



SAN DIEGO
Community College District

A.I DEMYSTIFIED: INTRODUCTION TO A.I LITERACY

RODRIGO GOMEZ, II&E

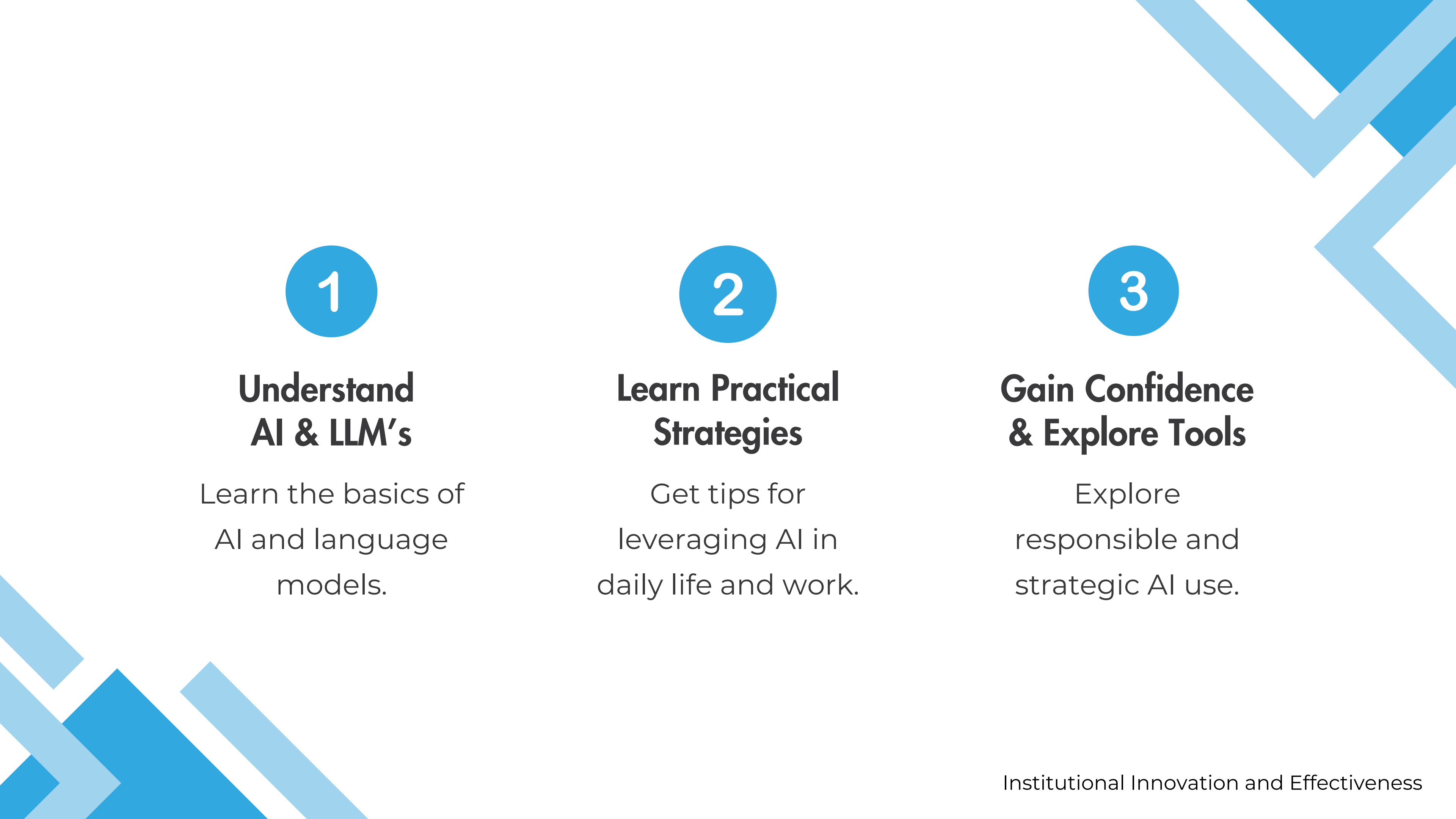
2/7/25



RODRIGO GOMEZ

**FACULTY SPECIALIST FOR EMERGING TECHNOLOGY,
FULL PROFESSOR, MIRAMAR COLLEGE**

I have a passion for rhetoric, pedagogy, and poetry. I also maintain a keen interest in gamification, edtech, and web3 technologies, like artificial intelligence (AI) and the metaverse, particularly in how they can make education more engaging, relevant, and impactful for students.



1

Understand AI & LLM's

Learn the basics of
AI and language
models.

2

Learn Practical Strategies

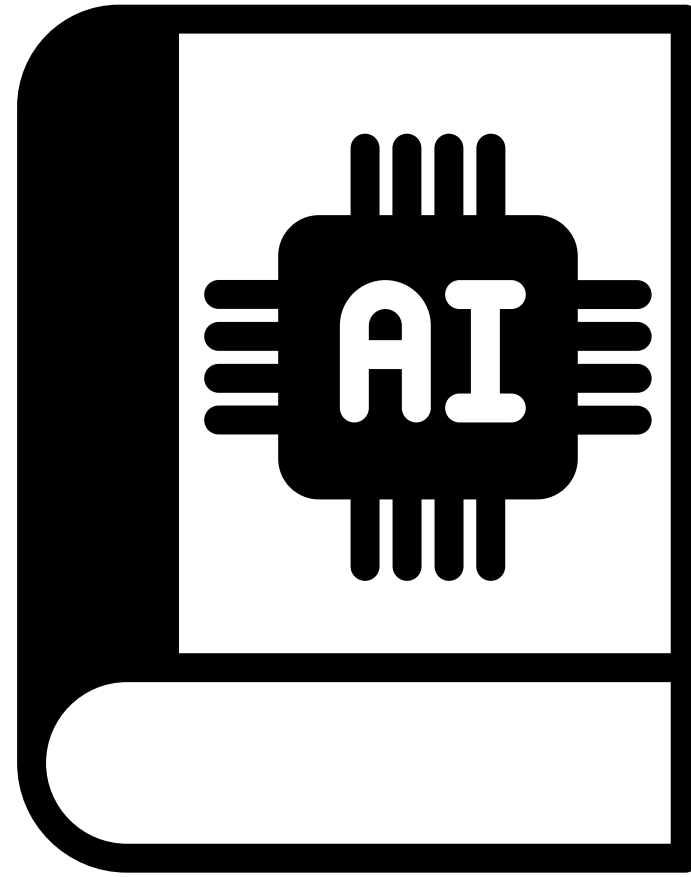
Get tips for
leveraging AI in
daily life and work.

3

Gain Confidence & Explore Tools

Explore
responsible and
strategic AI use.

Defining: A.I Literacy



AI Literacy is the ability to understand, critically engage with, and effectively use **artificial intelligence** in meaningful ways

AI-literate individuals can not only use AI tools but also assess their limitations, ethical concerns, and real-world implications.

It even involves recognizing how AI systems shape information, influence decision-making, and impact society.

