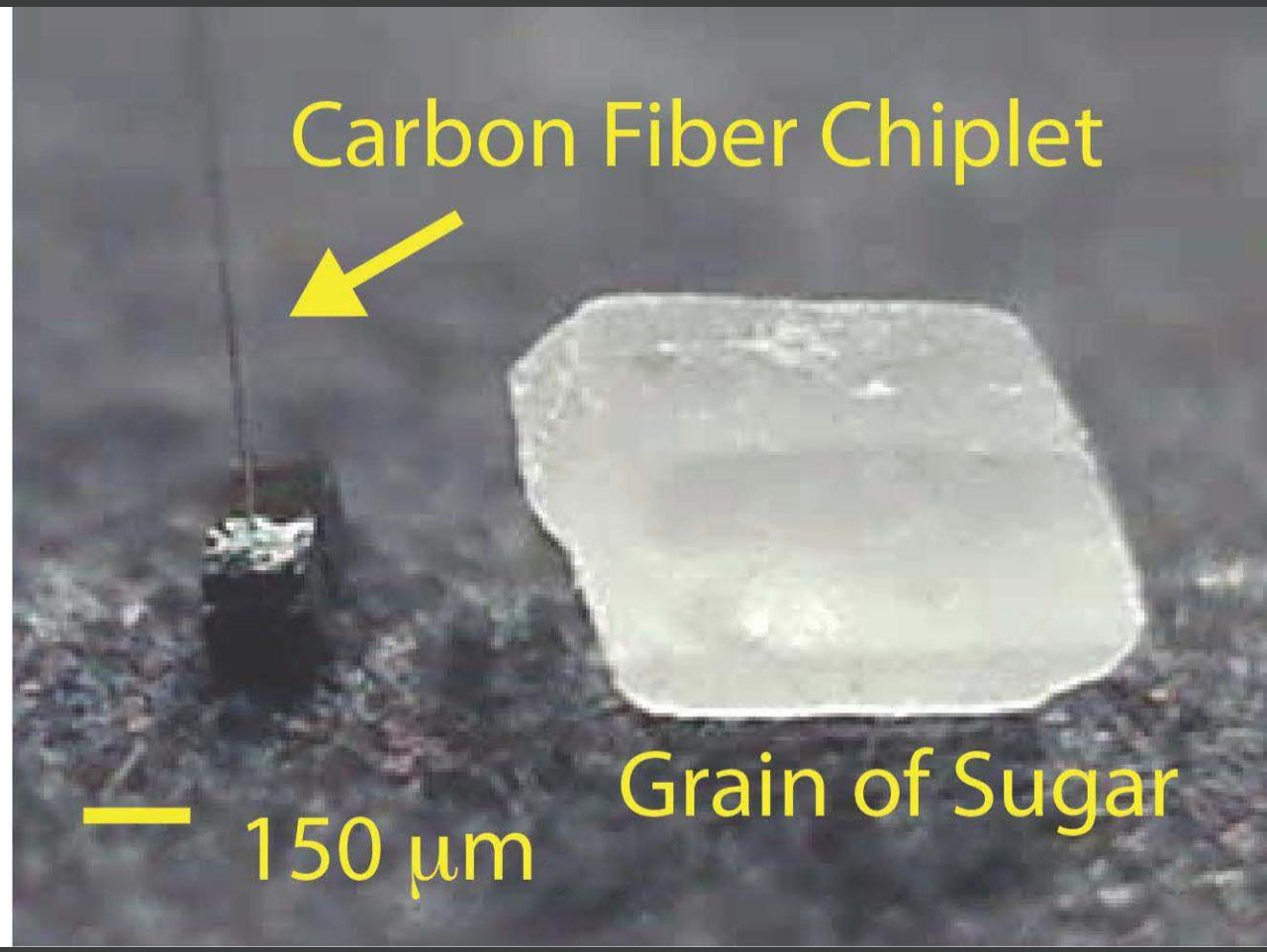


Data source: Wikipedia (wikipedia.org/wiki/Transistor_count)

OurWorldinData.org – Research and data to make progress against the world's largest problems.


