

The How, What, and Why of AI: A Blueprint for Embracing and Integrating AI



@phintz



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Let's begin with a few definitions...

- **A.I.:** Artificial Intelligence is a branch of computer science. AI systems use hardware, algorithms, and data to create “intelligence” to do things like make decisions, discover patterns, and perform some sort of action.
- **Predictive AI:** refers to systems and models that use historical data to predict future outcomes or behaviors. These predictions can be about a wide range of topics, from predicting stock market trends and weather forecasts to predicting a user's next move in a digital environment or a potential equipment failure in industrial settings.
- **Generative AI:** is artificial intelligence capable of generating text, images, or other media, using generative models. Generative AI models learn the patterns and structure of their input training data and then generate new data that has similar characteristics.
- **Chat-based generative pre-trained transformer (ChatGPT):** “A system built with a neural network transformer type of AI model that works well in natural language processing tasks.”

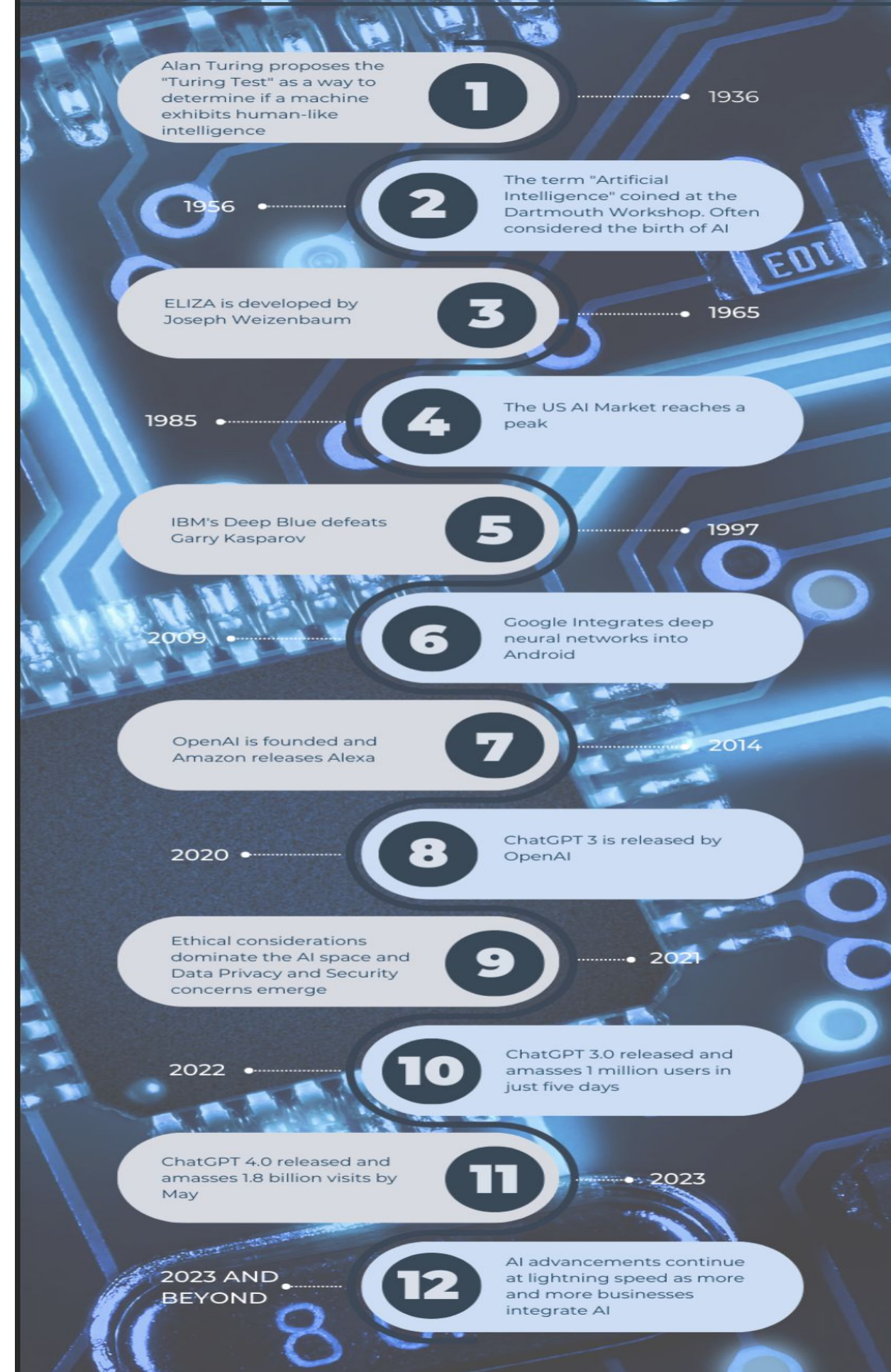


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The Evolution of Artificial Intelligence...