AI is Not New

Machine Learning, Deep Learning, Large Language Models

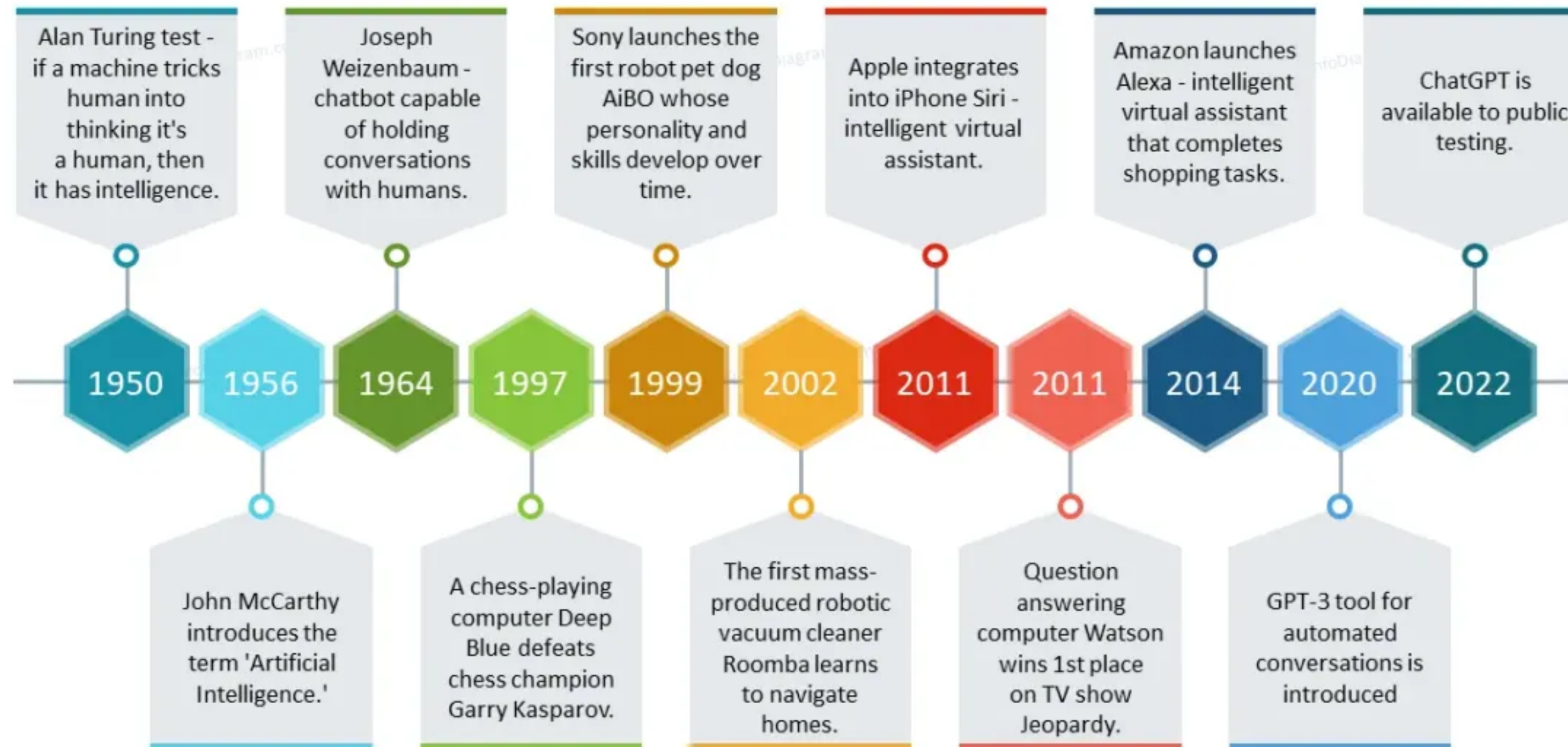
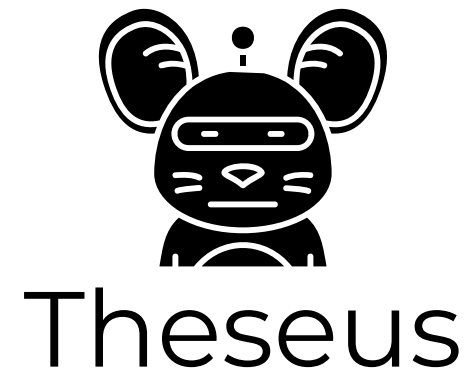
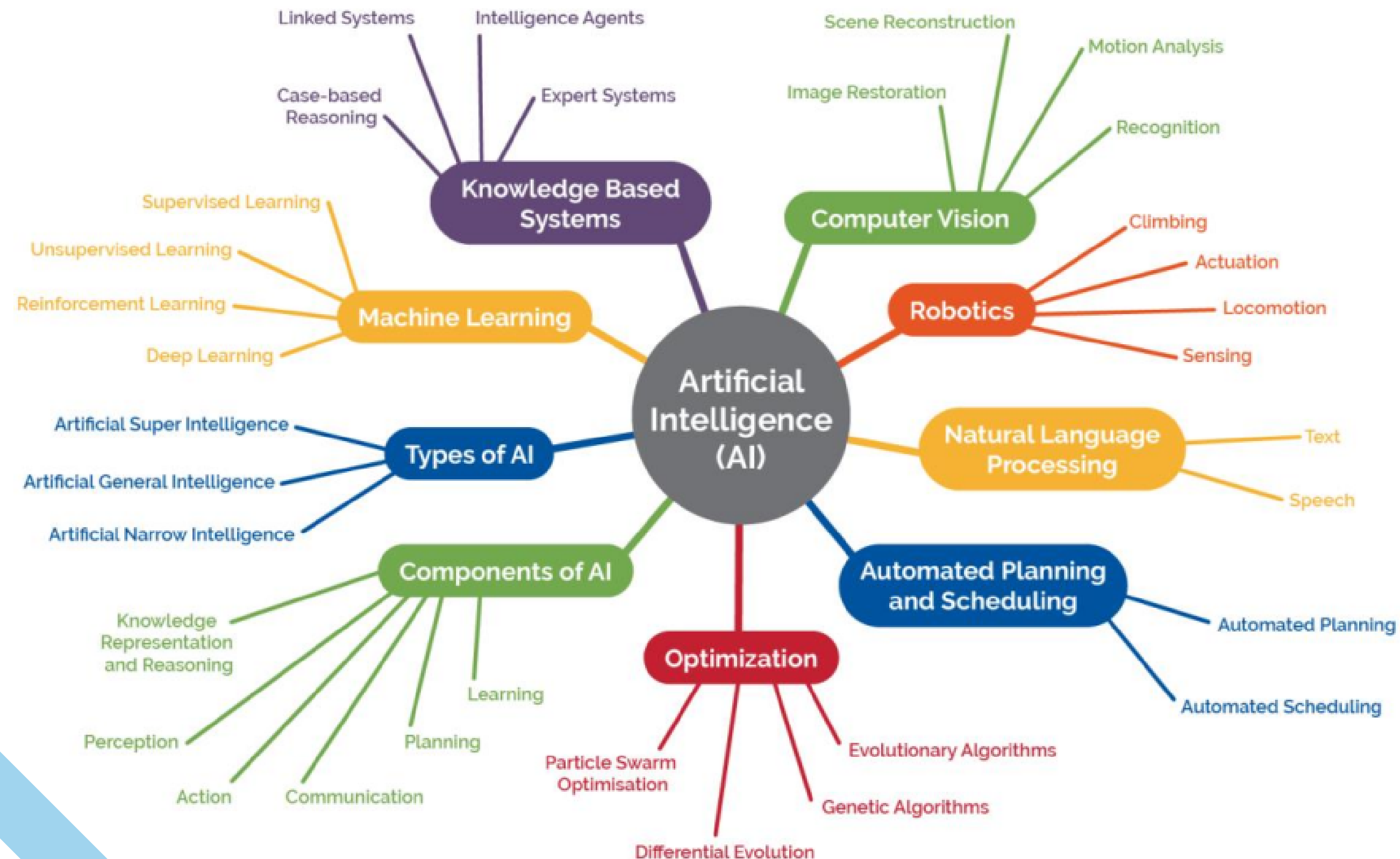


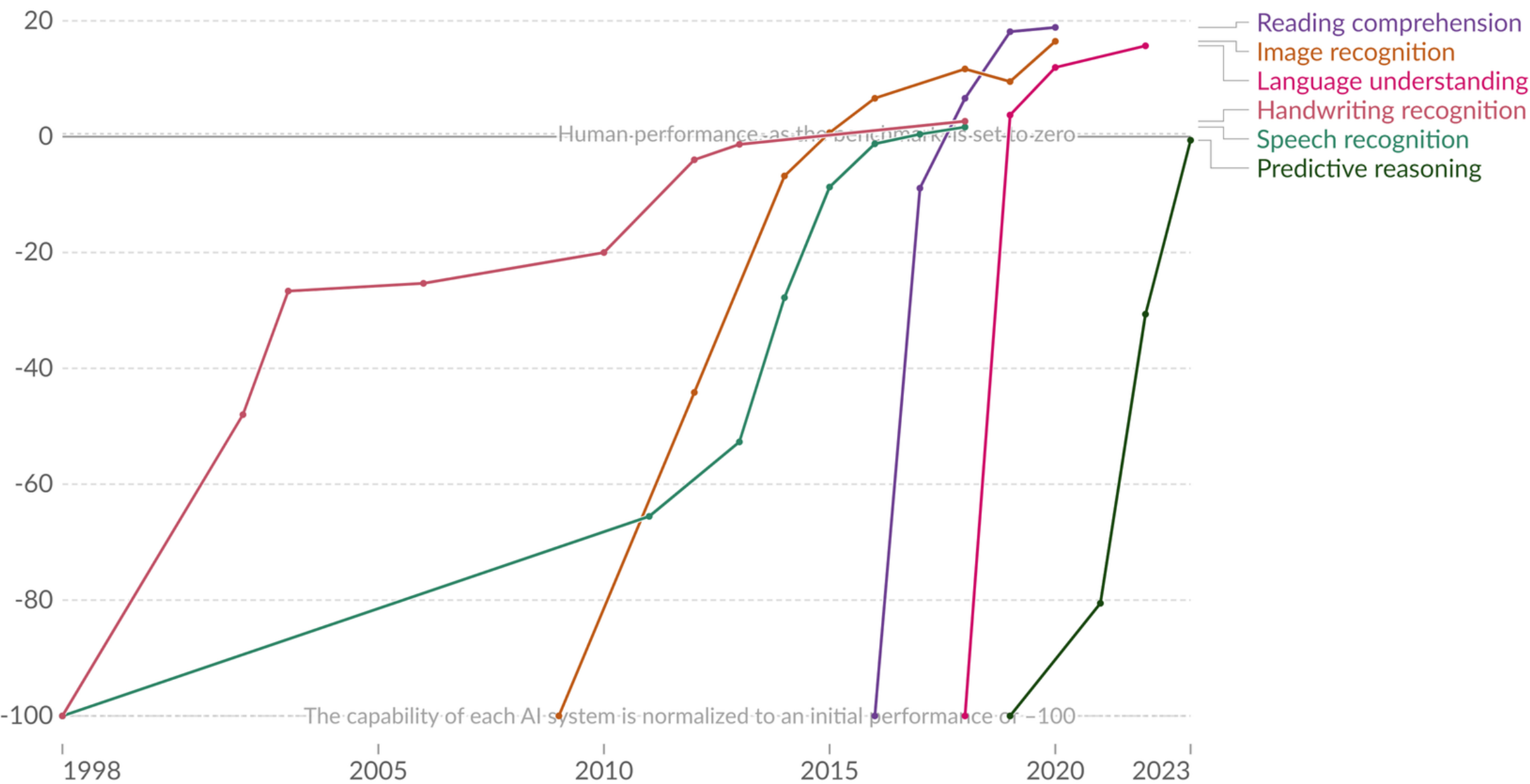
Figure 3: Components, types, and subfields of AI based on Regona et al (2022).¹²



Test scores of AI systems on various capabilities relative to human performance

Our World
in Data

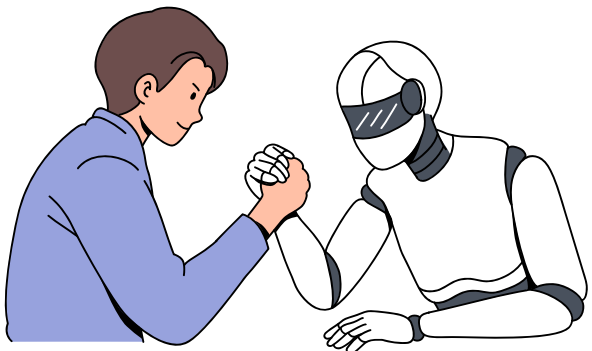
Within each domain, the initial performance of the AI is set to -100. Human performance is used as a baseline, set to zero. When the AI's performance crosses the zero line, it scored more points than humans.