0.15mm

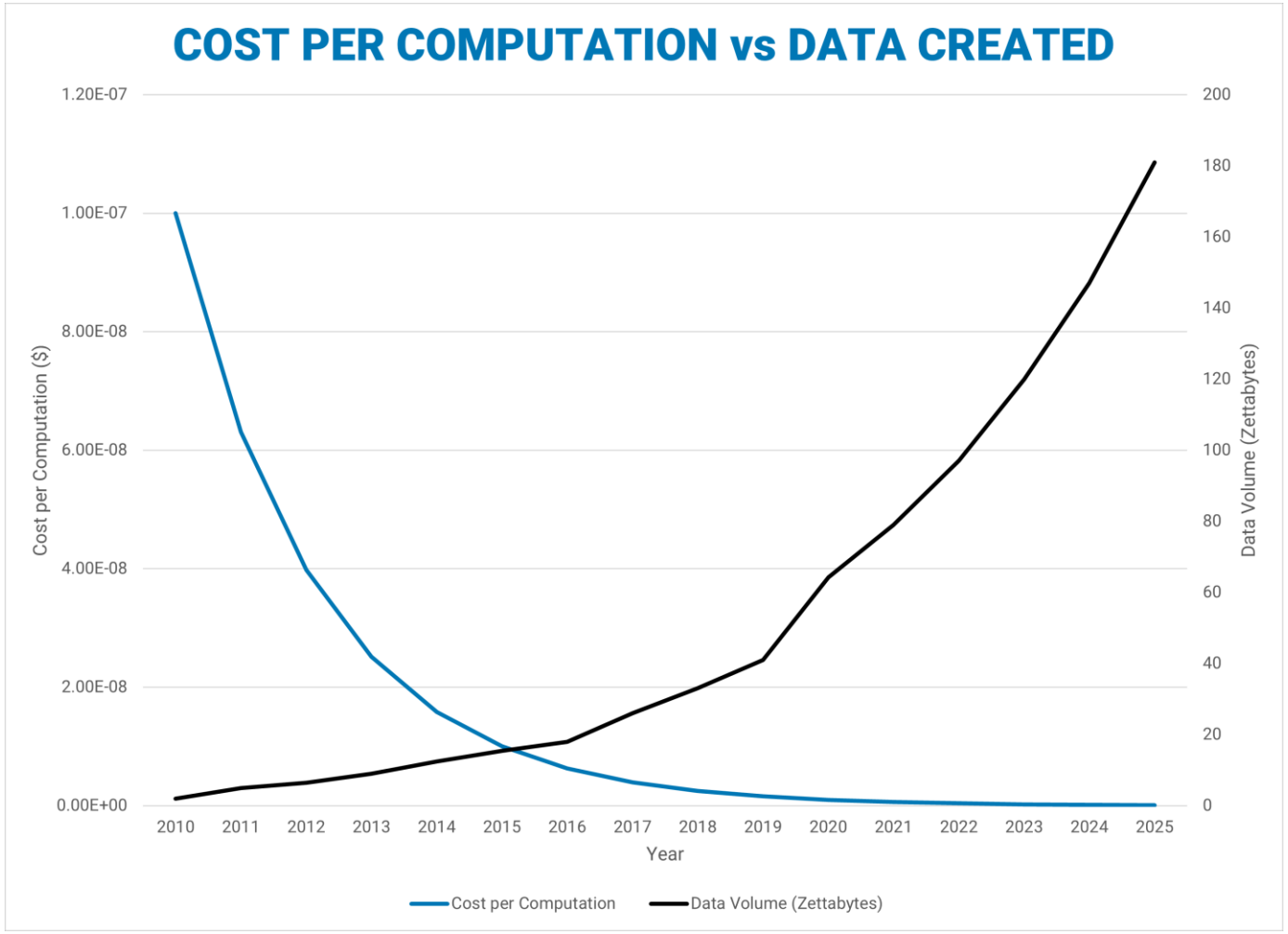

Chiplet
Quarter


Carbon Fiber Chiplet
Grain of Sugar
150 μm


SMART

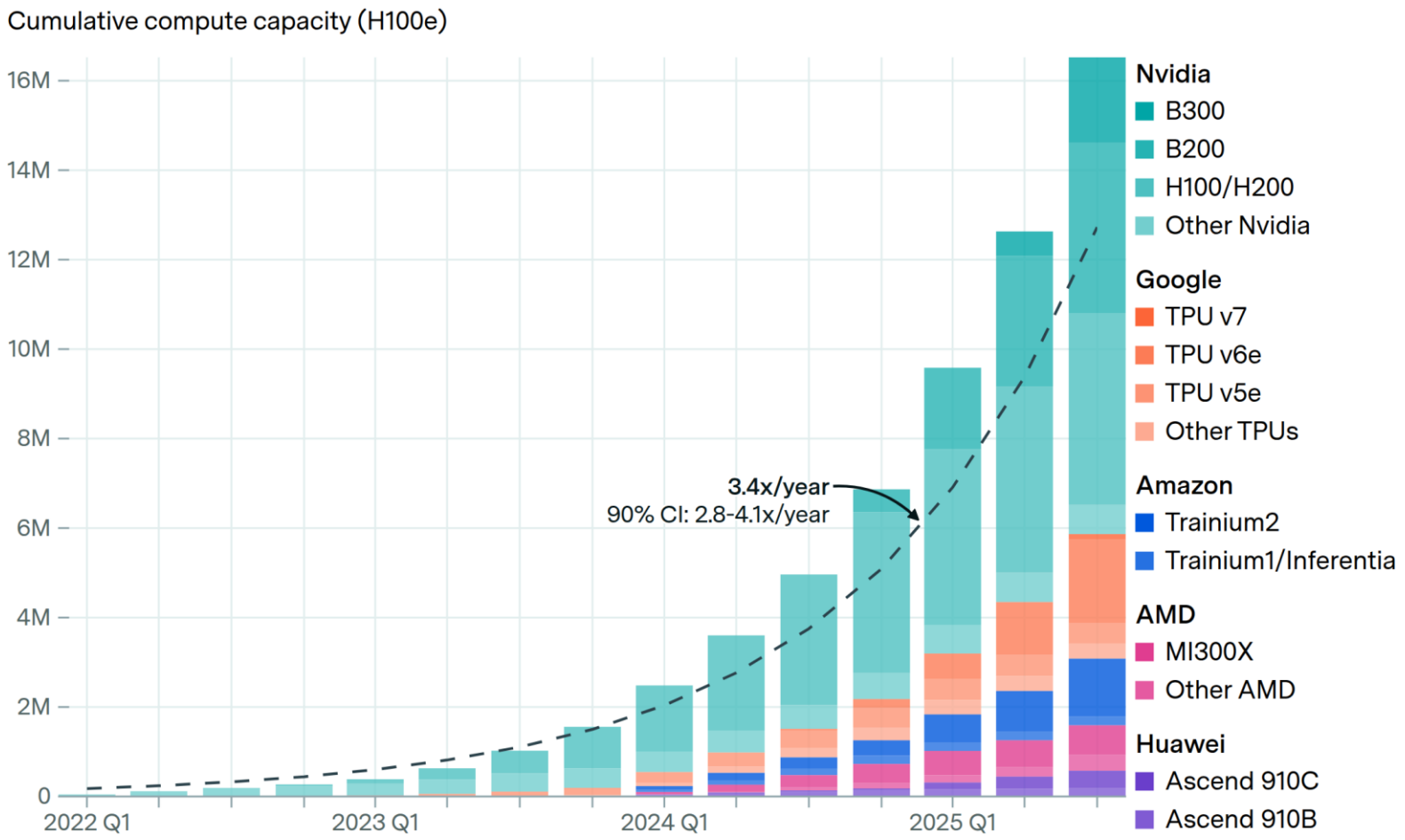

ring


LEGO
STAR WARS
SMART PLAY
8+
75421
473
pcs/pzs



Source: IDC, Ray Kurzweil

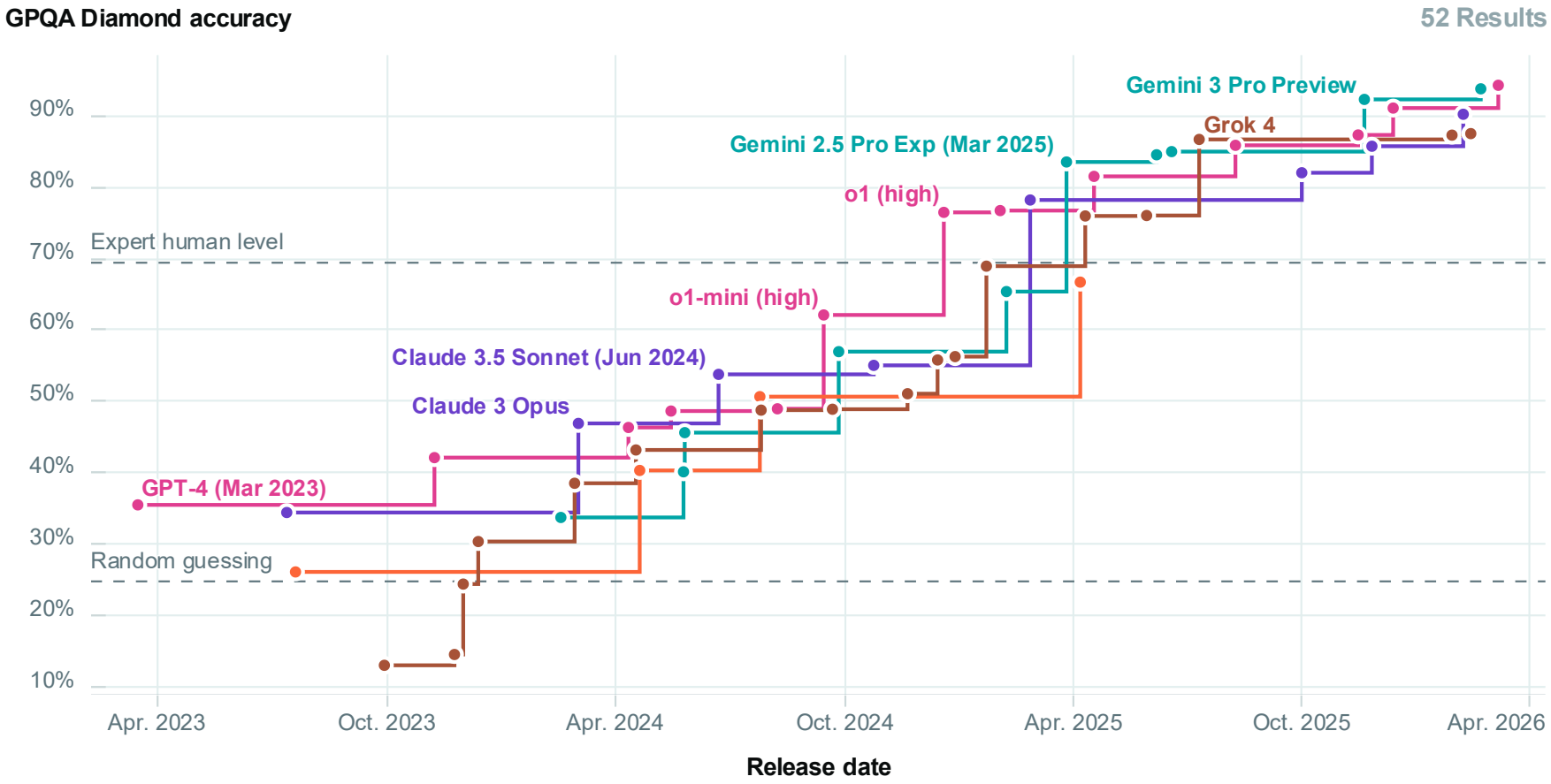
Global AI computing capacity is doubling every 7 months



EPOCH AI | CC-BY

epoch.ai

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



Source: Epoch.ai


Chips² x Software² x Robotics²

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

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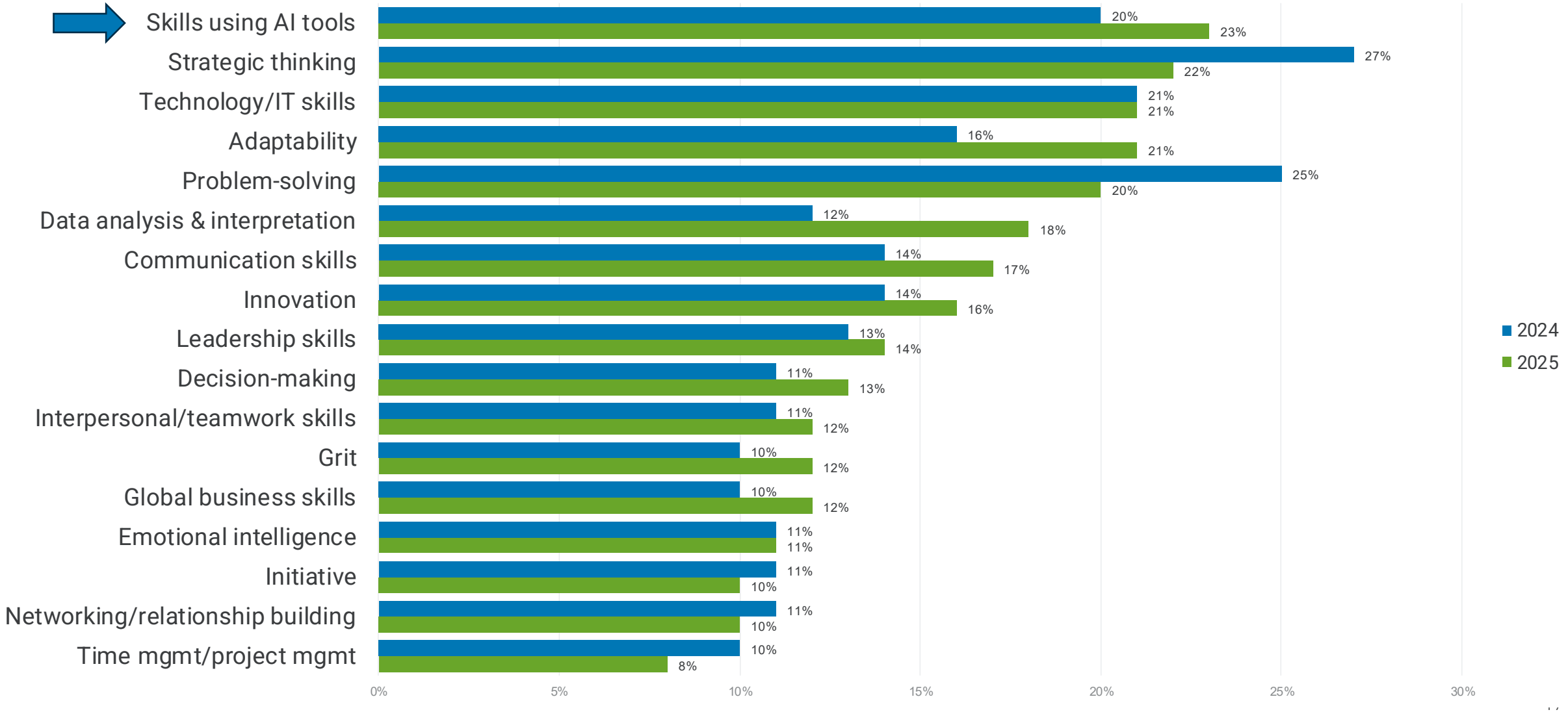

Source: GMAC Corporate Recruiters Survey 2025 Report

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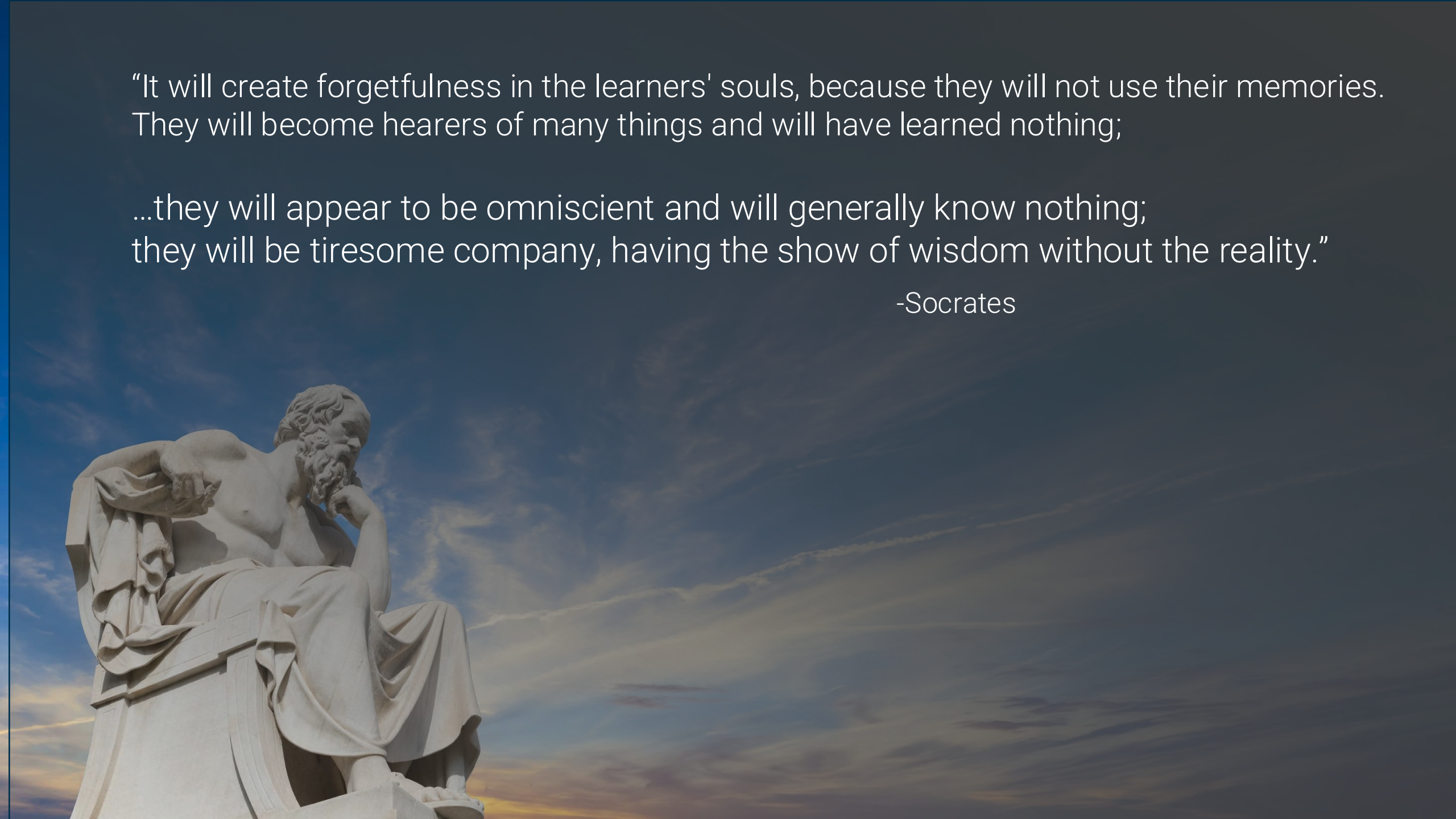
What About **Skill Atrophy?**

“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;

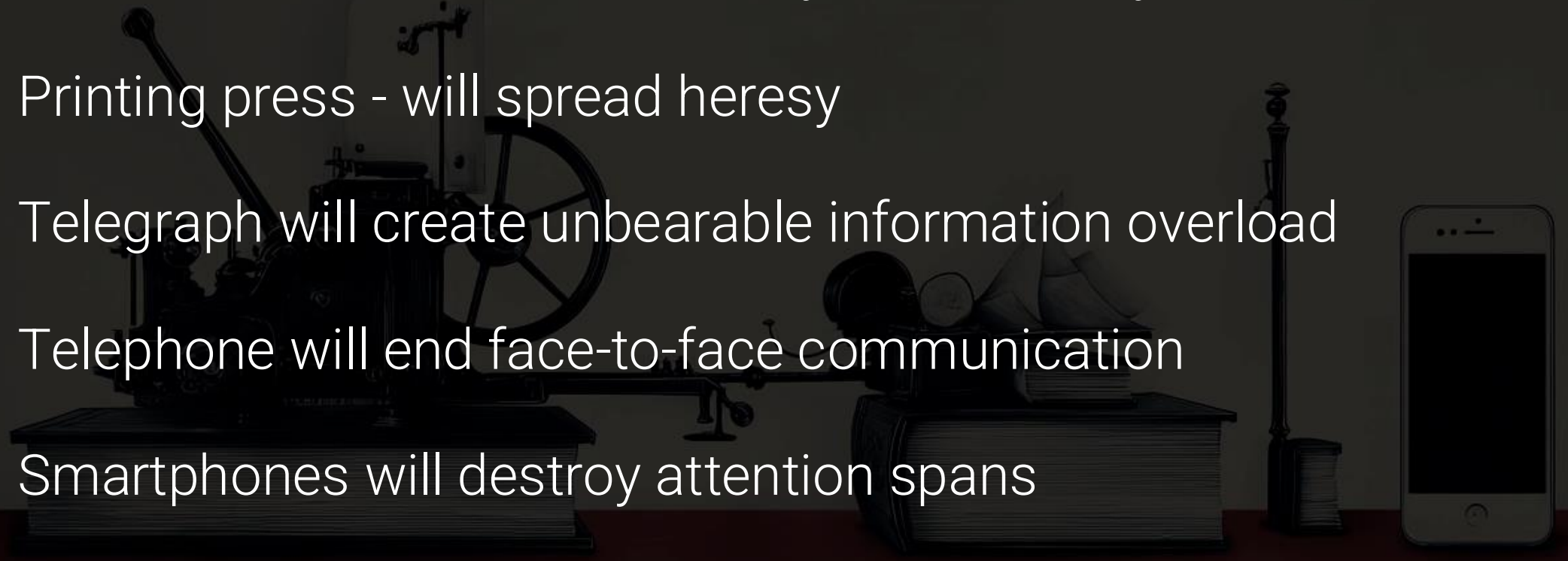
…they will appear to be omniscient and will generally know nothing;
they will be tiresome company, having the show of wisdom without the reality.”