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We've Been Consuming AI for Years

NETFLIX

Show Suggestions



BANK OF AMERICA

Fraud Detection

amazon.com
Prime

Shopping Suggestions

Gnest

Intruder Detection via
Cameras



Fall/Crash Detection
and Health Monitoring

The Term "Artificial Intelligence" was coined at the Dartmouth Workshop in 1956, often considered the Birth of Artificial Intelligence.



OURA

Health Monitoring



TESLA
Autonomous
Cars



Facial Recognition



Google Maps

Traffic Monitoring and
Route Optimization



Hey Siri

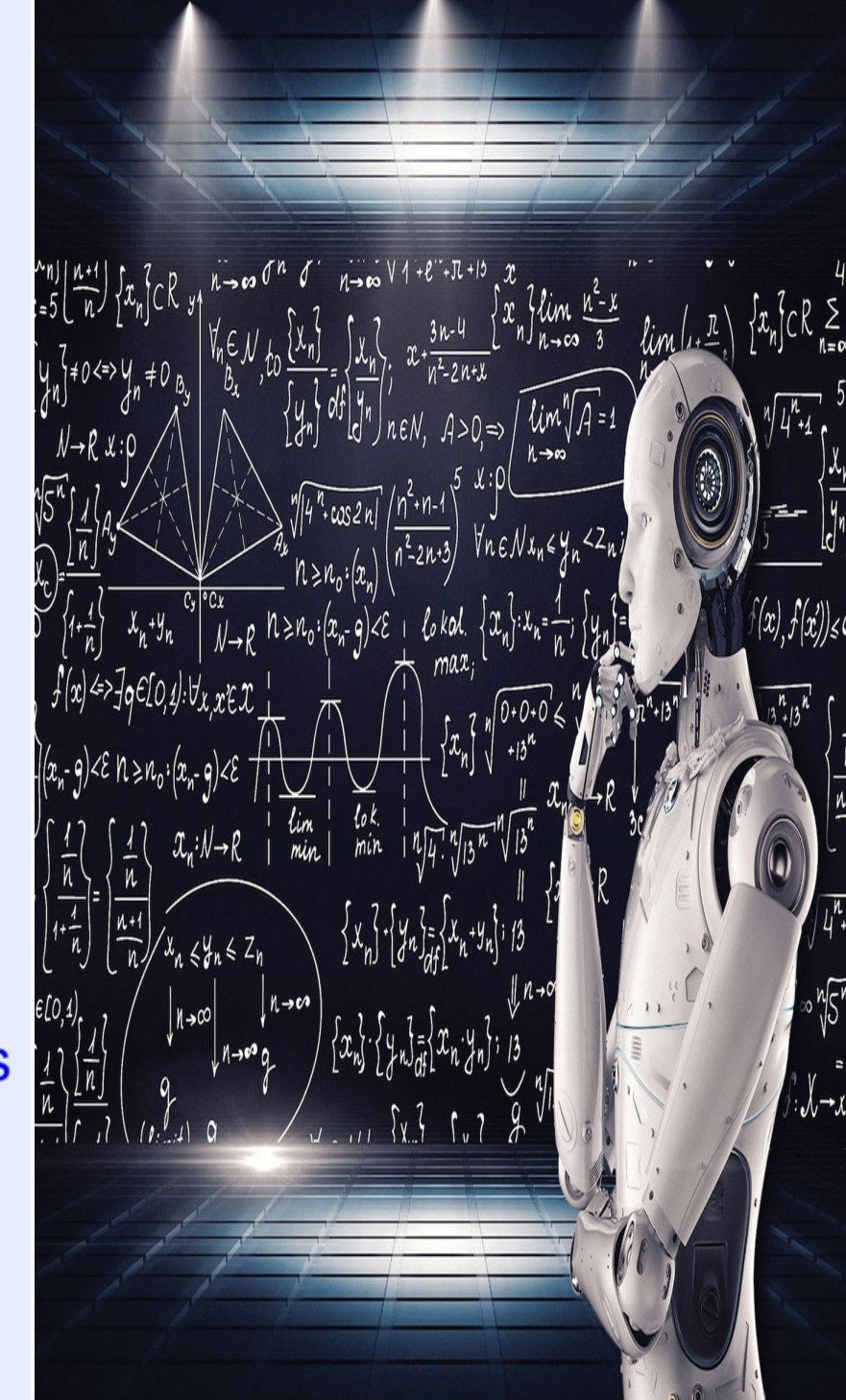
AI Assistance

iRobot
Roomba®
AI Scanning



Norton

AI Threat Detection



2024
ANNUAL
CONFERENCE

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Threads Shoots Past One Million User Mark at Lightning Speed

Time it took for selected online services to reach one million users



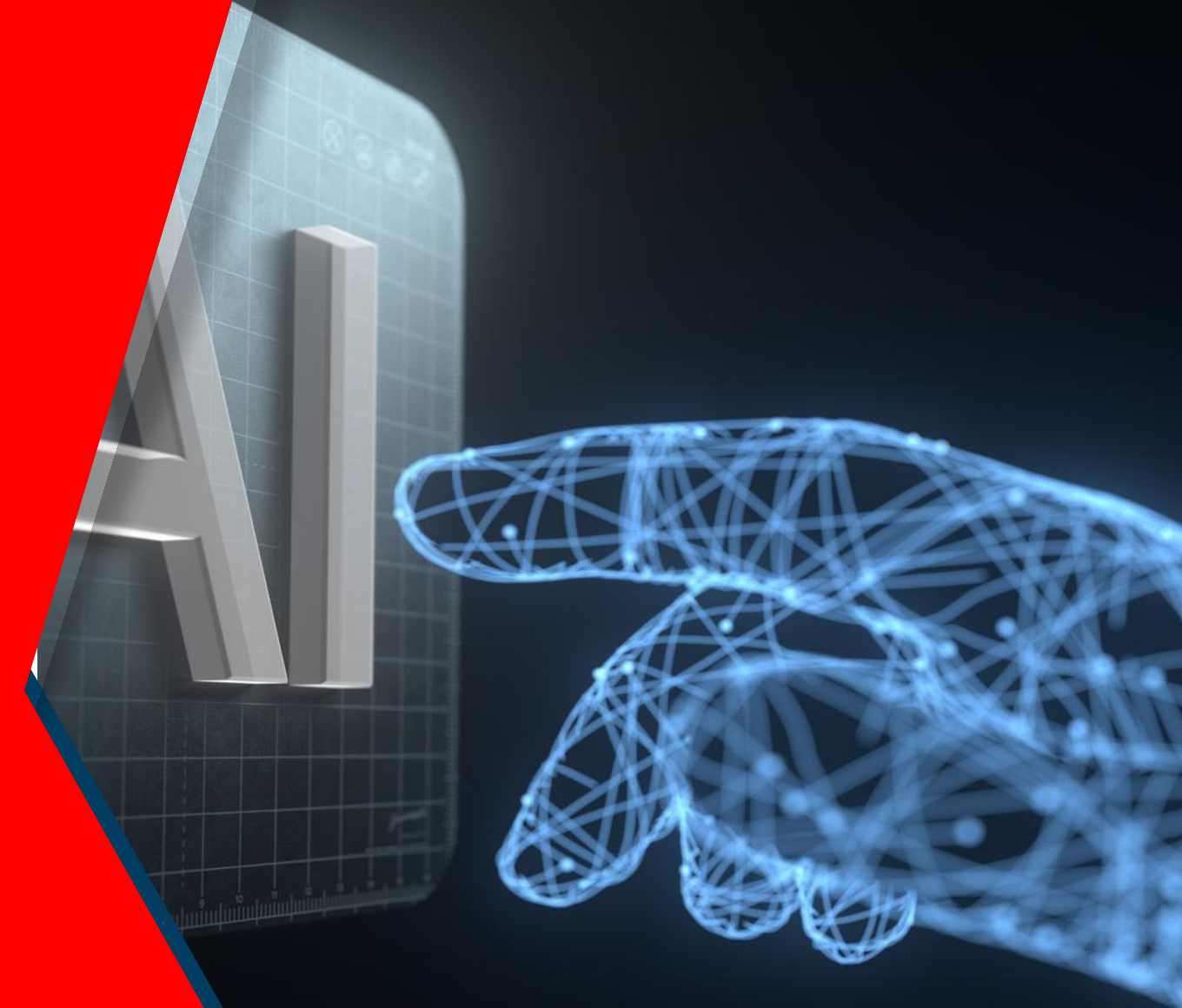
Refers to one million backers (Kickstarter), nights booked (Airbnb), downloads (Instagram/Foursquare)