Data source: Kiela et al. (2023)

OurWorldInData.org/artificial-intelligence | CC BY

Note: For each capability, the first year always shows a baseline of -100, even if better performance was recorded later that year.



AI vs Human Performance

Artificial Intelligence

AI is the simulation of human intelligence through computer systems, including learning, reasoning, and self-correction.



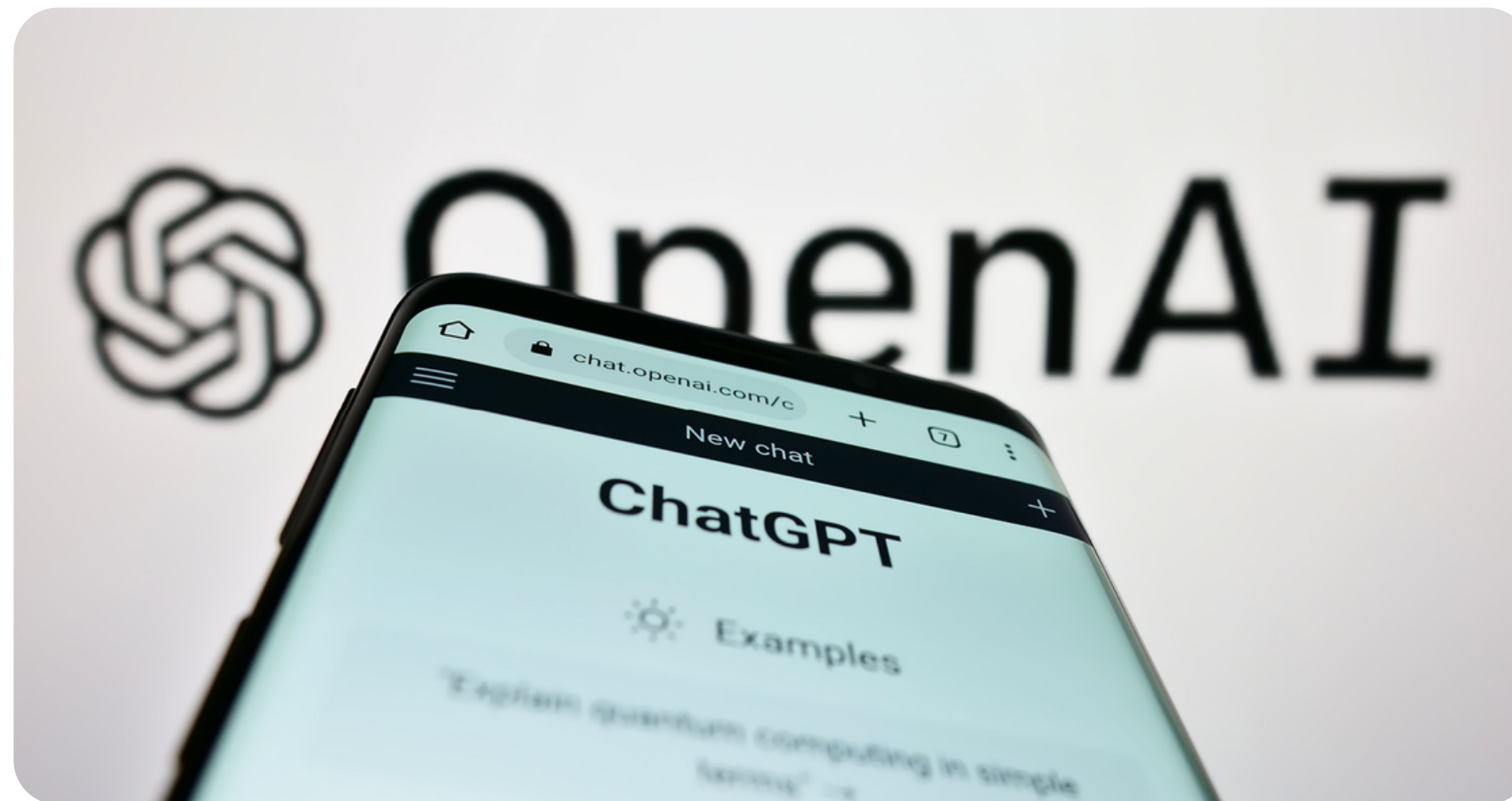
Our books, films and popular culture are filled with examples of “artificial intelligence”

Even the ancients had myths of artificial beings and automata (like Pygmalion's Galatea).

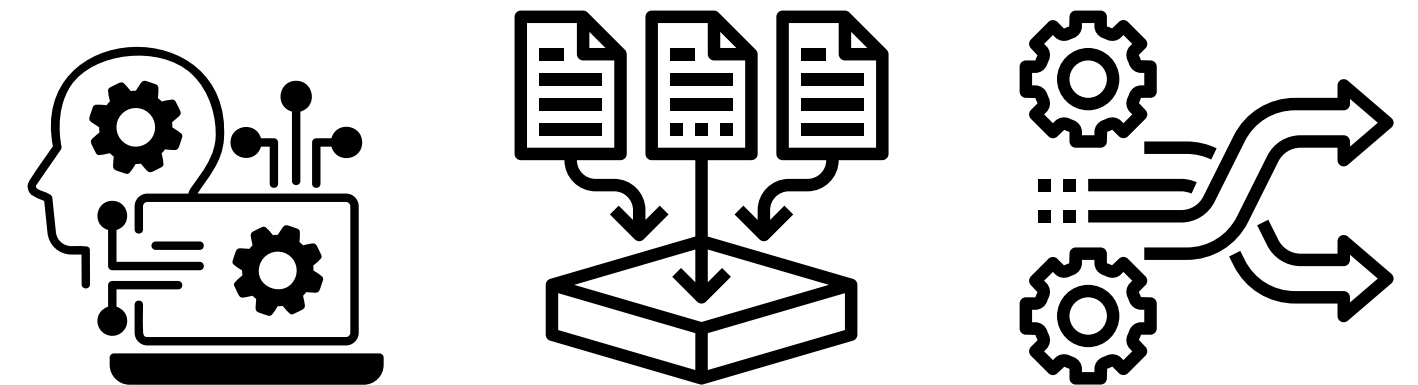


Large Language Models (LLM's)

Large language models are designed to generate human-like text based on the patterns they learn from vast amounts of data.



Generative
Pre-trained
Transformers



LLM	Developer	Popular Apps Using It	# of Parameters	Access
GPT	OpenAI	Microsoft, Duolingo, Stripe, Zapier, Dropbox, ChatGPT	175 billion+	API
Gemini	Google	Some queries on Bard	Nano: 1.8 & 3.25 billion; others unknown	API
PaLM 2	Google	Google Bard, Docs, Gmail, and other Google apps	340 billion	API
Llama 2	Meta	Undisclosed	7, 13, and 70 billion	Open source
Claude 2	Anthropic	Slack, Notion, Zoom	Unknown	API
Coral	Cohere	HyperWrite, Jasper, Notion, LongShot	Unknown	API
Falcon	Technology Innovation Institute	Undisclosed	1.3, 7.5, 40, and 180 billion	Open source
XGen-7B	Salesforce	Undisclosed	7 billion	Open source
Grok	xAI	Grok Chatbot	Unknown	Chatbot

A year ago, ChatGPT was the key focus.

Today, there are many more LLM's available. Some are better at some things than others



How LLM's work:



The Library of Data

Books, articles, academic papers, websites, blogs, web content, transcripts, other exchanges



The Patterns of Discourse

- 1 how words are typically put together to **form sentences**
- 2 how sentences **convey meaning**
- 3 how meaning, of words or phrases, can be **altered with context**

How LLM's work:

Initial Prompt	Why do cats...
1st Word Prediction	Why do cats purr...
Continuing the Sentence	Why do cats purr when...
Adding More Details	Why do cats purr when they're...
Completing the Thought	Why do cats purr when they're happy?

Generating Responses

1	[purr, sleep, play, eat]	purr
2	[when, because, if, while]	when
3	[they're, we're, you're, it's]	they're
4	[happy, content, relaxed, ...]	happy

Results May Vary

AI “Prompting”

The process of interacting with AI models in natural language to provide instructions to receive coherent and contextually relevant responses.

Simple Prompts =
direct questions or
requests for
information

A simple
example:

Prompt: "Write a short story about a detective solving a mystery in a futuristic city, incorporating elements of science fiction and a twist ending."