-Socrates

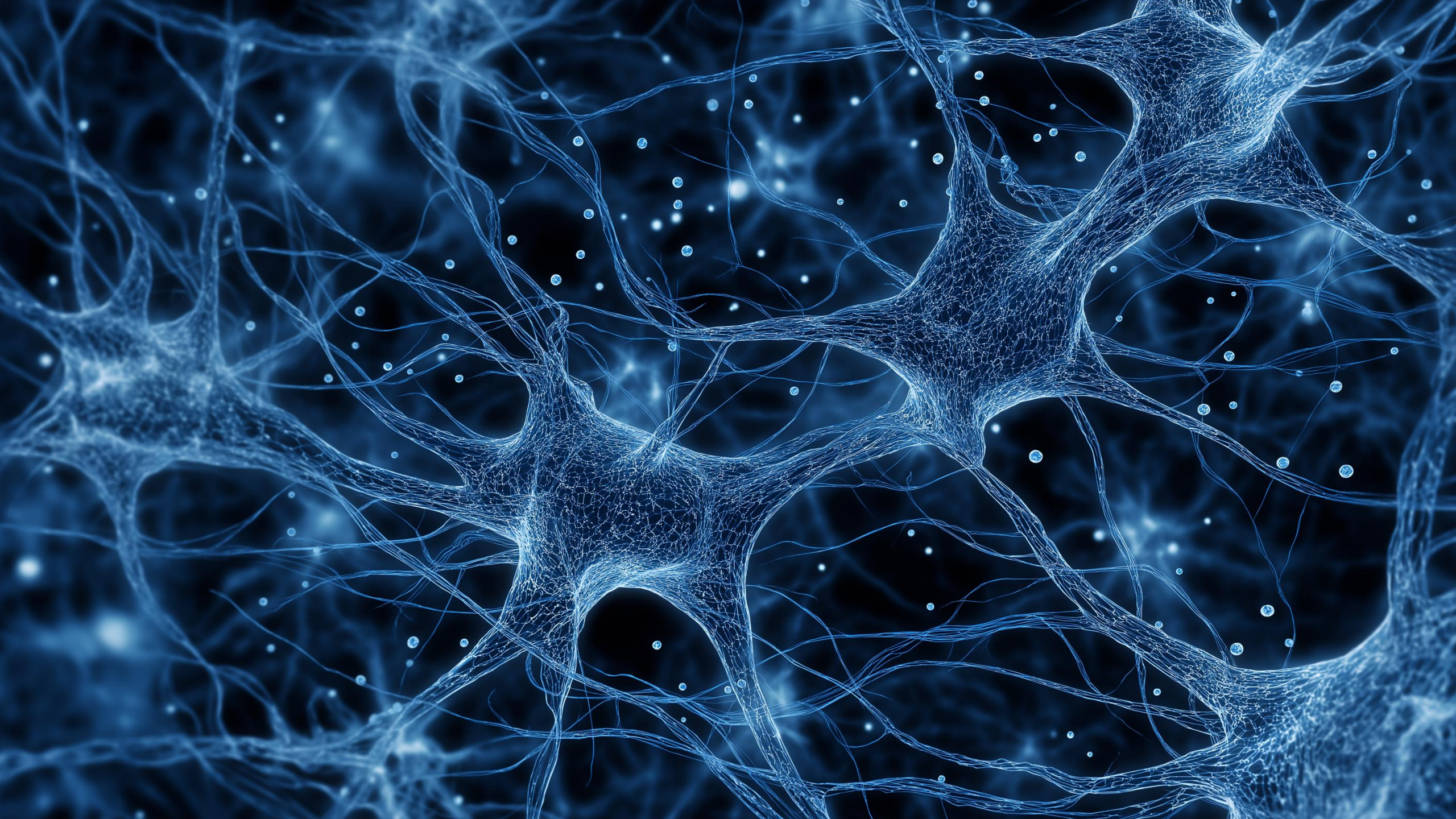


A Common Theme

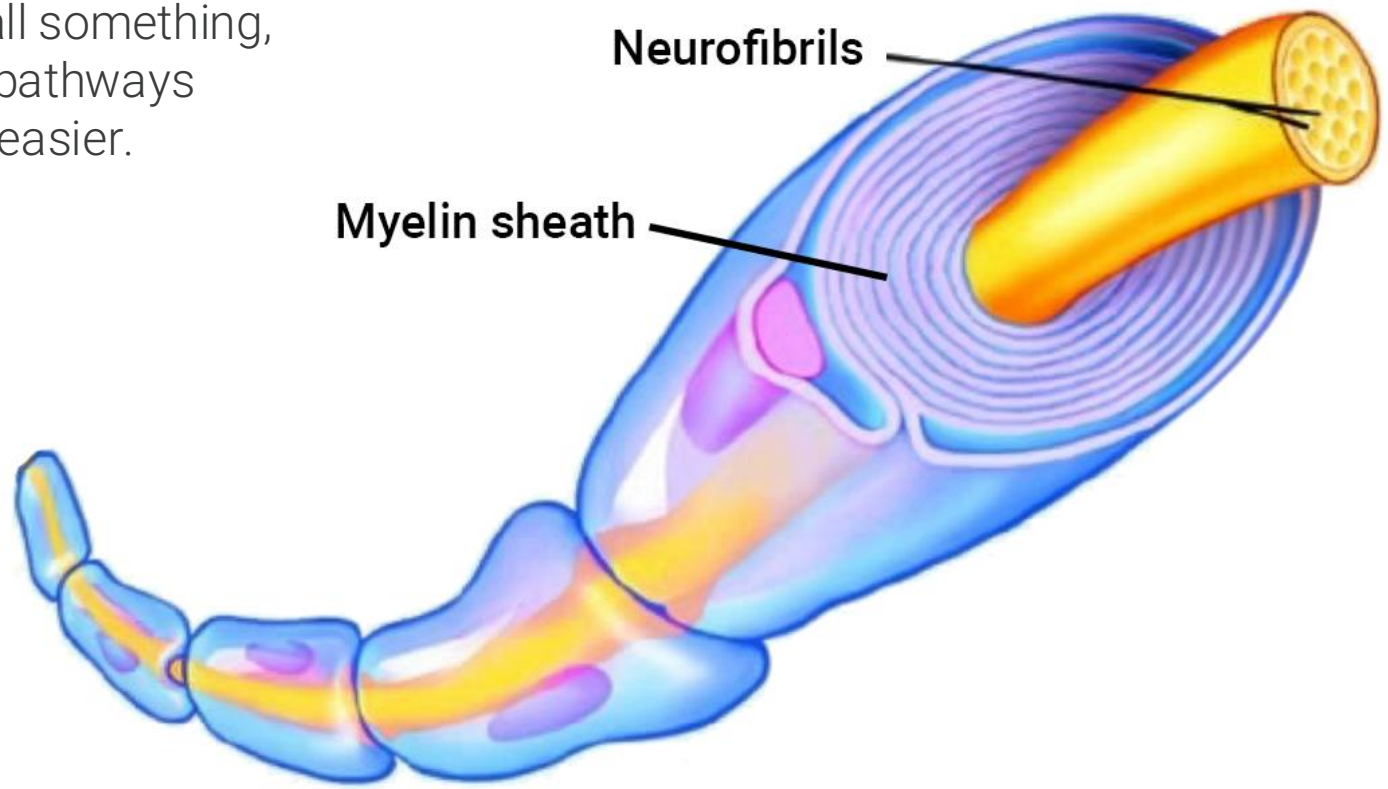
- Luddites - textile workers destroyed machinery
- Printing press - will spread heresy
- Telegraph will create unbearable information overload
- Telephone will end face-to-face communication
- Smartphones will destroy attention spans