* Two million signups in two hours

Source: Company announcements via Business Insider/LinkedIn



statista



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Call to Action



Karim R. Lakhani is the Dorothy & Michael Hintze Professor of Business Administration at the Harvard Business School. He is specialized in technology management, innovation, digital transformation, and **artificial intelligence**.

<https://hbr.org/2023/08/ai-wont-replace-humans-but-humans-with-ai-will-replace-humans-without-ai>



Artificial Intelligence won't **REPLACE** humans, but humans **WITH** artificial intelligence will replace humans **WITHOUT** Artificial Intelligence.



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AI's Role for Teachers and Schools...

- AI has the potential to bring efficiencies to every aspect of education, including teachers, administrators, and support staff.
- With the power of AI systems, tasks traditionally done manually, often taking hours or days, can be done in a matter of minutes with AI-powered systems.
- School districts must be strategic in identifying the tools that have the potential to bring efficiency to operational tasks, allowing all employees to spend more time supporting schools and ultimately students.

AI Increases Efficiencies

Learning Analytics

Continuous Improvement

Attendance Management

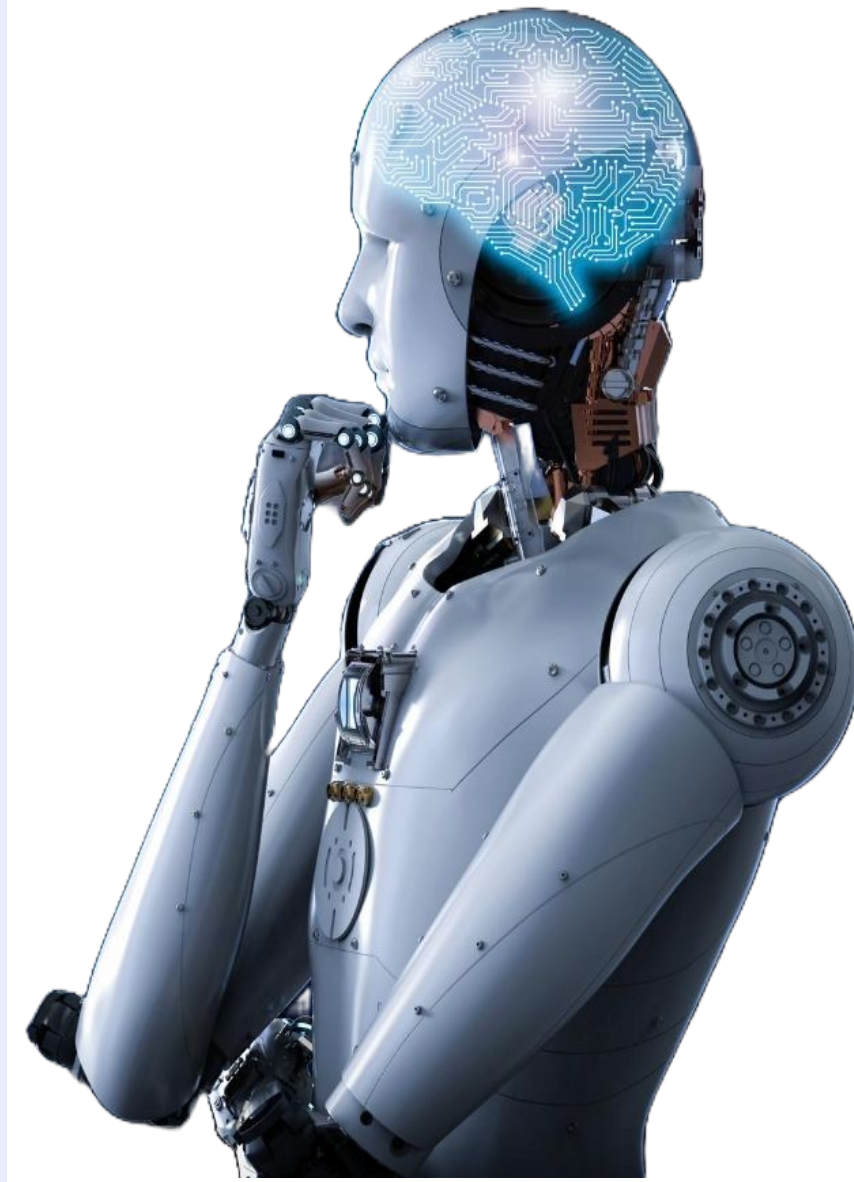
Behavior Analytics and Management

Scheduling and Planning

Communication Automation

Resource Management

Parent Engagement

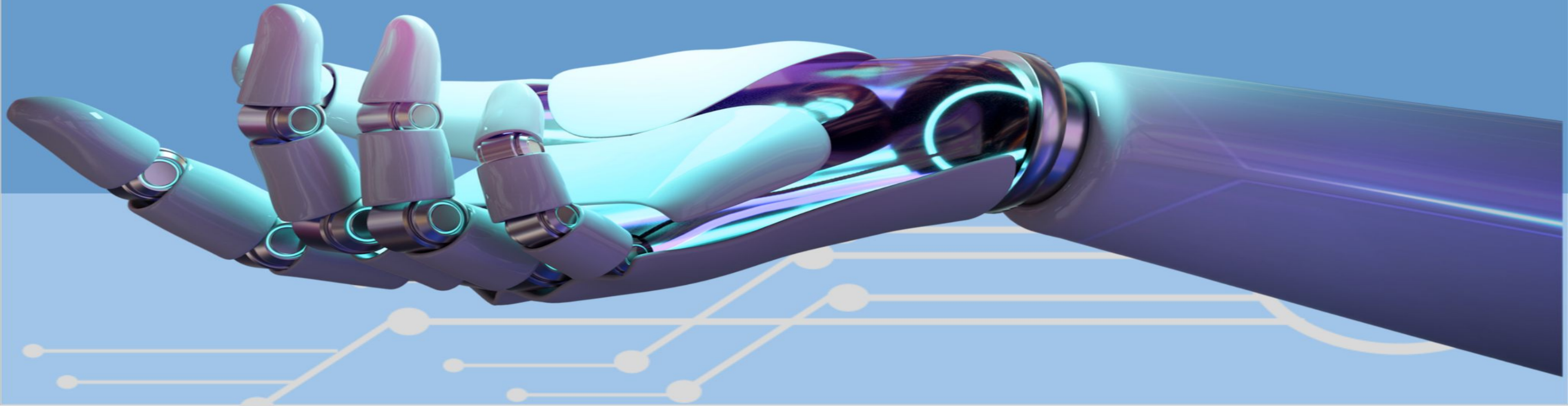


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Is your school district developing policies, procedures, or guidelines for using AI tools?



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Facts about AI:

- AI already in use across sectors
- AI is on a path of improvement and impact
- Ban/Block does not prevent student access from their devices
- These tools will be prevalent in our student's future
- AI already embedded in many tools we already use-will continue to expand