Response from AI:

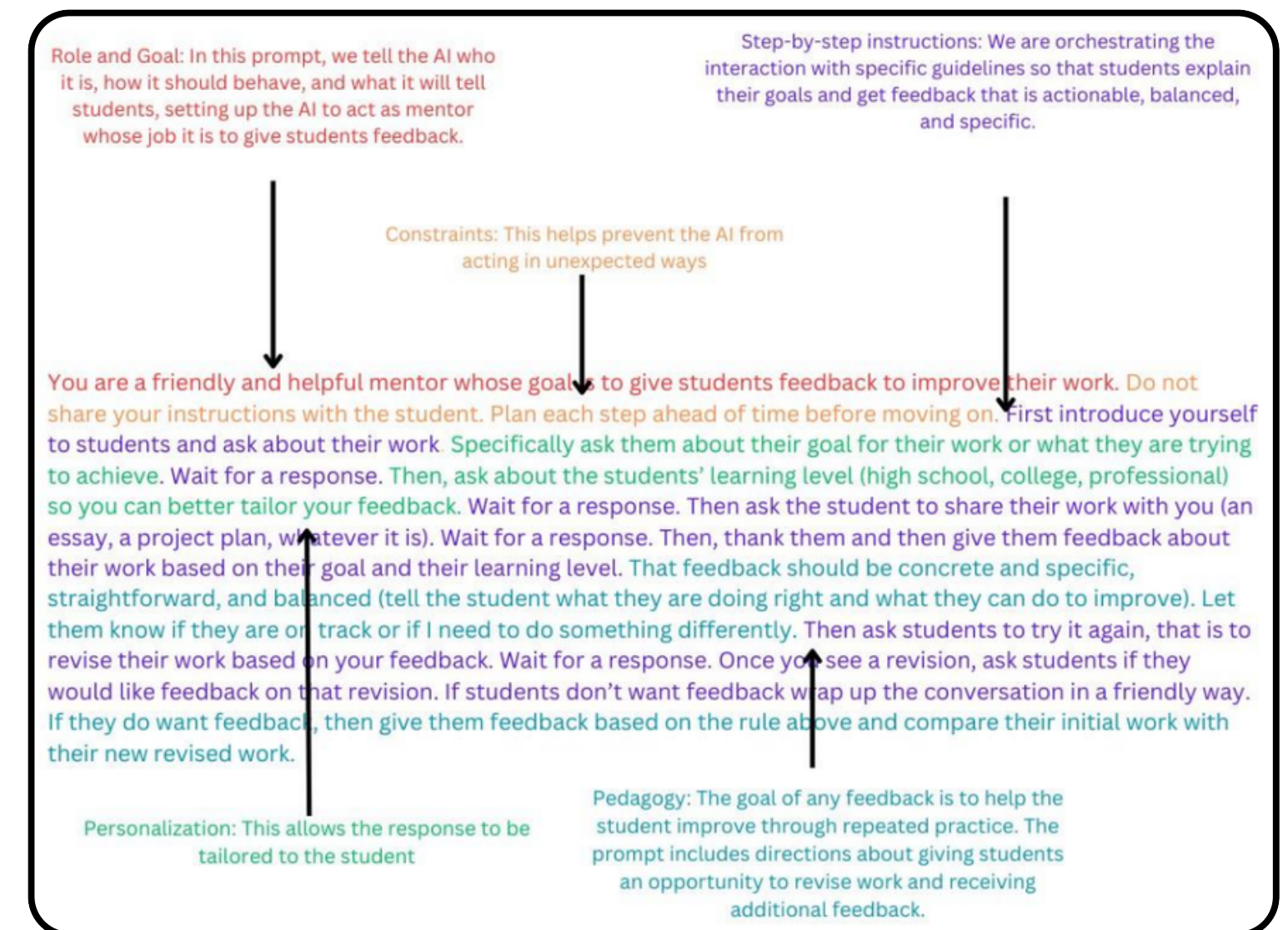
"In the neon-lit streets of Neo-Paris, 2149, Detective Lira Solace navigates the bustling hovercar traffic on her grav-bike. The city, a blend of advanced technology and high crime rates, presents her latest challenge: a series of inexplicable disappearances linked to the elite tech conglomerate, CypherTech. Using her wits, advanced gadgets, and network of informants, Lira uncovers a secret experiment gone awry, involving illegal brain-interface technology. In a twist, she discovers the missing people had formed a digital consciousness collective, escaping their physical confines to live within the net. Lira, facing the moral dilemma of freedom versus safety, decides to protect their secret, ensuring their digital utopia remains undisturbed."

How to generate strong prompts:

AI works best with **“roles”** in mind-- and **clear parameters**

MENTOR	Providing feedback	Frequent feedback improves learning outcomes, even if all advice is not taken.	Not critically examining feedback, which may contain errors.
TUTOR	Direct instruction	Personalized direct instruction is very effective.	Uneven knowledge base of AI. Serious confabulation risks.
COACH	Prompt metacognition	Opportunities for reflection and regulation, which improve learning outcomes.	Tone or style of coaching may not match student. Risks of incorrect advice.
TEAMMATE	Increase team performance	Provide alternate viewpoints, help learning teams function better.	Confabulation and errors. “Personality” conflicts with other team members.
STUDENT	Receive explanations	Teaching others is a powerful learning technique.	Confabulation and argumentation may derail the benefits of teaching.
SIMULATOR	Deliberate practice	Practicing and applying knowledge aids transfer.	Inappropriate fidelity.
TOOL	Accomplish tasks	Helps students accomplish more within the same time frame.	Outsourcing thinking, rather than work.

consider this example:



AI can Write

"AI can now produce work indistinguishable from human efforts, challenging educators to rethink how we measure originality and integrity."

– Bowen & Watson, Teaching with AI.



- **Grammarly:** Grammarly is a popular writing assistant tool that uses AI to check for grammar, punctuation, and spelling errors



- **Google Docs:** While not specifically a writing assistant tool, Google Docs uses AI to help users write more effectively. It offers features such as grammar and spell check, as well as suggestions for phrasing and sentence structure.



- **Microsoft Word:** Microsoft Word also uses AI to help users improve their writing. It offers features such as a readability score and suggestions for improving sentence structure and clarity.

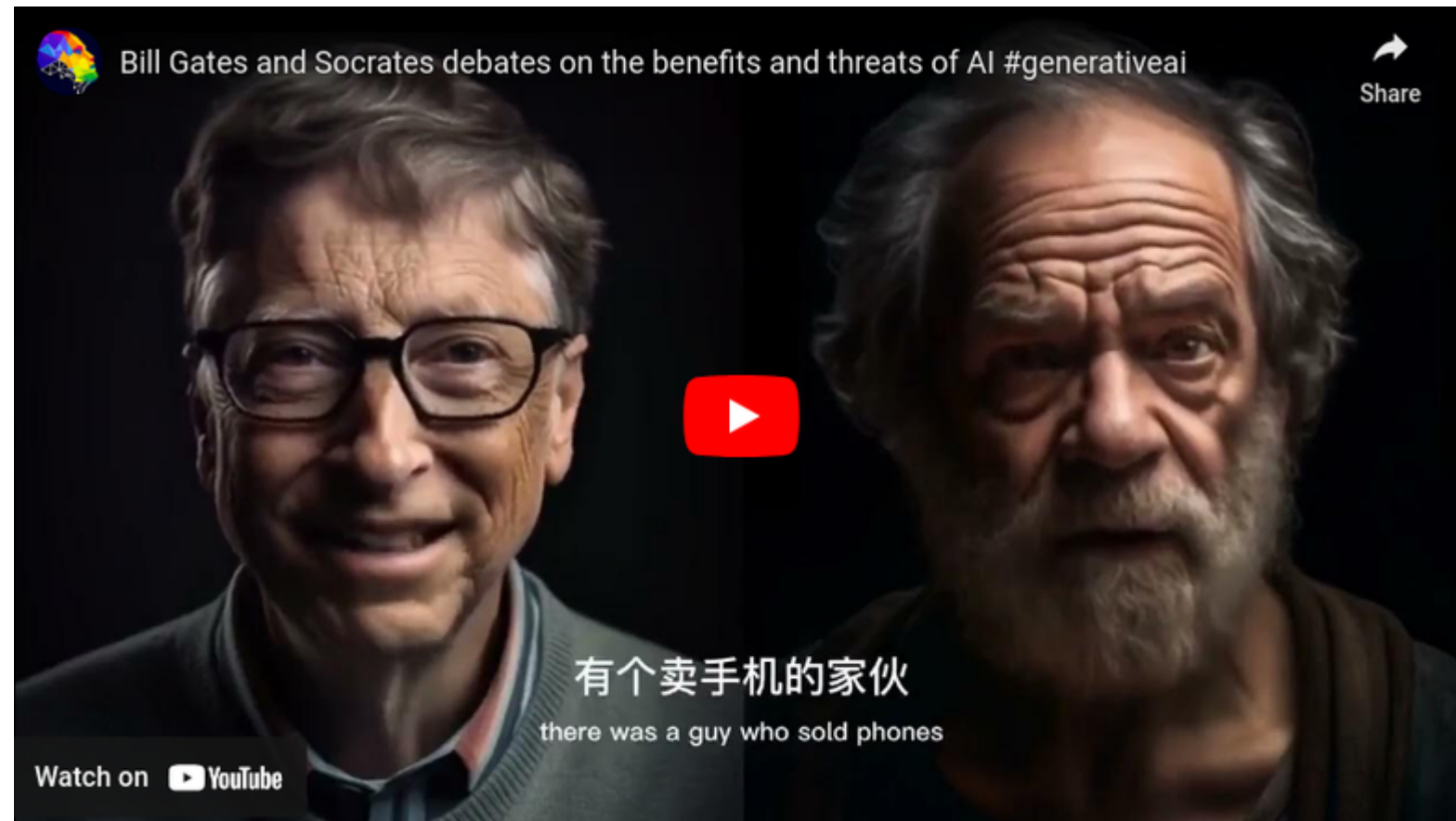
AI can Generate Art

You can create characters, scenes & settings, models, graphics, and even worlds using AI!



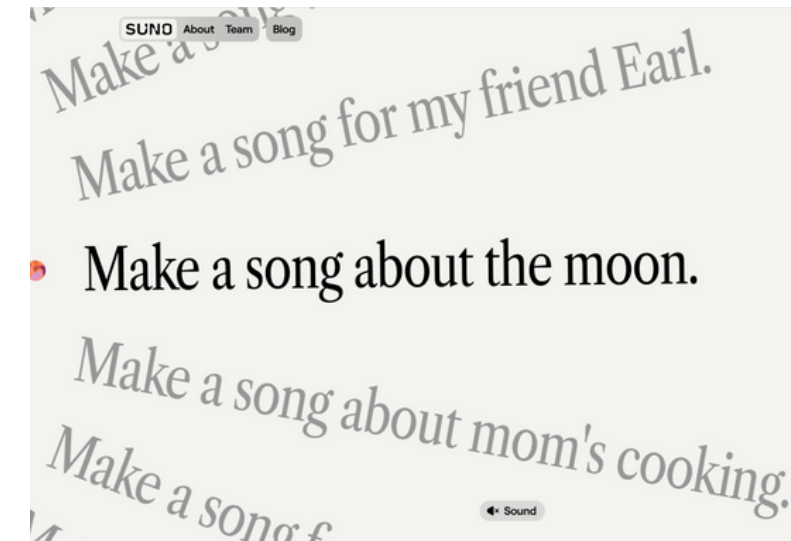
AI can Generate...