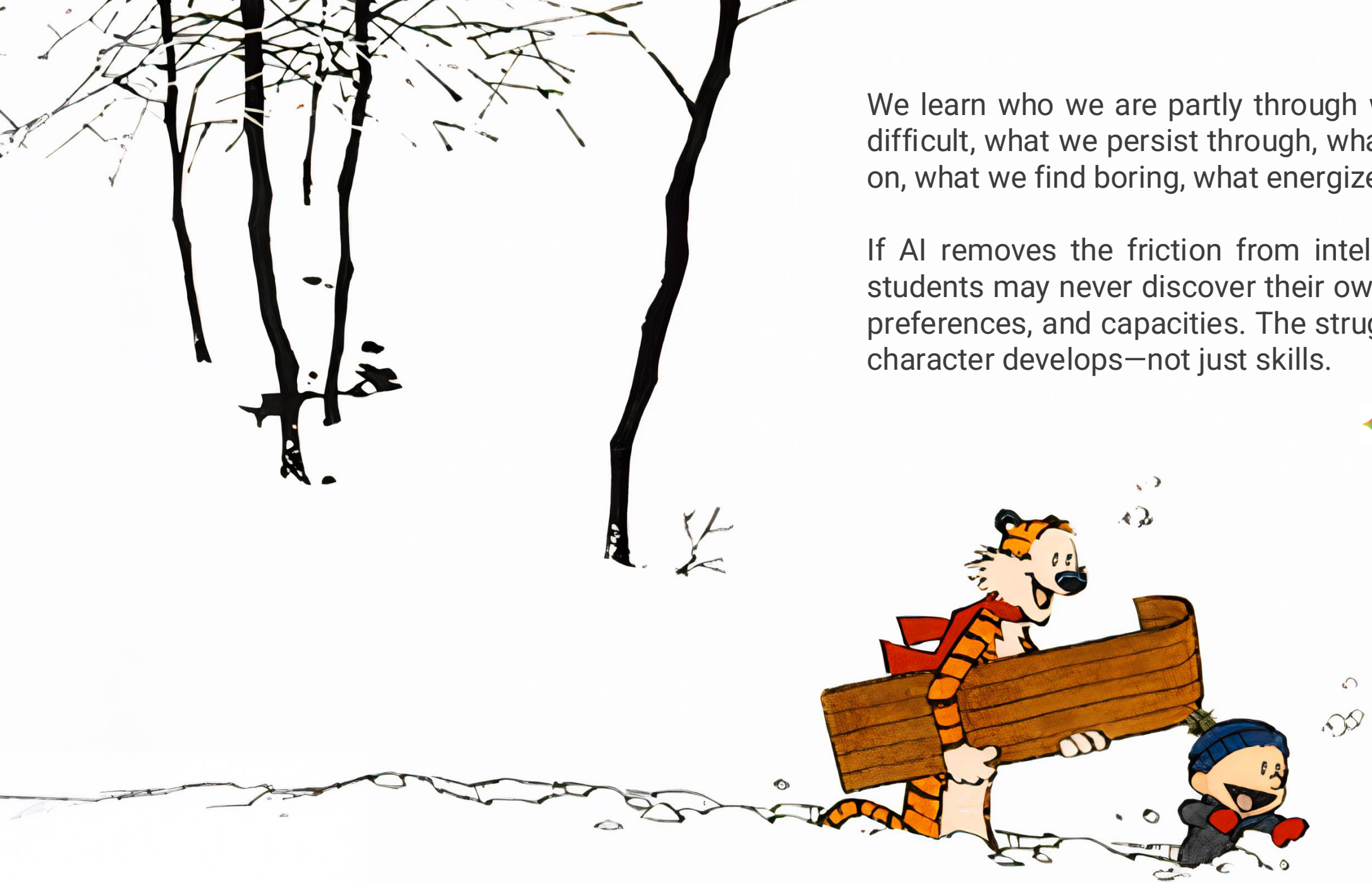



CALVIN!
1-22
© 1991 Watterson/Distributed by Universal Press Syndicate



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

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

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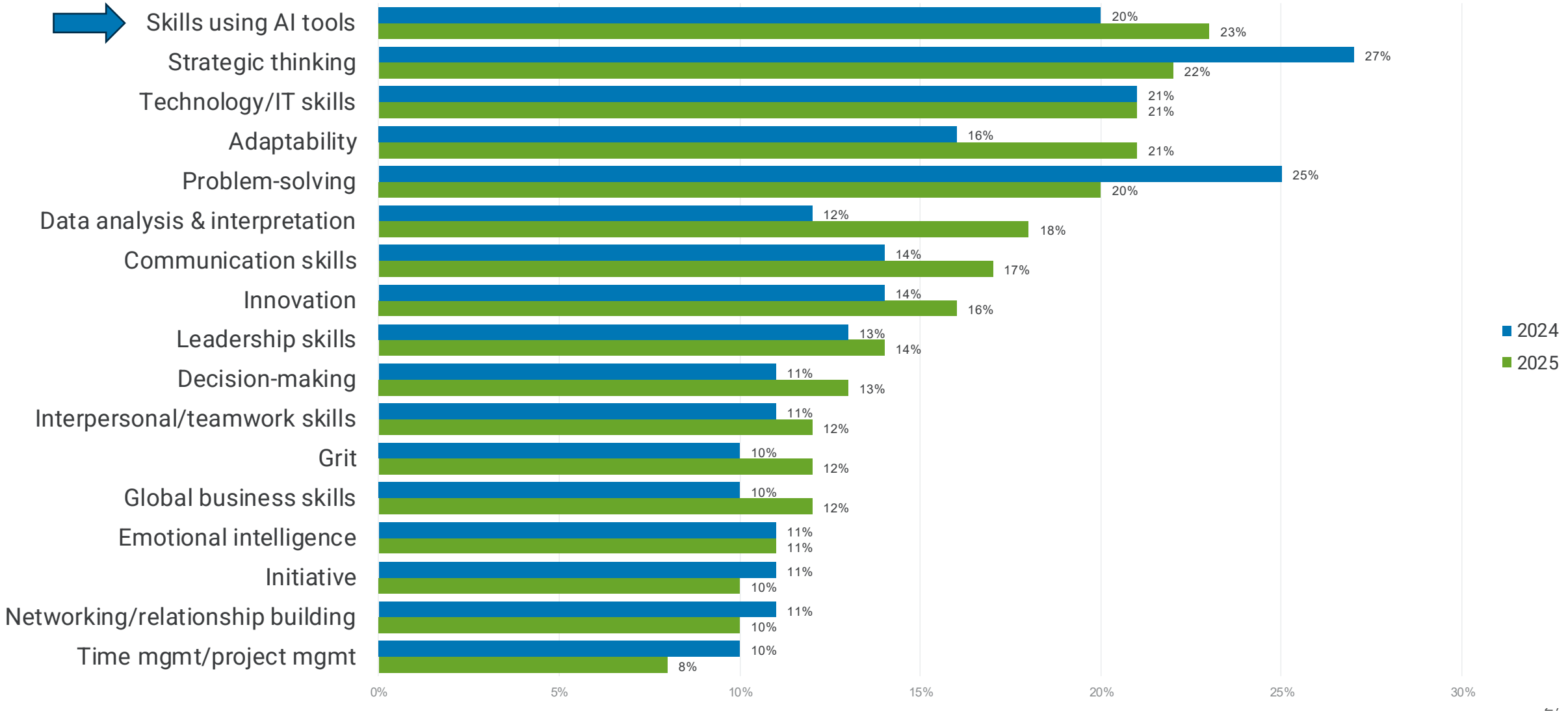
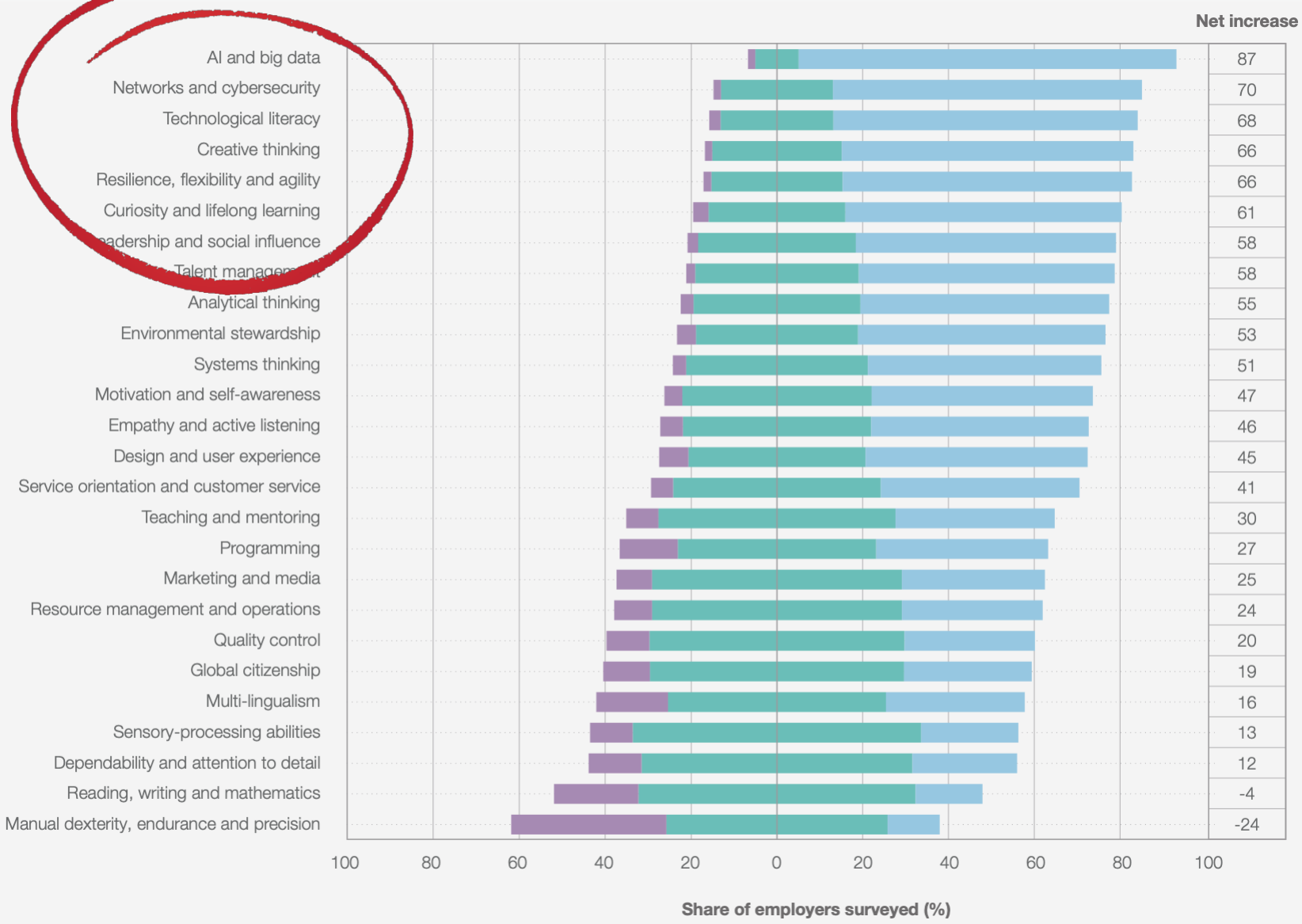


Source: GMAC Corporate Recruiters Survey 2025 Report

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



SOURCE: World Economic Forum, Future of Jobs Survey 2025.

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THE PLAYBOOK:

AI FLUENCY

WWW.QUANTHUB.COM

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AI **FOUNDATIONS**

Agile, hour-long graded modules

- Historical AI development to modern generative capabilities
- Practical use cases across professional workflows
- Fundamental **prompt engineering** and AI interaction techniques
- Hands-on practice with **multi-modal AI** tools
- Three case studies: Marketing, HR, Management applications
- **Ethical**, economic, and legal AI implications

canvas Blackboard brightspace

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AI History & Context

Ethics & Responsible Usage

Practical Skills & Tool Mastery

Critical Evaluation & Assessment

Social Impact & Communication

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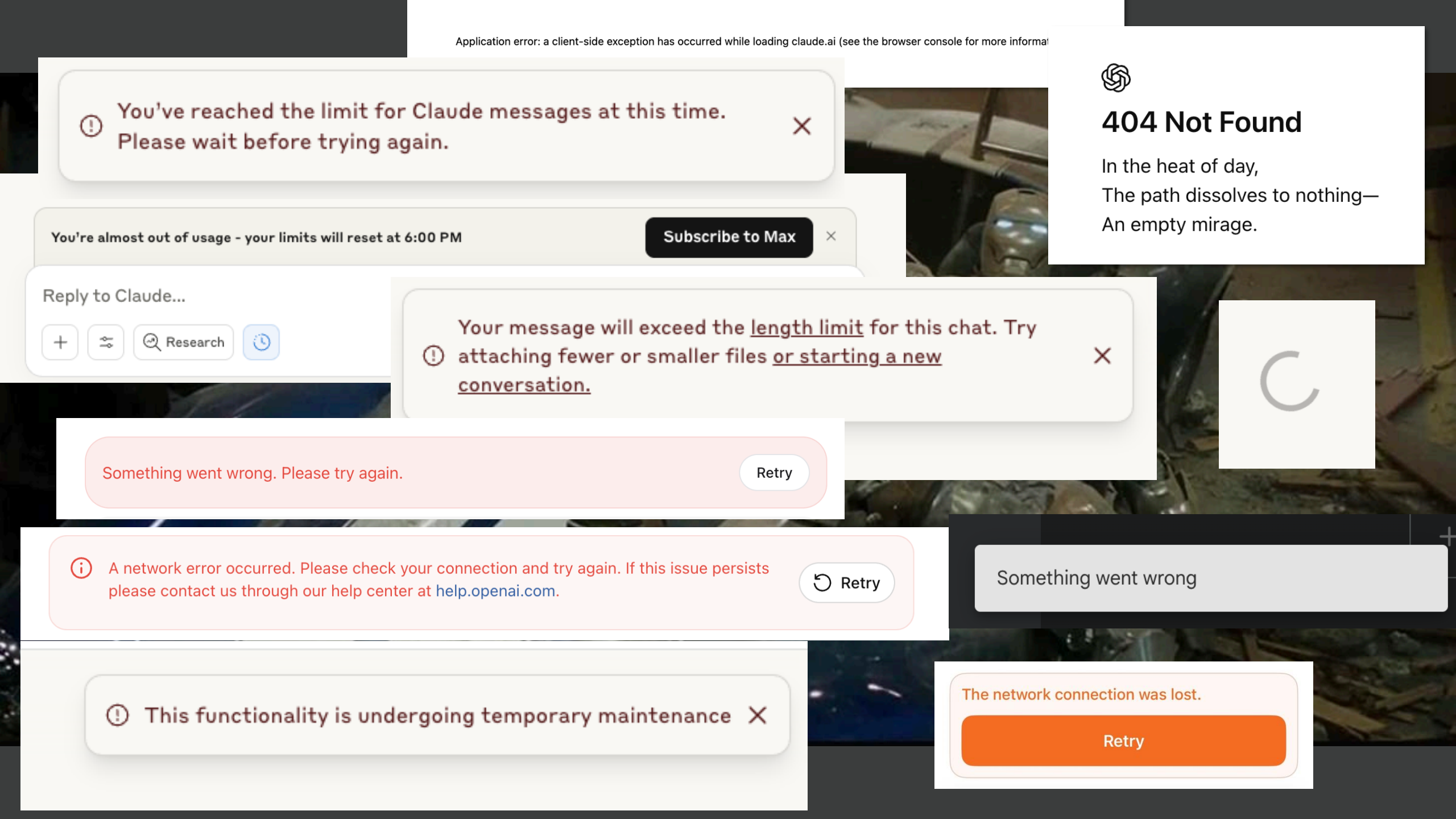
Frontier Mapping