Consider:

- How does ChatGPT align with our values as a district?
- What is our responsibility to students for guidance regarding AI tools?
- What decisions will preclude an adversarial relationship with our students?
- If we block it, students will use without any guidance or support from adults to use it well.
- What is realistic impact on cheating and security?
- How might we use this as an opportunity to teach AI ethics, as aligned to digital literacy?
- What are the equity implications of embracing vs. blocking this tool or others like it?



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HOW DO YOU CLASSIFY YOURSELF?

Guardian

Cautious to implement any technology without thorough research. Prioritizes the emotional and social safety of students and educators, and aims to preserve authenticity when implementing technology. Concerned about academic integrity, bias, and data security when thinking about AIxEDU

Innovator

Willing to take risks, knowing failure is imminent. They are the guinea pigs. Enthusiastic about implementing any new technology or approach—our beta testers, likely using AI daily (either personally or in their workflows)

Analyst

They research, ask questions, and do the work to provide answers and guidance to our guardians, innovators, and passengers. They are staying informed, digging into literature, and eager to learn. They collect all of the facts before they problem solve.

Passenger

Passengers are focused on doing what they know best with the resources at their disposal. They're waiting for the innovators, guardians, and analysts to reach a consensus on how to move forward. Passengers are ready to act once given a ship to board.



WORK SMARTER

AI is like an electric bike. It uses and enhances human power to help get you over the more difficult areas of the terrain or simply make your experience easier. AI helps with those difficult tasks that so often burden administrators and teachers, but are still necessary to perform.