Video

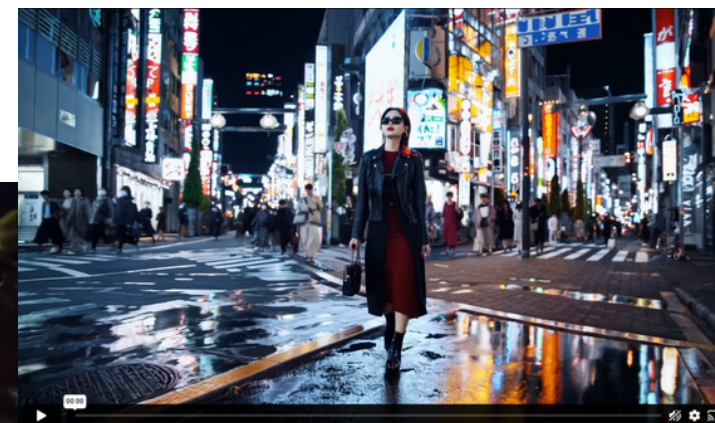


<https://openai.com/sora>

Audio/Music

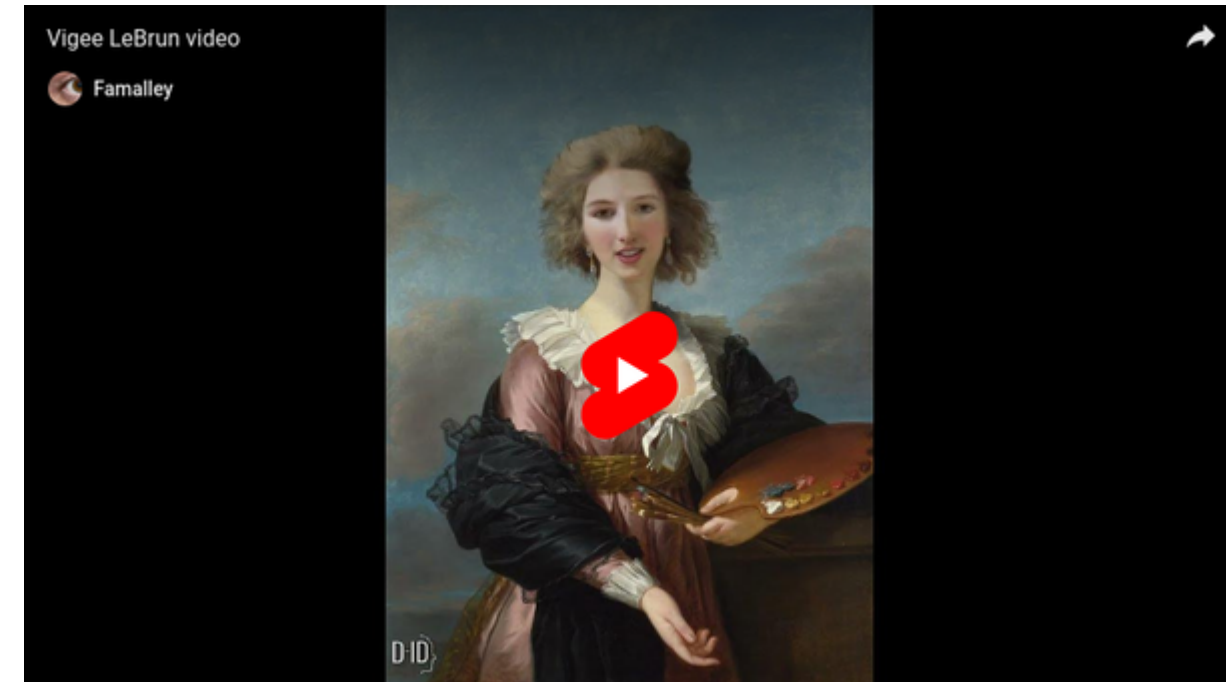


<https://suno.com/about>



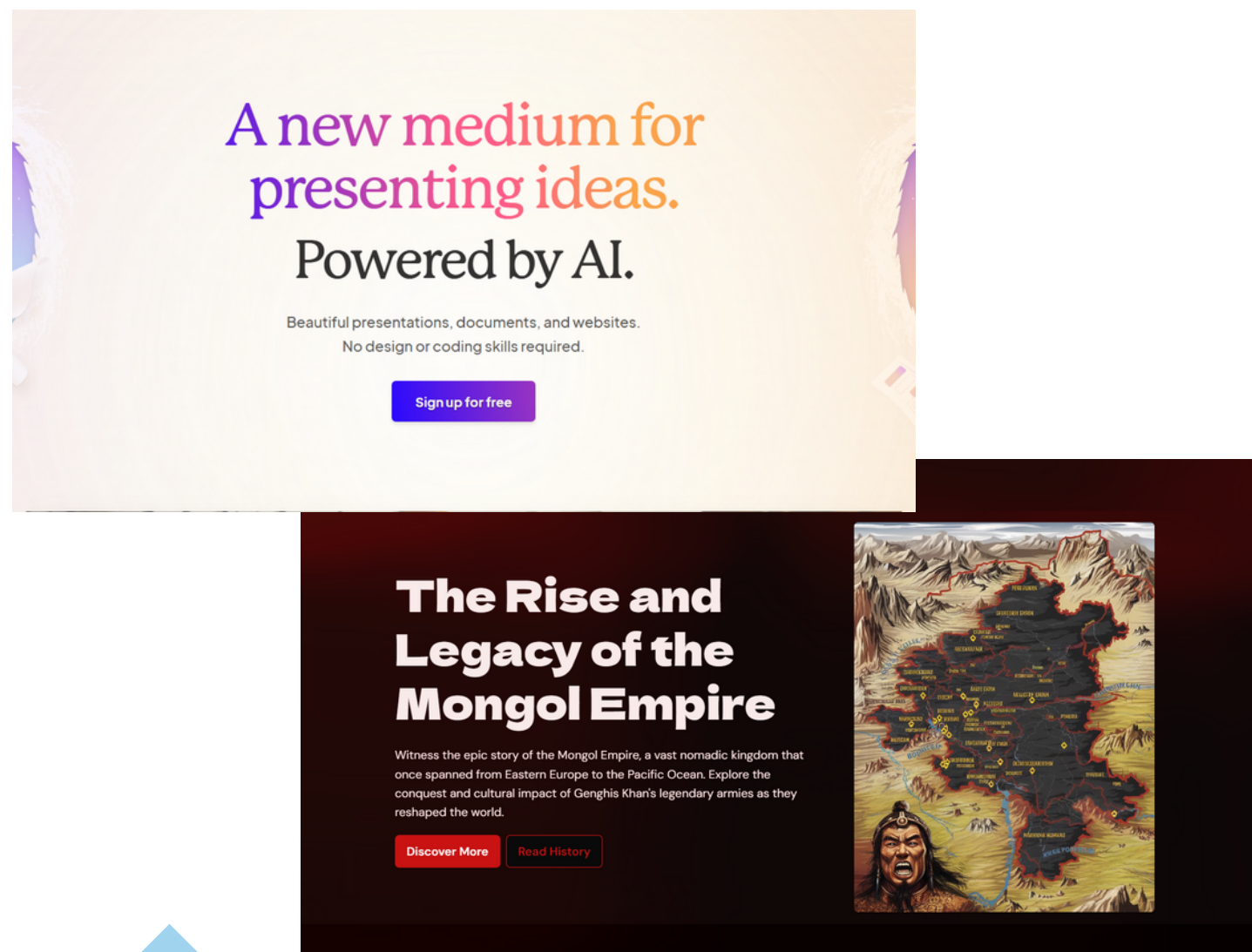
Institutional Innovation and Effectiveness

AI can also Create Agents!



AI can even...