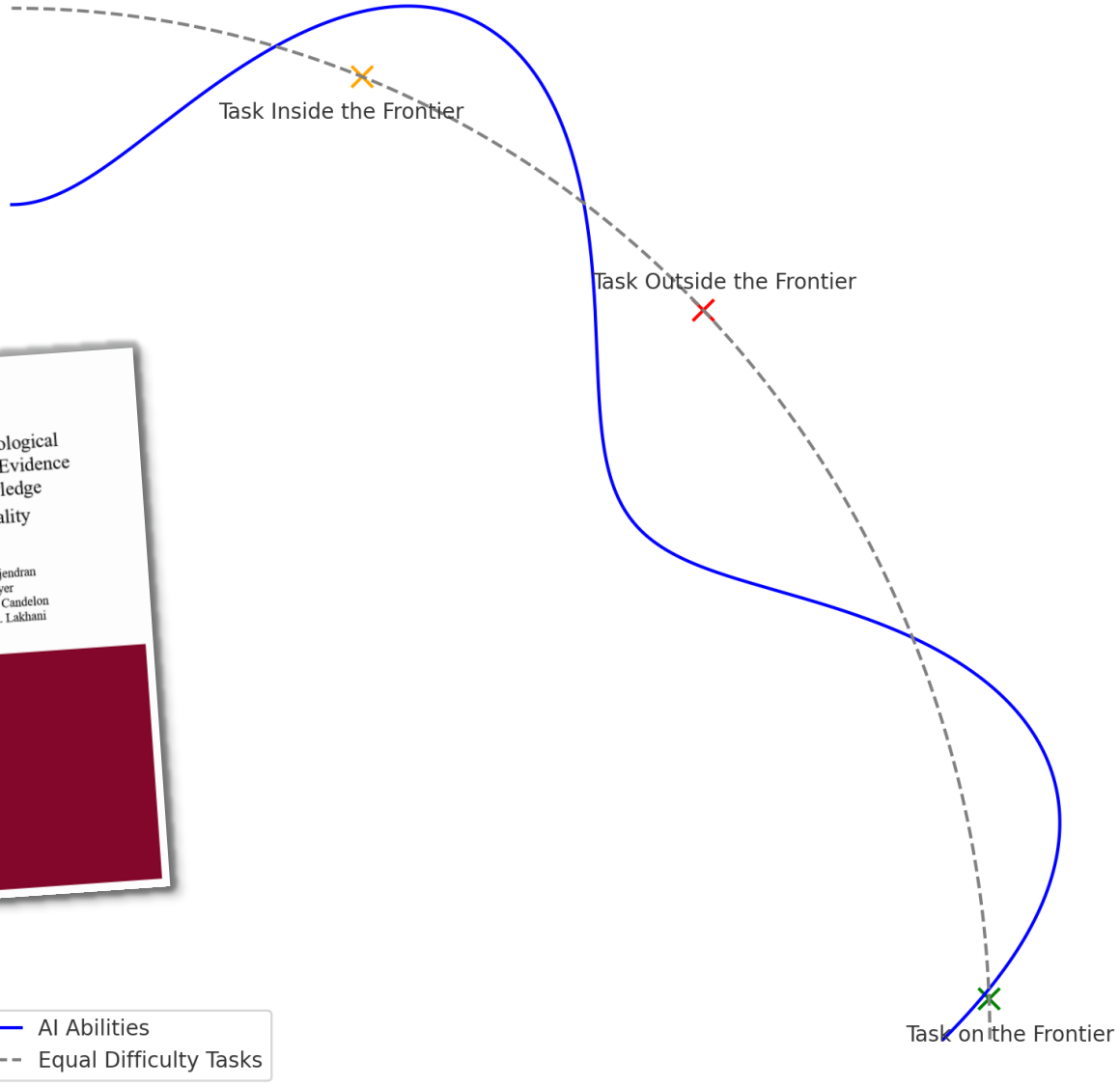
"Oh, no – We're going to be replaced!

or…

"Wow – I can accomplish the work of 2.5 people!"


Application error: a client-side exception has occurred while loading claude.ai (see the browser console for more informat
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
404 Not Found
In the heat of day,
The path dissolves to nothing—
An empty mirage.
Your message will exceed the length limit for this chat. Try attaching fewer or smaller files or starting a new conversation.
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
Something went wrong
This functionality is undergoing temporary maintenance
The network connection was lost.
Retry

“THE JAGGED FRONTIER”



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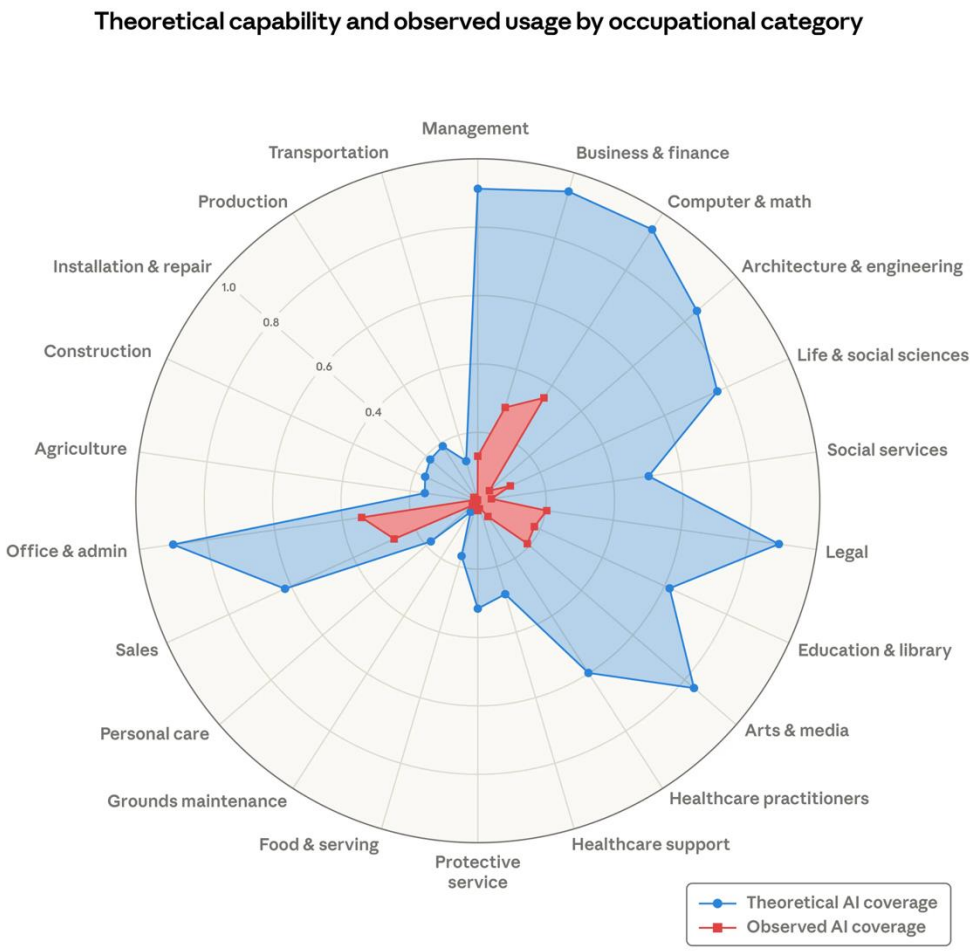
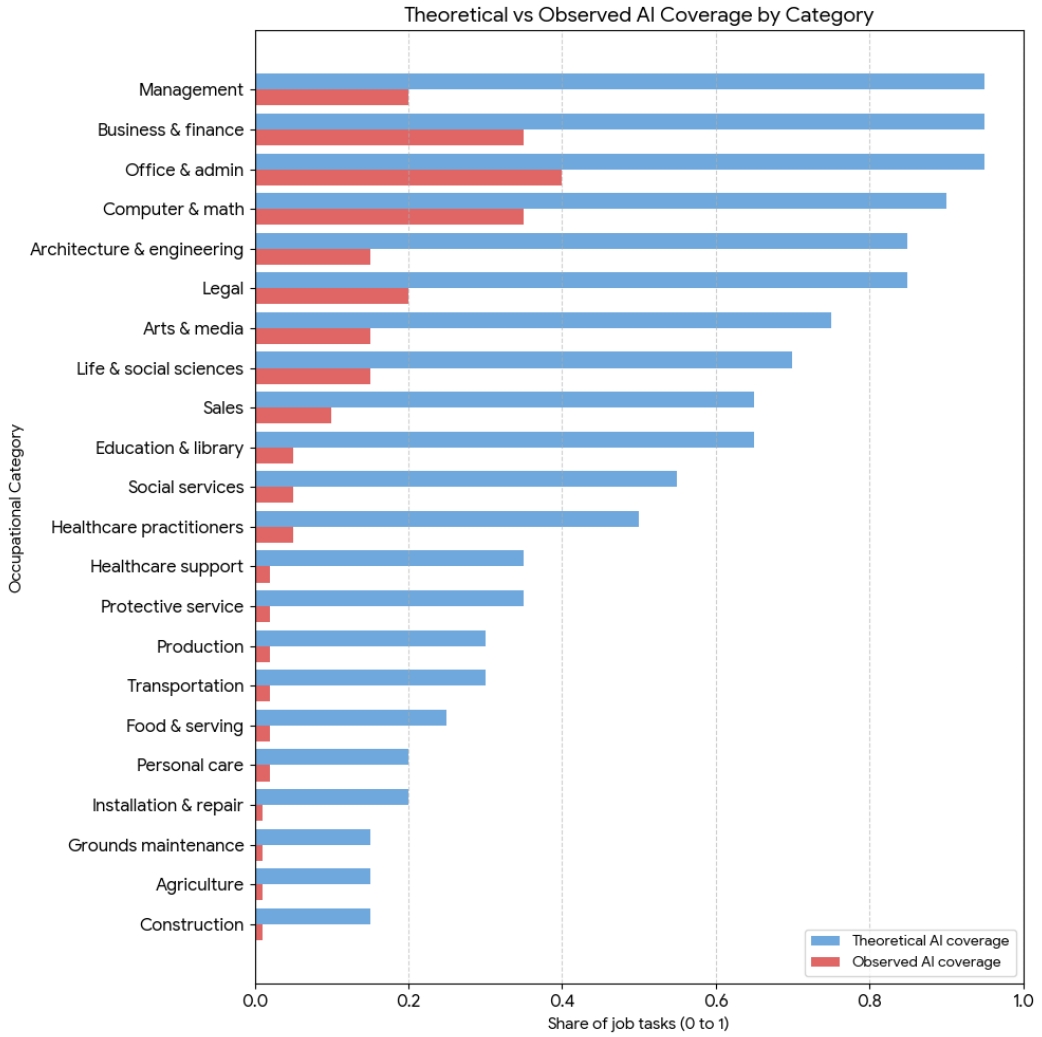

Theoretical capability and observed usage by occupational category
Management
Business & finance
Computer & math
Architecture & engineering
Life & social sciences
Social services
Legal
Education & library
Arts & media
Healthcare practitioners
Healthcare support
Protective service
Food & serving
Grounds maintenance
Personal care
Sales
Office & admin
Agriculture
Construction
Installation & repair
Production
Transportation
0.4
0.6
0.8
1.0
Theoretical AI coverage
Observed AI coverage


Theoretical vs Observed AI Coverage by Category
Occupational Category
Management
Business & finance
Office & admin
Computer & math
Architecture & engineering
Legal
Arts & media
Life & social sciences
Sales
Education & library
Social services
Healthcare practitioners
Healthcare support
Protective service
Production
Transportation
Food & serving
Personal care
Installation & repair
Grounds maintenance
Agriculture
Construction
0.0
0.2
0.4
0.6
0.8
1.0
Share of job tasks (0 to 1)
Theoretical AI coverage
Observed AI coverage

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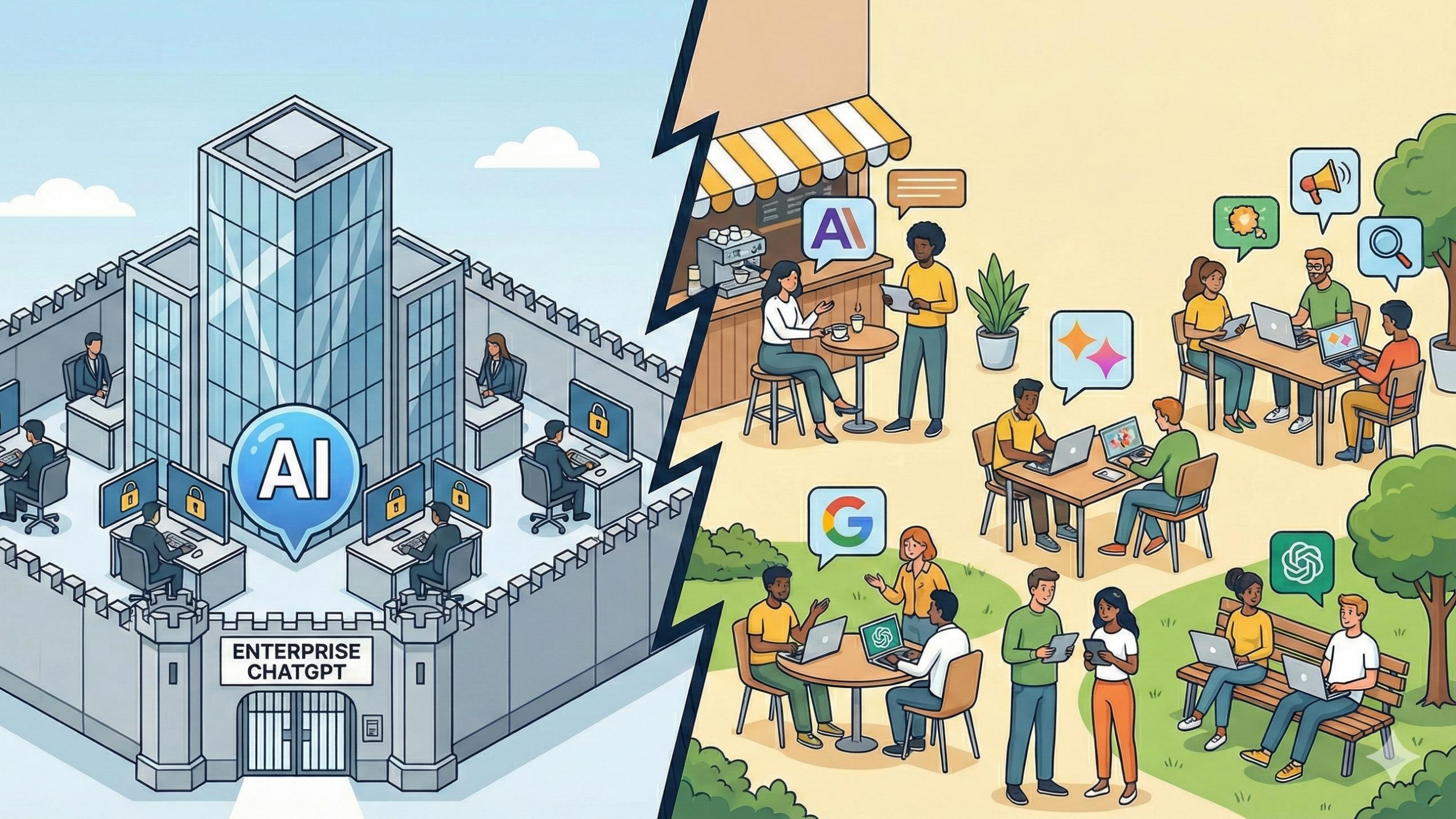
Frontier Mapping