IS AI USHERING IN THE 4TH INDUSTRIAL REVOLUTION?



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KEY TURNING POINTS IN DEVELOPMENT AND INNOVATION

Industry 1.0

Water and Steam
Power for
Mechanization



Industry 2.0

Introduction of
Electricity yielding
to mass
production



Industry 3.0

IT and the internet
digitizes production,
distribution and
services



Industry 4.0

Application of AI,
ubiquitous Digital
Networks & Cyber
Physical Systems



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AI EXPLOSION

Are we Preparing our Students for Industry 4.0 workforce?



The AI market is projected to reach 407 Billion by 2027



75% of consumers are concerned about misinformation from AI



400 million workers could be displaced by AI



97% of business owners believe ChatGPT will help their business



AI EXPLOSION

Are we Preparing our Students for Industry 4.0 workforce?



37% of businesses and organization employ AI



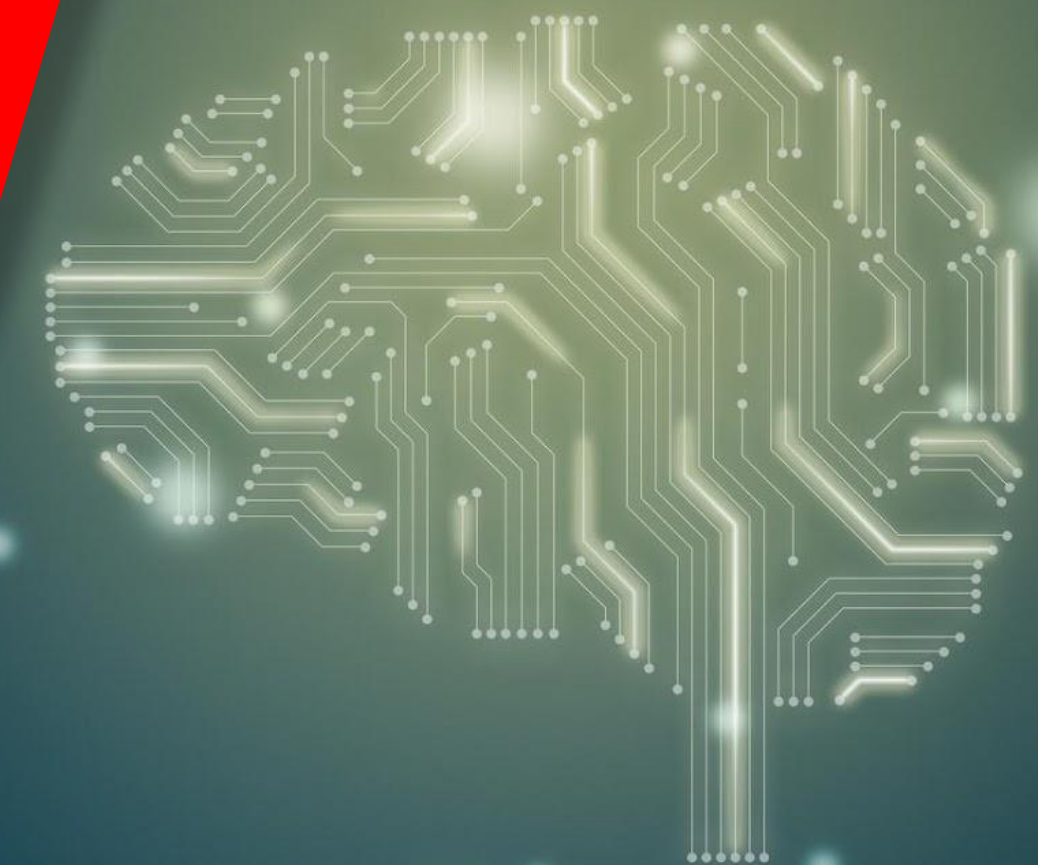
The rise of AI will eliminate 85 million jobs and create 97 million by 2025