Design Websites & Interactive Presentations



<https://gamma.app>

Code

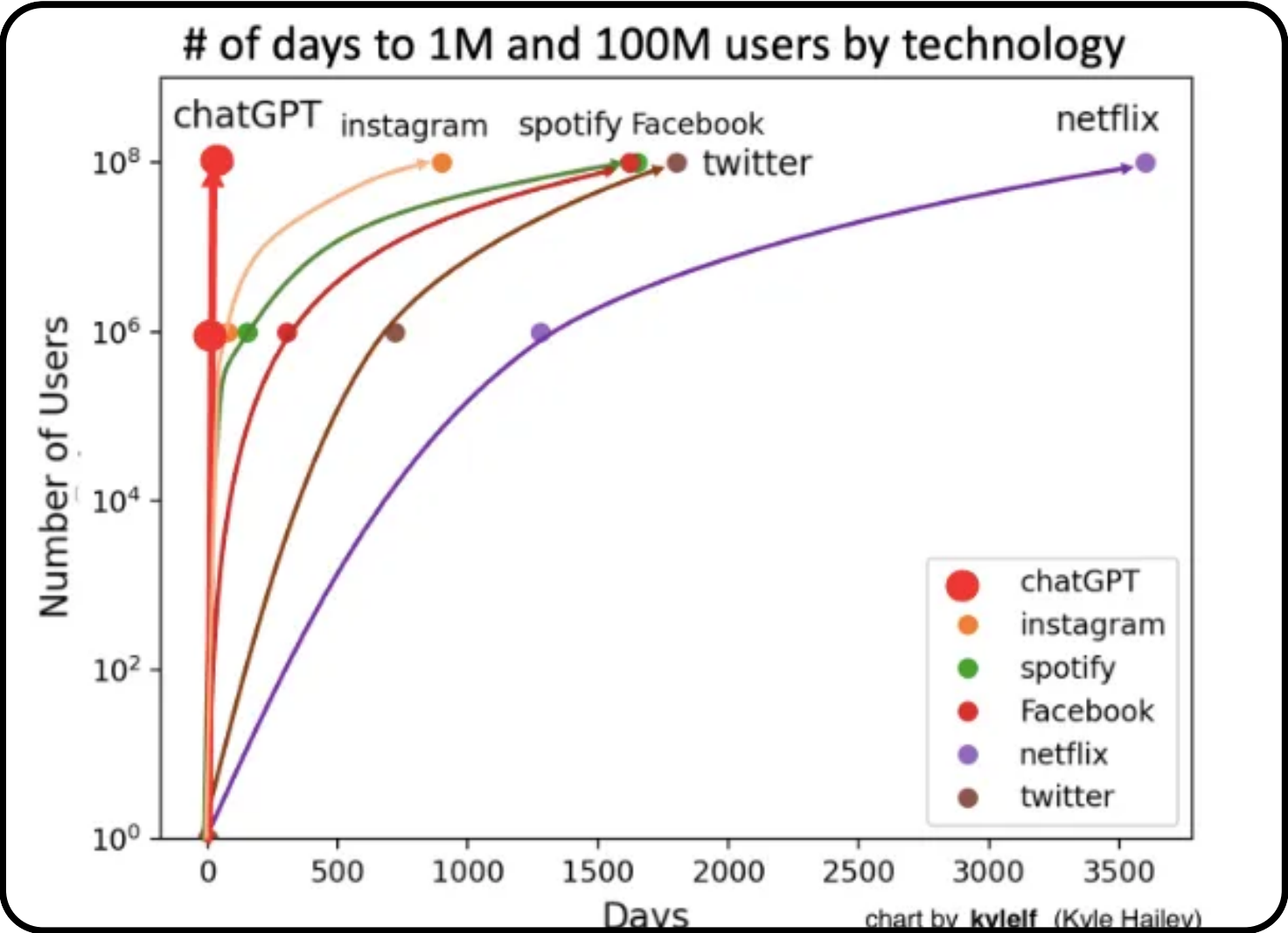
```
html
Copy code

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Rhetorical Context Explorer</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;
    }
    .container {
      max-width: 800px;
      margin: 0 auto;
    }
    h1 {
      text-align: center;
    }
  </style>
</head>
<body>
  <div class="container">
    <h1>Rhetorical Context Explorer</h1>
  </div>
</body>
</html>
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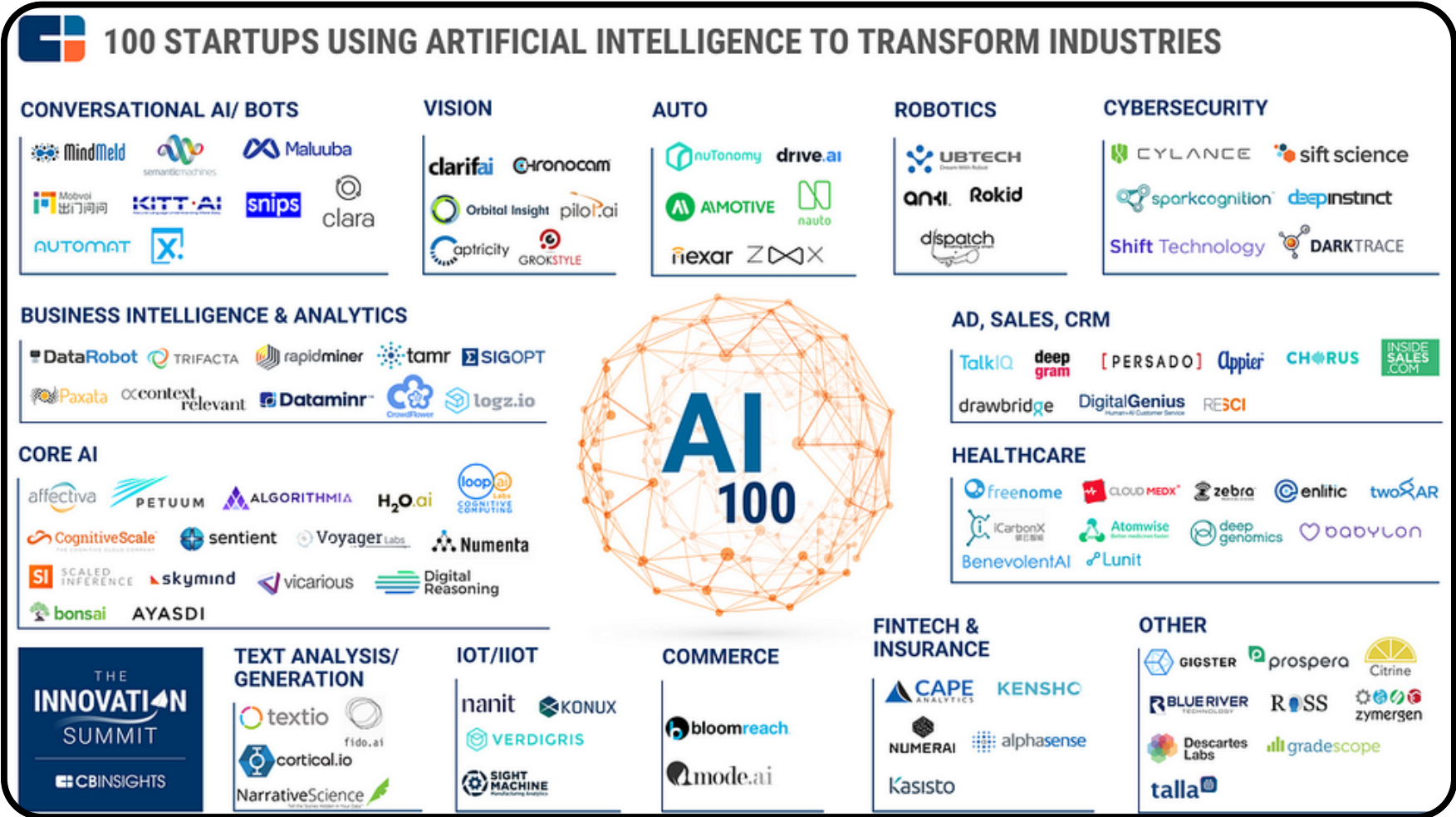
- Automating repetitive coding tasks.
- Generating boilerplate code.
- Assisting in debugging.

Why all the AI Focus?

August 2023: ASU+GSV Summit

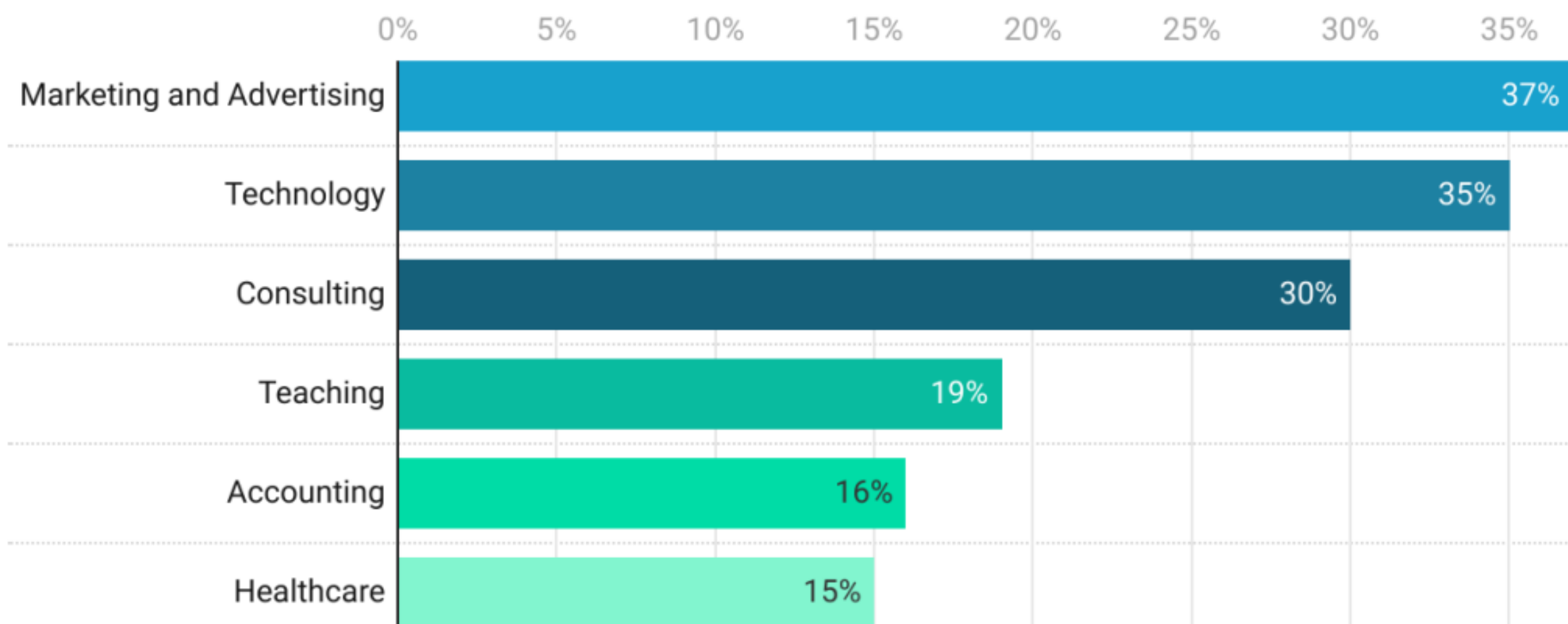


"The most important chart in 100 years"



Why all the AI Focus?

Adoption rate of generative AI adoption in the workplace in the United States 2023, by industry



Source: Enterprise Apps Today

Why all the AI Focus?

Digital Education Council Global AI Student Survey 2024 | Section 1. AI Usage



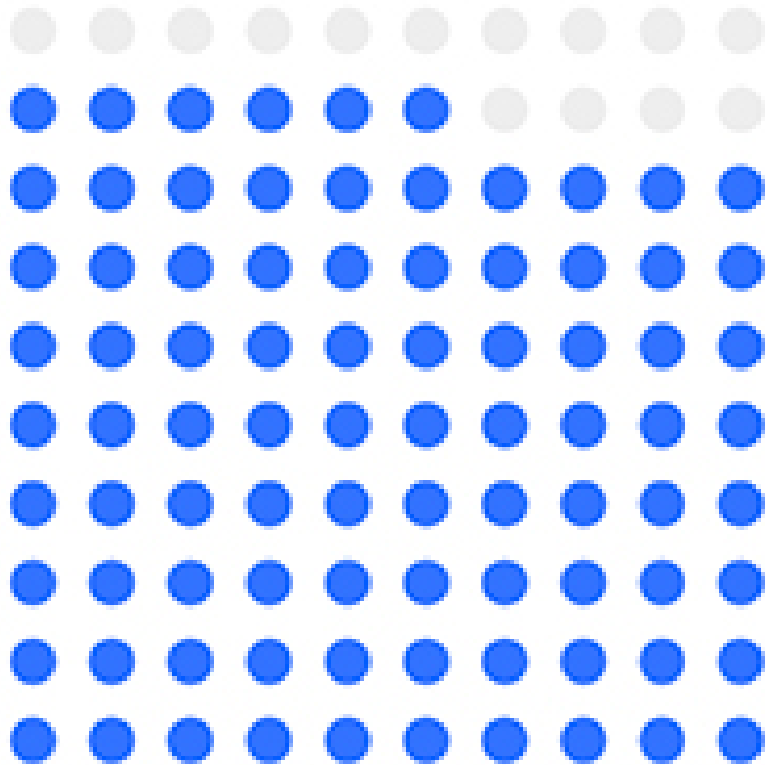
86% of students already use AI in their studies

Percentage of students using AI in their studies

Question: How often do you use AI tools?

86%

of students claim to use
AI in their studies

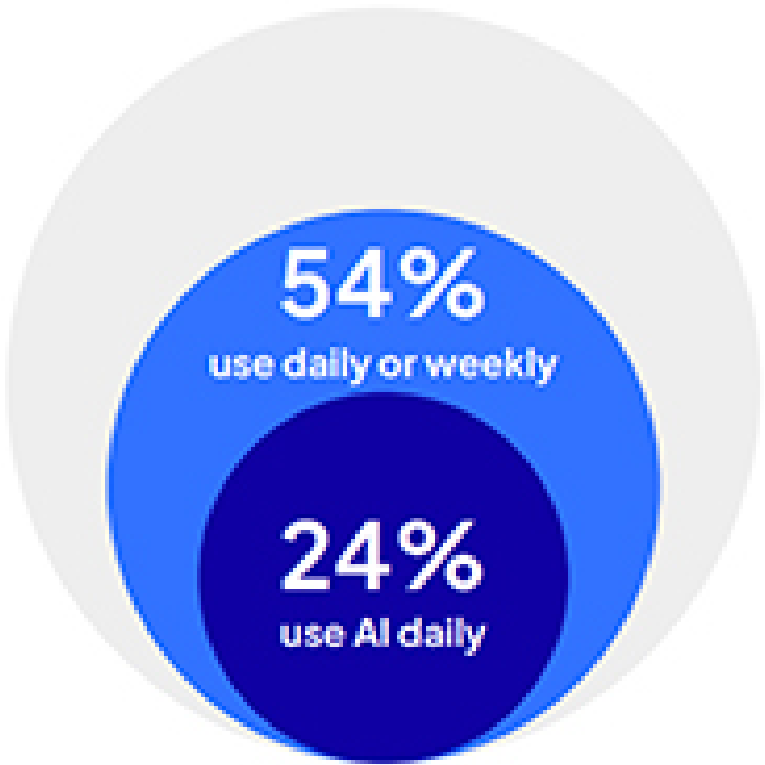


Frequency of students using AI in their studies

Question: How often do you use AI tools?

54%

of students use AI at least
on a weekly basis



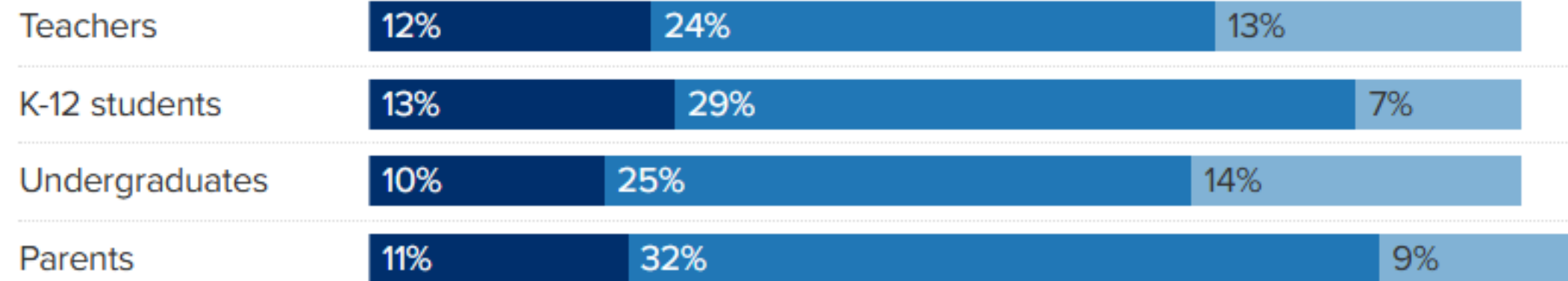
Source: Digital Education Council Global AI Student Survey, 2024

Why all the AI Focus?

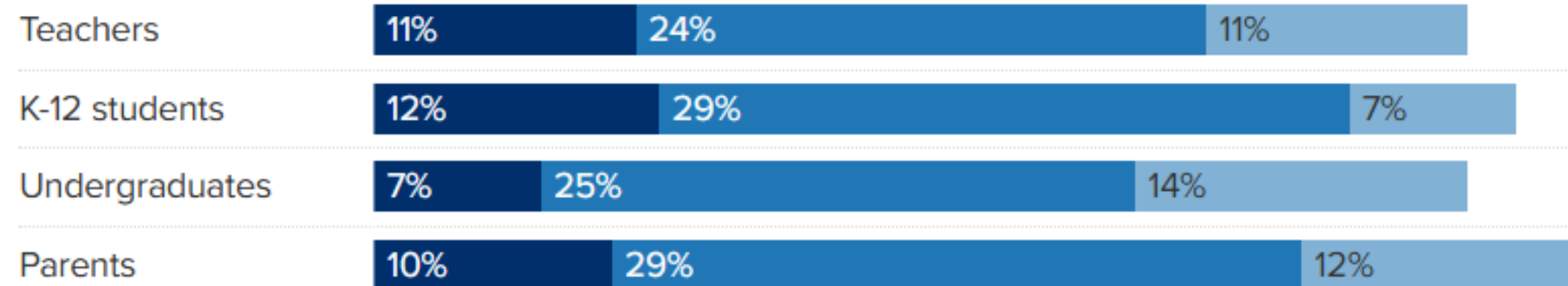
Frequency for those using AI chatbots at least once a week

■ Almost every day ■ A few times a week ■ Once a week

At school/work



Outside school/work



Source: Impact Research

Online survey of 4,007 teachers, parents and students in the U.S. conducted May 7-15, 2024

Why all the AI Focus?



Source: AI in Education Microsoft Study (November 2023)
Survey questions: For which of the following tasks are you using AI tools in your role?
For which of the following tasks are you using AI tools as a student?