Workflow Integration


AI
ENTERPRISE
CHATGPT
AI

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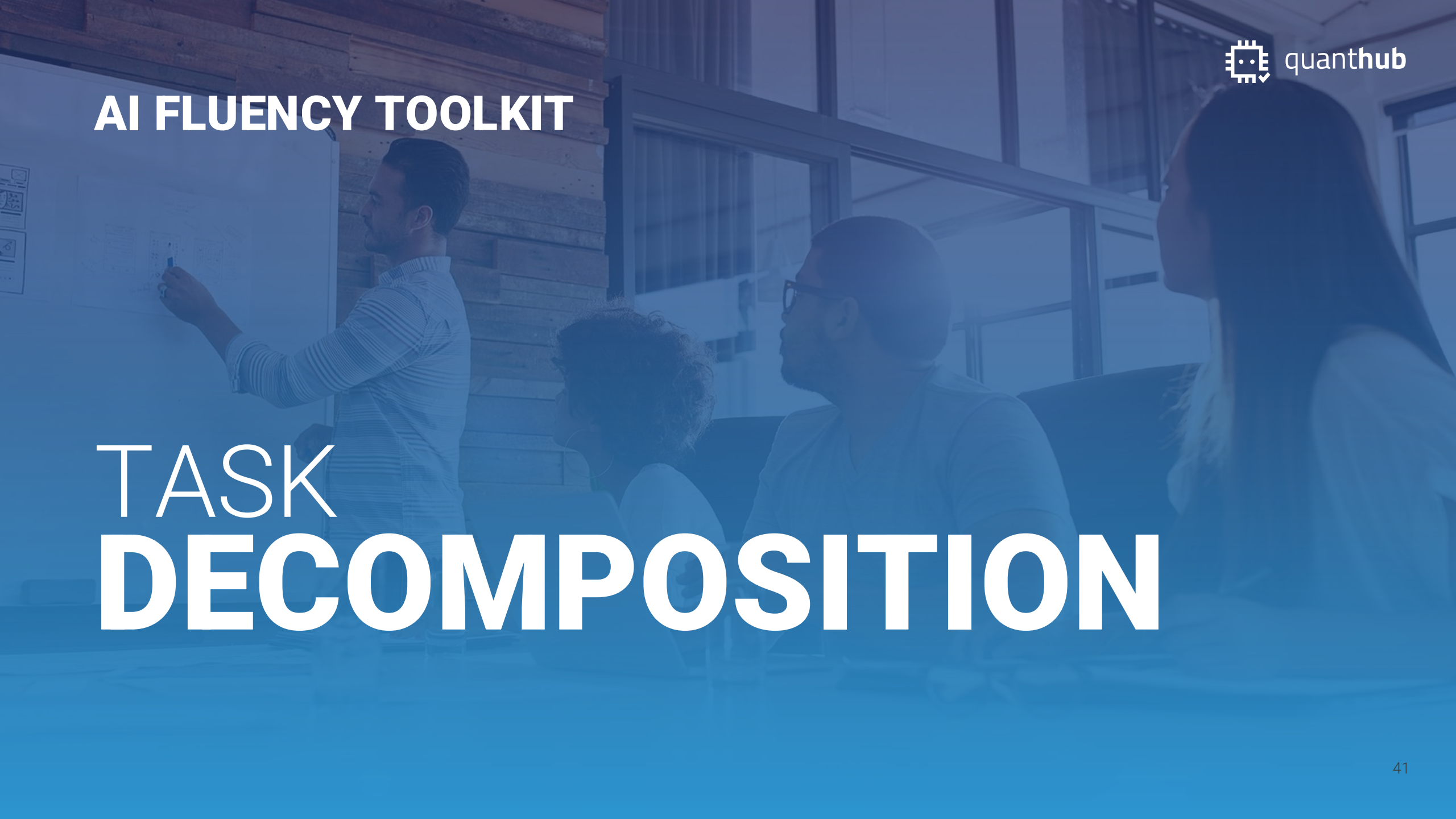
Frontier Mapping

Workflow Integration

Context Assembly

Iterative Growth

Task Decomposition



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AI FLUENCY TOOLKIT

TASK DECOMPOSITION

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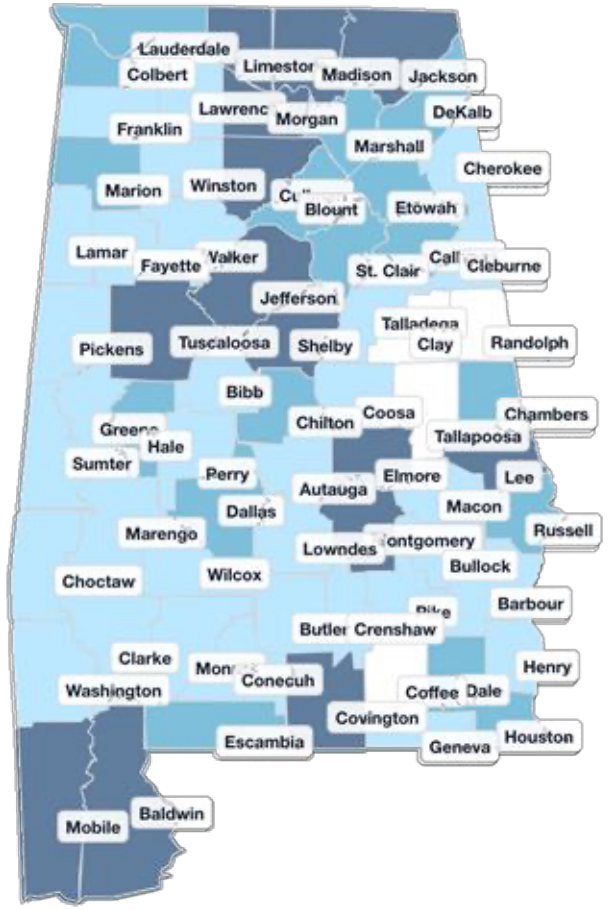
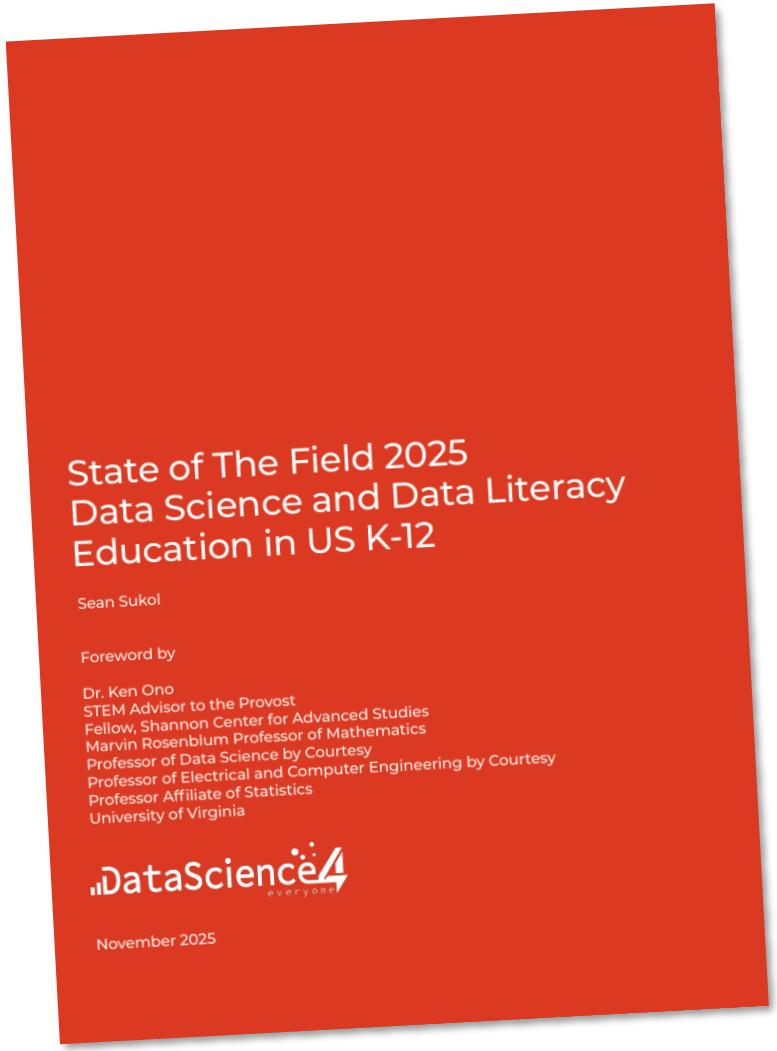
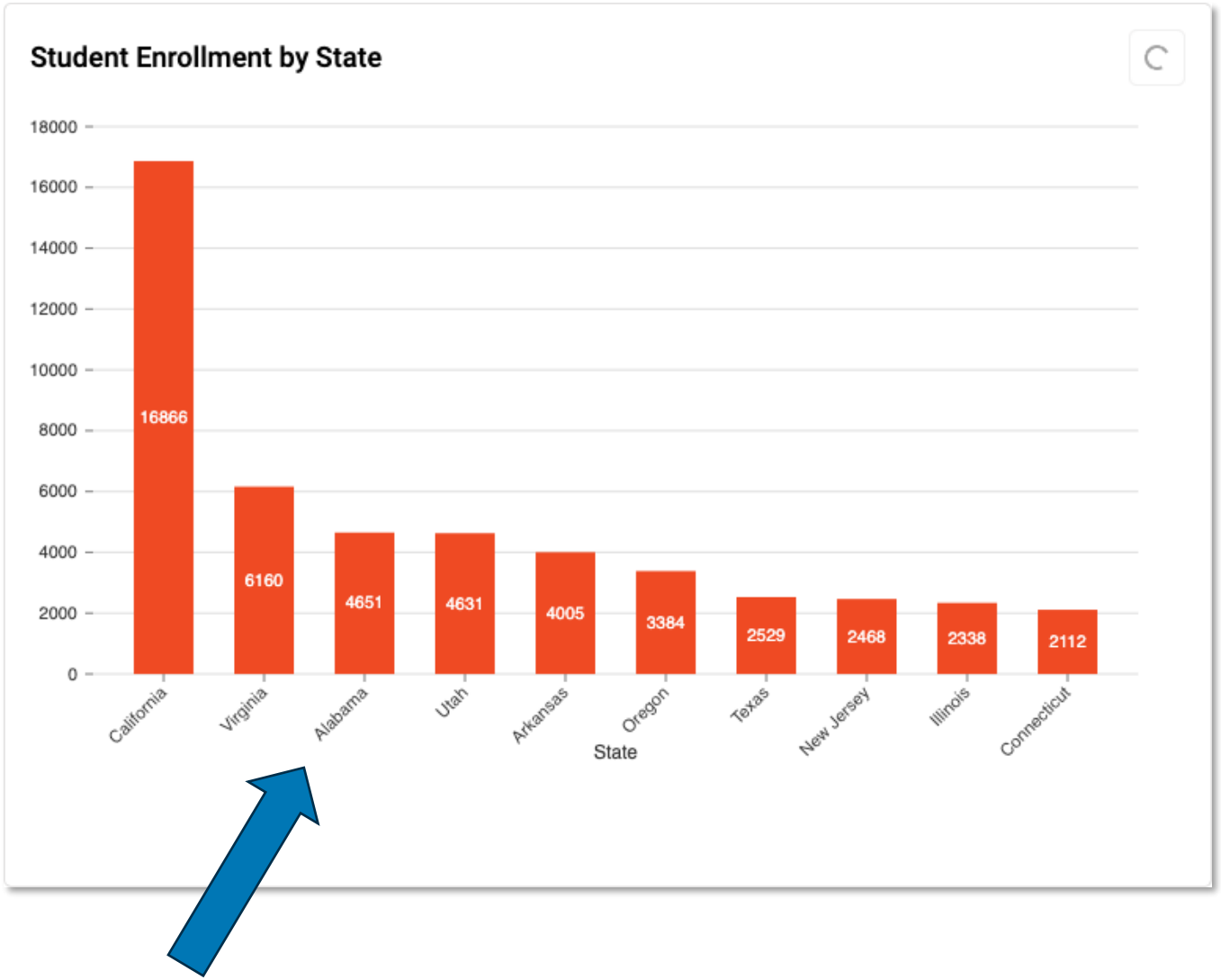
Joshua Jones
CEO, QuantHub