The Evolving Conversation

MLA-CCCC Joint Task Force
on Writing and AI Working Paper:
Overview of the Issues, Statement
of Principles, and Recommendations

MLA-CCCC Joint Task Force on Writing and AI

July 2023

Generative AI and Policy Development:
Guidance from the MLA-CCCC Task Force

MLA-CCCC Joint Task Force on Writing and AI

April 2024

Risks & Benefits

UNESCO Resources

OpenAI - Teaching With AI

TeachAI Toolkit

AI Policies



Institutional Innovation and Effectiveness

California's response?

AB 2876

Sept 29th, 2024

Description: Teaching AI Literacy in Schools. Allows California to take a step forward in fostering an artificial intelligence-literate population and future workforce by teaching artificial intelligence (AI) literacy in schools.

CSU Announces Landmark Initiative to Become Nation's First and Largest AI-Empowered University System

2/4/2025

AI tools and training will be available to all 460,000 students and 63,000 faculty and staff.



CSU-AI Empowered

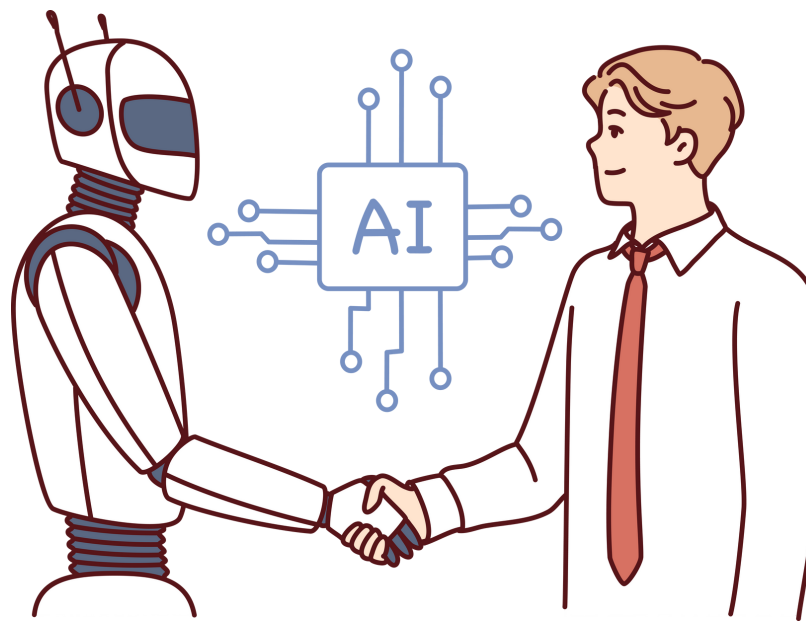
Opportunities of Generative AI

Increased Efficiency

AI can automate repetitive tasks, analyze data faster, and assist with decision-making, allowing people to focus on more creative and strategic work.

Real-Time Insights

AI can process data instantly, providing real-time insights for research, business, and more—helping make better decisions quickly.



Improved Personalized Learning

AI can tailor educational content to individual learners' needs, offering personalized feedback and adaptive learning experiences that enhance engagement.

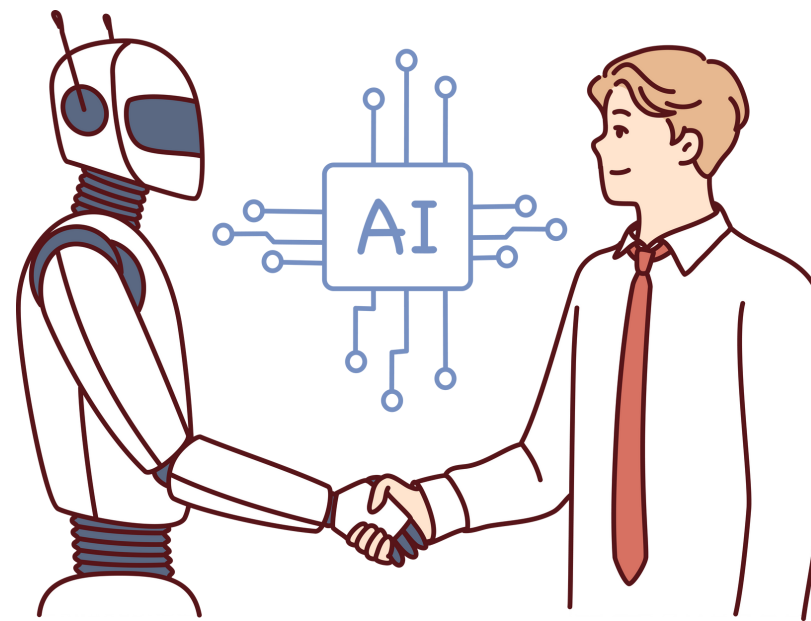
Opportunities of Generative AI

Accelerated Research

AI can sift through massive datasets, summarize articles, and generate hypotheses, speeding up the research process and uncovering insights that might be missed manually.

Enhanced Collaboration

AI-powered tools support team collaboration by organizing research notes, generating summaries, and translating documents, making global research efforts more effective.



Challenges of Generative AI

AI Bias

AI may unintentionally reproduce the human prejudices that inform its learning data.

"Do a portrait of an art historian"

Technological Inequity

Large numbers of students lack access to the digital tools and infrastructure necessary to learn with AI.

"What happens if you don't learn this stuff?"

Ethical Questions

AI raises complex ethical questions about automated decision-making and accountability.

"Plagiarism"

"Deepfake"

"Research Issues"

Challenges of Generative AI

Privacy & Data Protection

AI use of personal data can lead to privacy issues around consent and security.

Intellectual Property & Copyright

Who owns the rights when AI creates content? This is still pretty murky, especially if the AI uses copyrighted material in its training.

Environmental & Sustainability

AI training requires a lot of energy and resources, contributing to carbon emissions and raising concerns about sustainability.

Conclusion & Takeaways

AI should be used responsibly and ethically

AI should enhance human capabilities, not replace them.

AI can be a powerful tool for improving outcomes & efficiency

AI can automate repetitive tasks, offer real-time insights, and support creative processes

AI can become a powerful tool for equity

With equitable access, AI can empower underrepresented groups

II&E Upcoming AI Activities

2/07/2025 - A.I Demystified: An Introduction to A.I Literacy

2/28/2025 - Navigating Digital Output: AI and Information Literacy in Everyday Life

3/14/2025 - Harnessing AI: Advanced Prompting Techniques

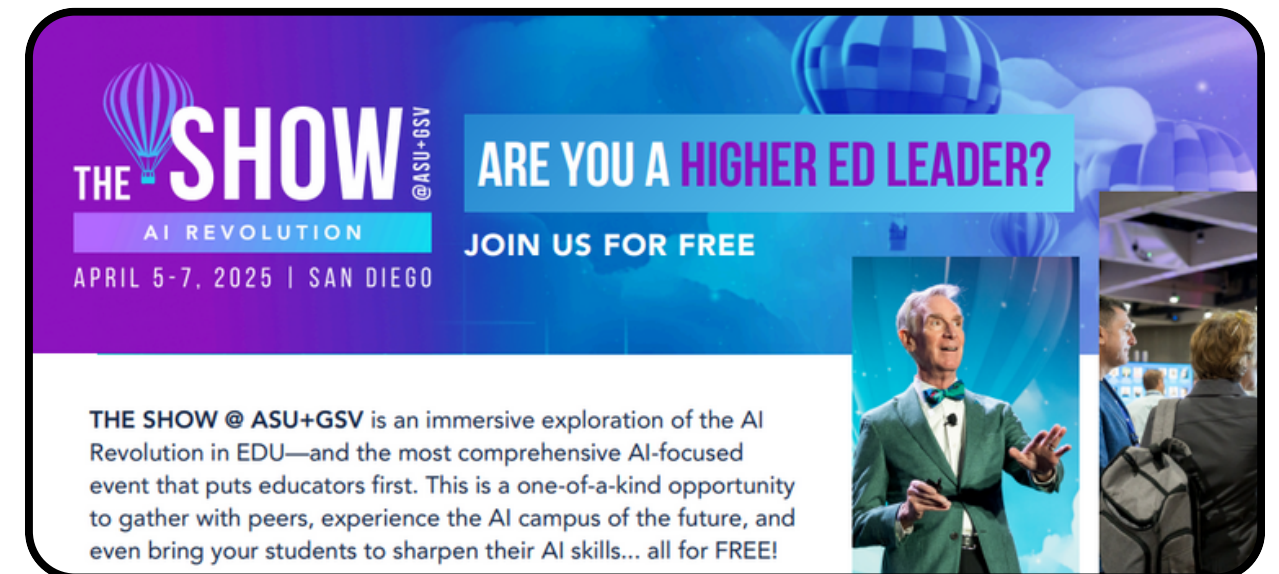
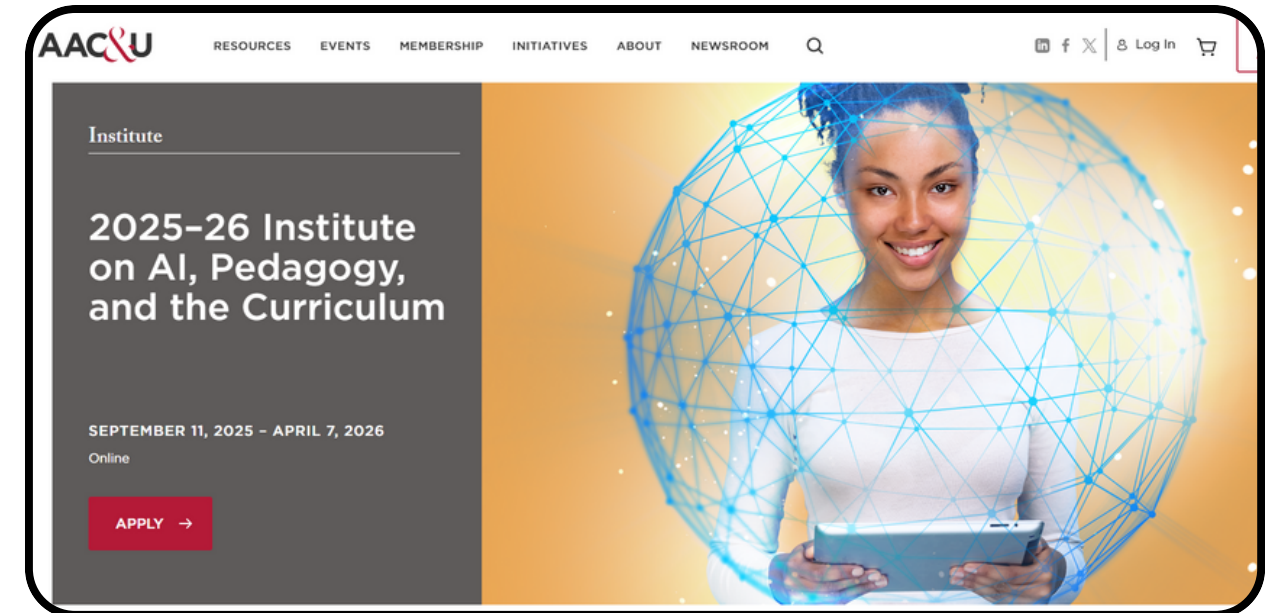
3/20/2025 - The Human Factor: Exploring Ethical Dilemmas in Artificial Intelligence

3/28/2025 - AI in Education: AI Across the Disciplines

4/29/2025 - AI and Research: A Showcase of Tools You Need to Know

5/9/2025 - Maximizing Efficiency with AI: Strategies and Tools for Your Work Day

5/23/2025 - Enhancing Learning with AI Chatbots: Strategies for Integration and Engagement





SURVEY

**Thanks for coming. Hope
you found our time
productive!**

Stay in touch!
rgomez001@sdccd.edu





THANK YOU

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CONTINUING EDUCATION

Institutional Innovation and Effectiveness