Legend (25-26)

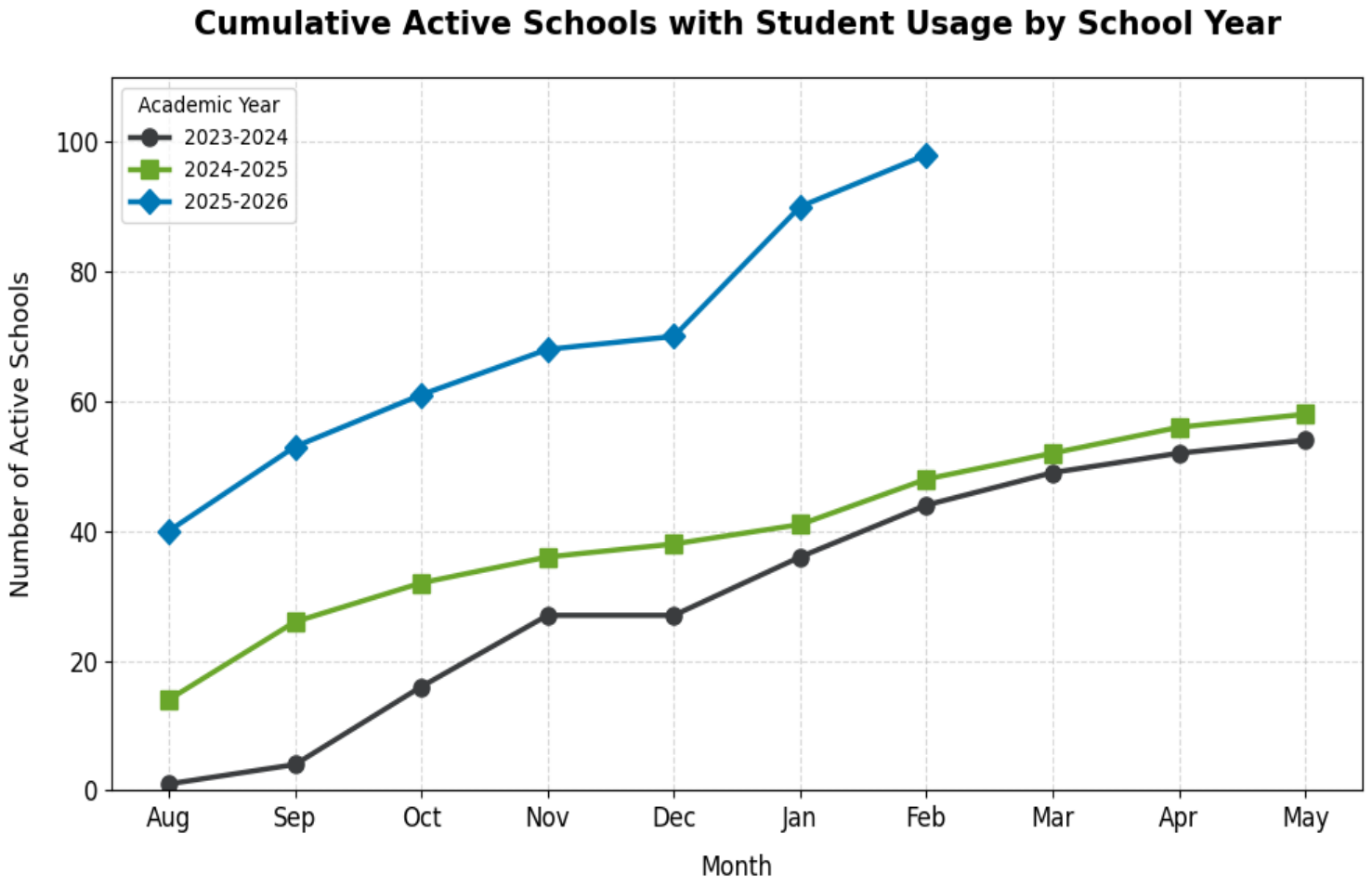
0 Active Schools | 1-3 Active Schools | 4-6 Active Schools | 7+ Active Schools


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
DataScience4 everyone
November 2025

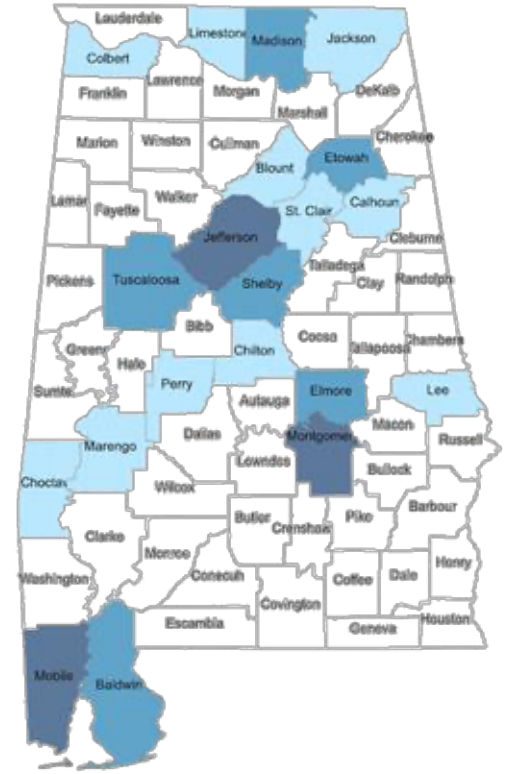

Student Enrollment by State
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
16866
6160
4651
4631
4005
3384
2529
2468
2338
2112
California
Virginia
Alabama
Utah
Arkansas
Oregon
Texas
New Jersey
Illinois
Connecticut
State


EXIT
DATA DJ

OUR WORK HAS SPANNED 136 SCHOOLS AND 920 TEACHERS

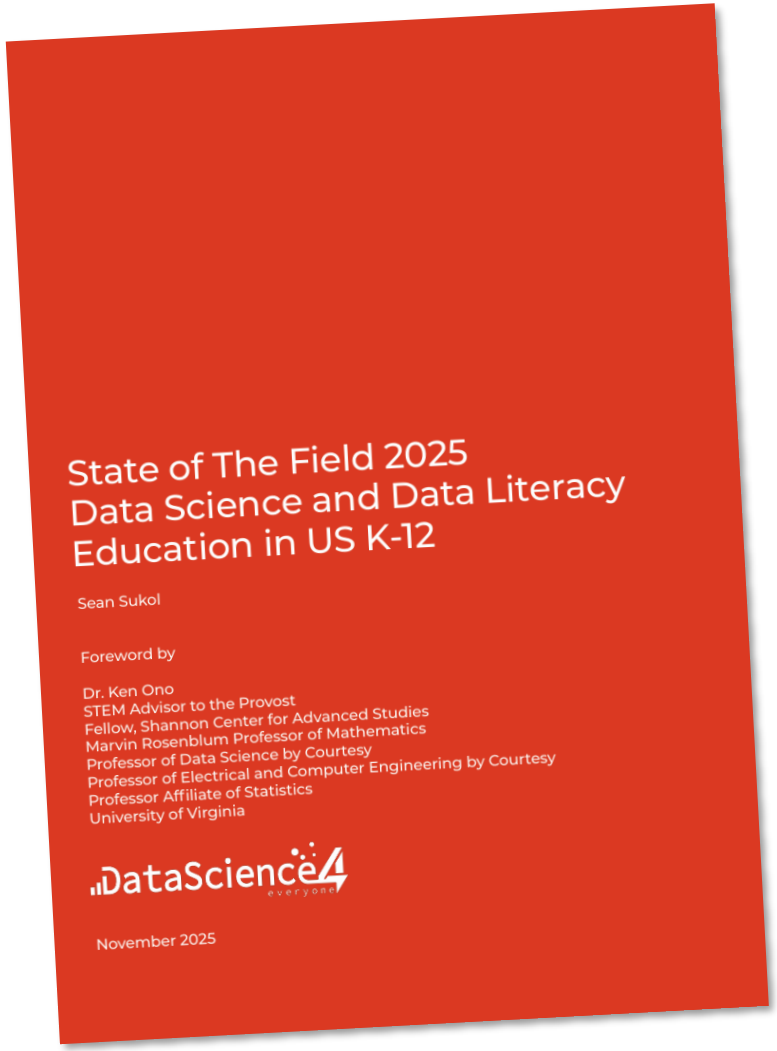


ACTIVE DATA AMBASSADORS



Legends:

- 1 Active Data Ambassador
- 2-4 Active Data Ambassadors
- 5+ Active Data Ambassadors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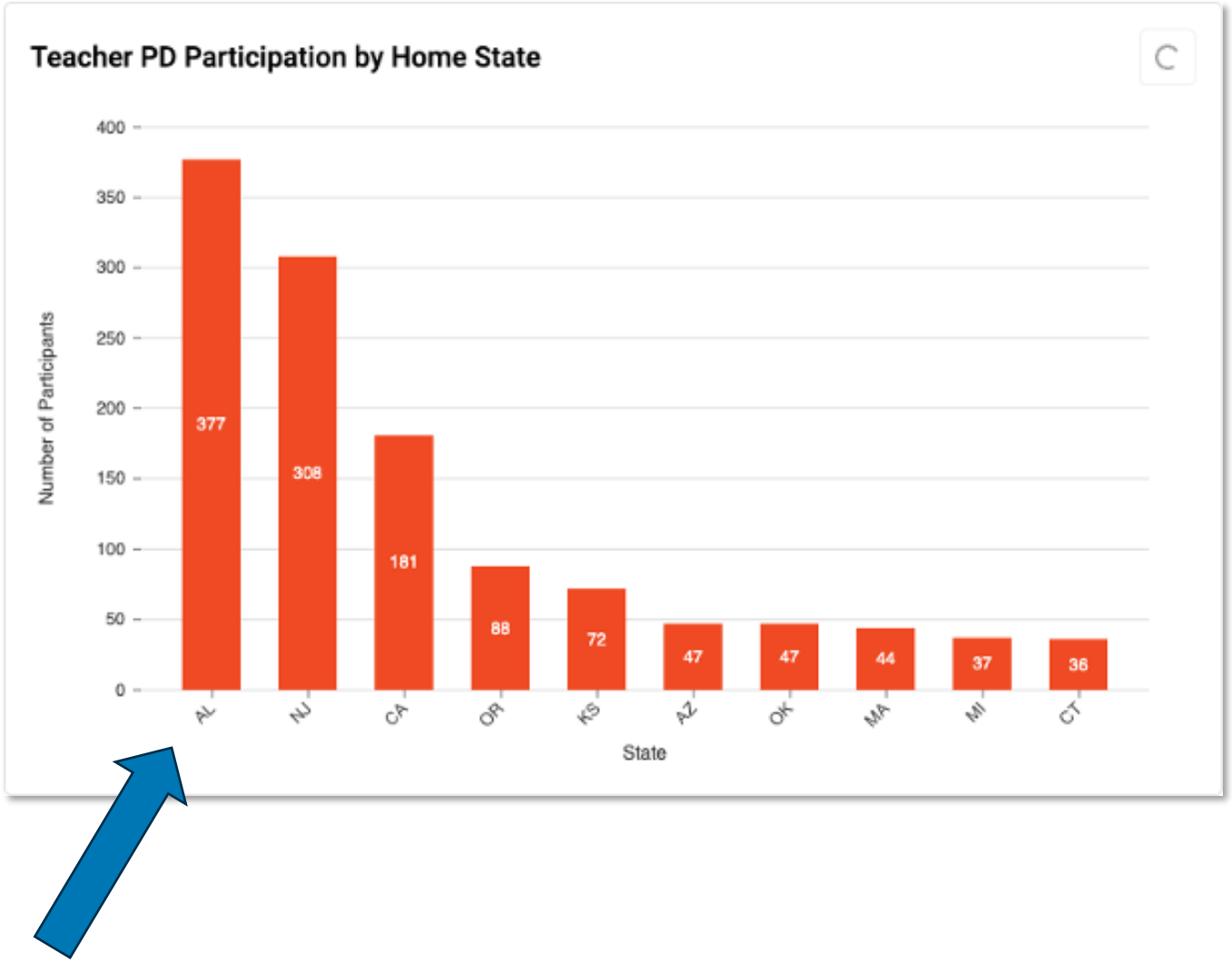
Teacher PD Participation by Home State
Number of Participants
400
350
300
250
200
150
100
50
0
377
308
181
88
72
47
47
44
37
36
AL
NJ
CA
OR
KS
AZ
OK
MA
MI
CT
State

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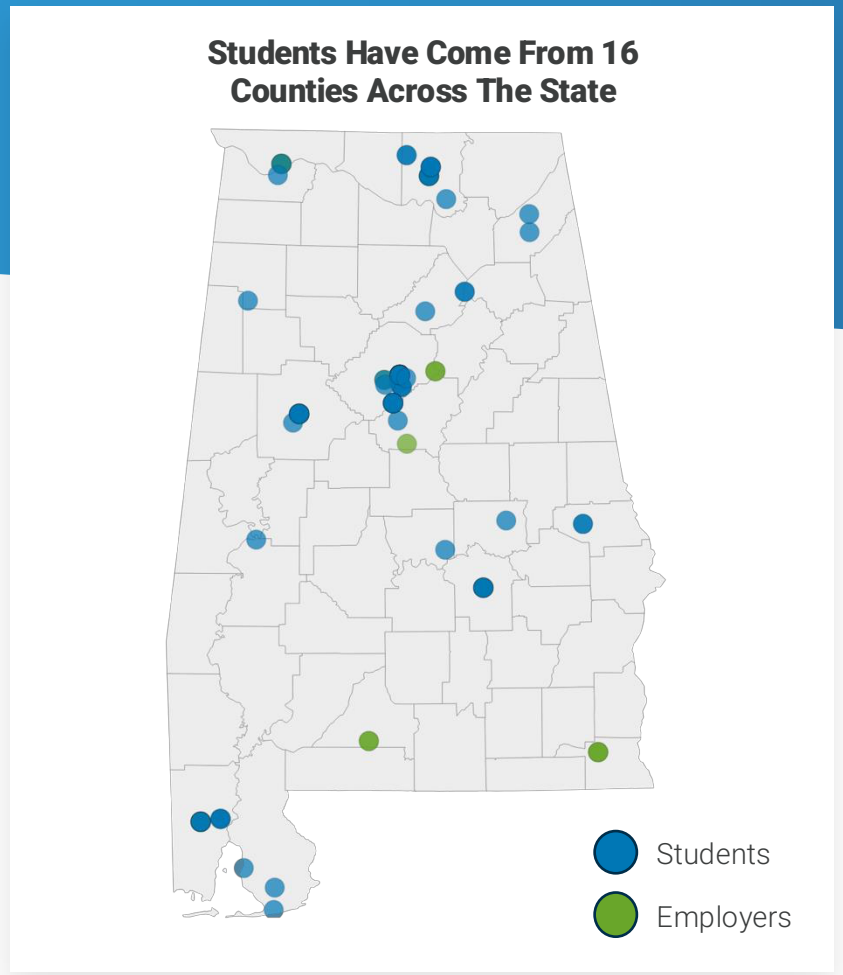
ALABAMA DATA SCHOLARS

70 Internships filled across Alabama and counting



INNOVATE ALABAMA

BlueCross BlueShield of Alabama

COLLEGE OF SCIENCE
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Altec

RxBenefits

Southern Research

Protective

Bonnie PLANTS

Southern Company

Weyerhaeuser

ONI
O'NEAL INDUSTRIES

HEADQUARTERED IN ALABAMA

Team members in Birmingham, Huntsville, Tuscaloosa, and Wetumpka

AACSB GLOBAL STANDARD 4.3 (DRAFT FOR 2026)

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"Schools should show how their curricula demonstrate integration of **digital fluency (e.g., AI literacy, data-informed decision-making, digital collaboration)** and emphasizes creativity, adaptability, ethical reasoning, and leadership."

"Schools must demonstrate how technology-related learning is **intentionally integrated across courses** to support workforce readiness."


Entrepreneurship
Marketing
Supply Chain
AI in
<Domain>
Accounting
Finance
Management

8 IMPACT AREAS PER DOMAIN

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AI Capabilities

What can AI do?

Process Impact

How is work changing?

Partnership Patterns

Who does what?

Critical Thinking

Why does judgment matter?

Context Engineering

What does AI need from you?

Ethical Frameworks

What's at stake?

Technology Landscapes

Where are the tools headed?

Org Transformation

So what? (Capstone)

AI IN <DOMAIN>

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1. Understanding AI Capabilities and Applications
2. AI for Business Process Transformation
3. Human-AI Collaboration Patterns
4. Context Engineering for Effective AI Use
5. The Business AI Technology Landscape
6. Ethical AI Use and Risk Management
7. Critical Thinking for AI-Driven Decisions
8. Leading Organizational AI Adoption

Each module is contextualized to the discipline in which it is taught.

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MARKETING IN **THE AGE OF AI**

- Defining AI capabilities in marketing
- Transforming marketing through AI across five stages
- Understanding AI collaboration structures and vocabulary
- Understanding context engineering for AI in marketing
- Understanding AI tools used by marketers
- Identifying ethical risks and frameworks in marketing AI
- Understanding critical thinking for effective AI collaboration

	A	B	C	E	F	H	I
1	Course Numbe	Course Name	Program Level	Course Competencie	Course Learning Objectives	Aligned Modules	AASCB Alignment (from proposed standards)
2	ACC 2010	Financial Accounting	Undergraduate	Financial accounting literacy; transaction recording; financial statement preparation; ethical accounting practice	Financial accounting is designed to help students understand accounting as the basic language of business. Journals, ledgers, adjusting entries and closing entries are introduced and utilized in building the financial and operating statements of business entities emphasizing the use of accounting information in making investment and other decisions.	• AI Capabilities in Accounting • AI's Impact on Accounting Processes • Human-AI Collaboration in Accounting • Communicating with AI for Accounting Tasks • AI Tools for Accounting • Ethical Use of AI in Accounting • Critical Thinking for Leveraging AI in Accounting	4.3 Digital Agility: The curricula provide learners with exposure to current and emerging digital, analytical, and information technologies relevant to business practice.
3	ACC 2020	Managerial Accounting	Undergraduate	Internal accounting analysis; cost management; managerial decision support; planning and control	An introduction to internal accounting and reporting of organizations, emphasizing the use of accounting information used by management and other decision makers within the organization emphasizing the ways accounting information helps managers as they plan, develop control procedures and make decisions for their organizations.	• AI Capabilities in Accounting • AI's Impact on Accounting Processes • Human-AI Collaboration in Accounting • Communicating with AI for Accounting Tasks • AI Tools for Accounting • Ethical Use of AI in Accounting • Critical Thinking for Leveraging AI in Accounting	4.3 Digital Agility: The curricula provide learners with exposure to current and emerging digital, analytical, and information technologies relevant to business practice.
4	BUA 1050	Practical Excel for Business	Undergraduate	Spreadsheet literacy; data analysis; business technology proficiency	Manage Excel Worksheets and Workbooks. Manage Data Cells & Ranges. Manage Tables & Table Data. Perform Operations by Using Formulas & Functions. Manage Charts.	• Excel workspace components • Formatting Excel workspace • Calculating descriptive statistics • Excel's efficiency tools • Absolute and relative cell references • COUNT, COUNTA, and COUTIF(S) functions • Structured and pivot tables • MEDIAN and PROB functions • Creating appropriate charts • Automated decision-making with nested logic • Advanced conditional data analysis	4.3 Digital Agility: Schools should demonstrate how they review and update technology-related curriculum content to ensure currency and continued relevance.
5	BUA 3050	Business Law	Undergraduate	Legal reasoning; compliance awareness; contract analysis	Develop a basic understanding of the role of the courts, judicial system, and alternative forms of dispute resolution for resolving legal issues and conflicts in business.	Ethics and security of AI	4.3 Digital Agility: Schools should foster learner agility in adopting and adapting to new technologies and understanding their appropriate and responsible use, ensuring that human judgment and intelligence guide the application of digital intelligence
	BUA 5060	Global Sales Leadership	Undergraduate	Sales leadership; ethical selling; global sales management	To understand the key differences between sales leadership, sales management, and professional selling.	• AI Capabilities in Sales • AI's Impact on Sales Processes • Human-AI Collaboration in Sales	4.3 Digital Agility: Schools should demonstrate how they review and update technology-related curriculum content to ensure currency and continued relevance.

	A	B	D	E	F
1	**Core Competency**	**Core Learning Outcome**	**Relevant Module Name**	**Relevant Module Description**	**AASCB Alignment (from proposed standards)**
9	Business Acumen	organizational functions.	AI's Impact on Marketing Processes	across five essential stages.	business context.
10	Business Acumen	Develop and effectively execute appropriate strategies in the pursuit of organizational goals.	Critical Thinking for Leveraging AI in Marketing	Understand the critical thinking skills essential for effective collaboration with AI.	4.3 Digital Agility: Schools should foster learner agility in adopting and adapting to new technologies and understanding their appropriate and responsible use, ensuring that human judgment and intelligence guide the application of digital intelligence
11	Business Acumen	Demonstrate an understanding of legal, ethical, and global considerations confronting organizations.	Ethical Use of AI in Marketing	Identify ethical risks and frameworks necessary for the responsible use of AI in marketing.	4.3 Digital Agility: Schools should foster learner agility in adopting and adapting to new technologies and understanding their appropriate and responsible use, ensuring that human judgment and intelligence guide the application of digital intelligence
12	Communication	Articulate the role effective communication plays in students' personal lives and professional endeavors.			4.6 Engagement of Learners: Curricula should include learning experiences that encourage collaboration, dialogue, and peer-to-peer learning.
13	Communication	Apply the principles of effective communication in the written, oral, and formal presentation contexts.			4.2 Curriculum Management: Schools should demonstrate that curricula foster both agility and innovation in adapting to evolving digital, analytical, and information technologies that shape business practice. Learners are exposed to technological concepts, tools, and applications relevant to contemporary and emerging business environments. The curricula reflect intentional design to ensure graduates possess the ability to apply technologies creatively and responsibly in solving business problems.
14	Communication	Utilize advanced technologies for enhanced understanding and impact in the written, oral, and formal presentation contexts.	Selecting AI tools	Learn to categorize AI tools for improved selection.	4.3 Digital Agility: Schools should demonstrate learner ability in interpreting and evaluating outputs generated by these technologies and communicate insights effectively in a business context.
15	Communication	Demonstrate critical thought in their written, oral, and non-verbal communications.	Evaluating influence techniques on AI response quality	Explore different techniques found to improve AI responses.	4.3 Digital Agility: Schools should demonstrate learner ability in interpreting and evaluating outputs generated by these technologies and communicate insights effectively in a business context.
16	Communication	Demonstrate professionalism in their written, oral, and non-verbal communications.	AI use cases in professional workflows	Explore AI use cases in today's professional workflows.	4.3 Digital Agility: Schools should demonstrate learner ability in interpreting and evaluating outputs generated by these technologies and communicate insights effectively in a business context.
17	Professionalism & Self-Leadership	Identify and demonstrate business professionalism through interactions with relevant stakeholders.	Prompting versus traditional computing interactions	Understand the difference between prompting and traditional computing interactions.	4.3 Digital Agility: Schools should review and update technology-related curriculum content to ensure currency and continued relevance.
18	Professionalism & Self-Leadership	Develop a professional portfolio for use when interacting with relevant stakeholders.			4.6 Engagement of Learners: Curricula should include learning experiences that encourage collaboration, dialogue, and peer-to-peer learning.
19	Professionalism & Self-Leadership	Enhance career readiness through participation in internships, job shadowing, service learning, and other similar activities.	AI as your learning partner	Explore AI's value as your partner in learning.	4.2 Curriculum Management: Schools should demonstrate that curricula foster both agility and innovation in adapting to evolving digital, analytical, and information technologies that shape business practice. Learners are exposed to technological concepts, tools, and applications relevant to contemporary and emerging business environments. The curricula reflect intentional design to ensure graduates possess the ability to apply technologies creatively and responsibly in solving business problems.
20	Professionalism & Self-Leadership	Identify and engage in collaborative teamwork processes that achieve team and organizational goals while respecting diverse opinions and contributions.			4.6 Engagement of Learners: Curricula should include learning experiences that encourage collaboration, dialogue, and peer-to-peer learning.
21	Professionalism & Self-Leadership	Identify and demonstrate self-leadership approaches that lead to individual growth and improved performance.	Applying AI for performance analysis	Learn to apply effective prompt engineering to conduct evidence-based performance analysis.	4.3 Digital Agility: Schools should demonstrate how technology-related learning is intentionally integrated across courses or learning experiences to support workforce readiness in a technologyforward environment.

FREE FACULTY TRAINING

- Streamline admin tasks with AI
- Accelerate research lifecycle using AI
- Enhance course materials with AI
- Streamline assessment and feedback with AI

- AI systems' fundamental characteristics
- History and current state of AI
- Generative AI use cases in workflows
- Basic prompt engineering techniques
- Ethical and security considerations
- Selecting effective AI tools for workflows

We must ask "what kind of person does this technology encourage me to become?”

-Shannon Vallor, in *Technology and the Virtues*

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