Nine out of ten leading businesses have investment in AI Technologies



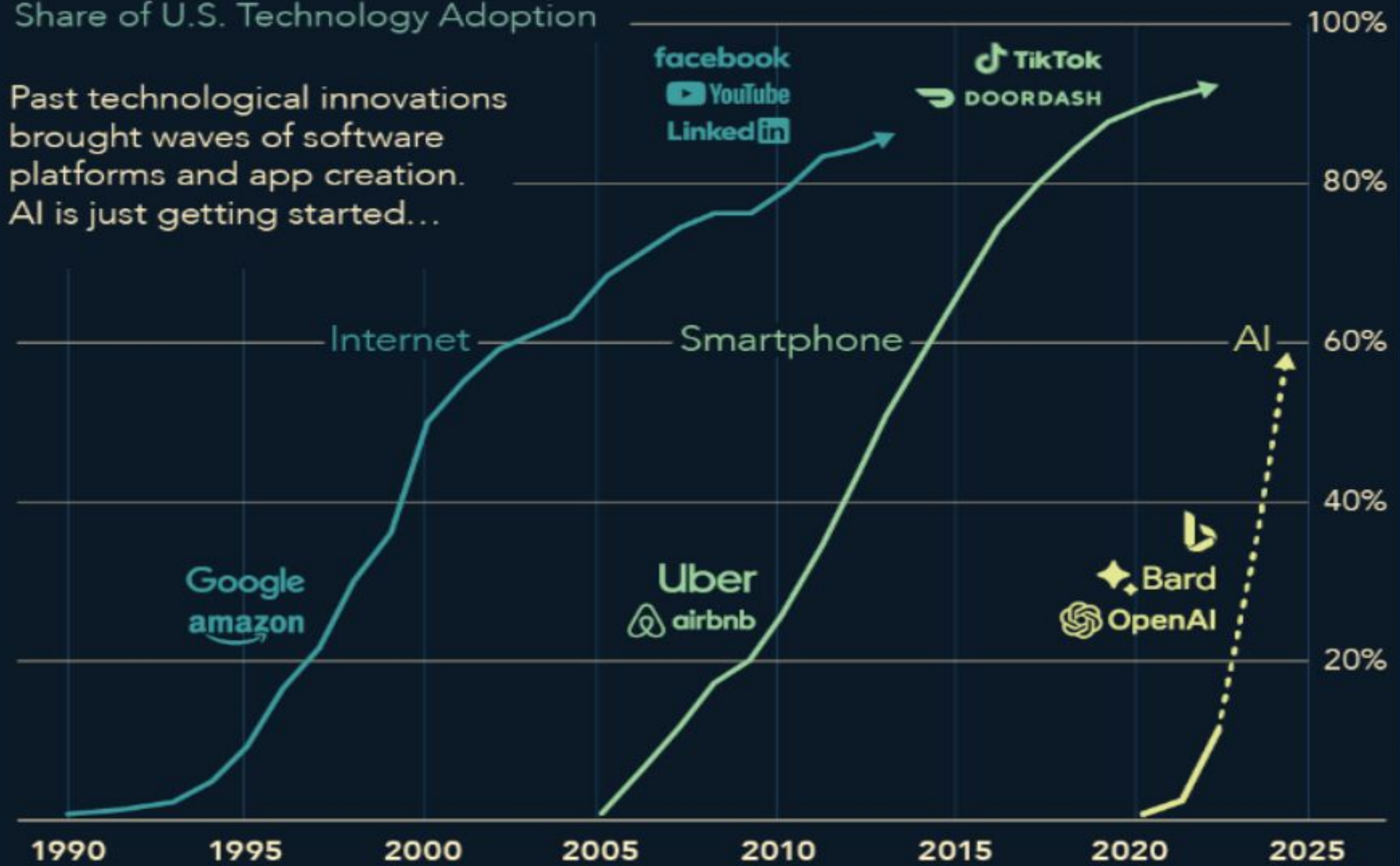
Fewer than 50% of consumers believe they understand AI



Software Creation in Tech Adoption Cycles

Share of U.S. Technology Adoption

Past technological innovations brought waves of software platforms and app creation. AI is just getting started...



AI ADOPTION

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From <https://www.visualcapitalist.com/ranked-the-most-popular-ai-tools/>

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3 KINDS OF AI BASED ON CAPABILITIES



ARTIFICIAL/NARROW AI

- AKA: Weak AI
- The only AI that exists today
- Can be trained to perform a single or narrow task



GENERAL AI

- AKA: Strong AI
- Theoretical Concept Only
- Can use previous learnings and skills to accomplish new tasks in different concepts without the need for humans to train the models.
- Can learn and perform intellectual tasks like humans



SUPER AI

- AKA: Artificial Superintelligence
- Strictly theoretical
- Would think, reason, learn, make judgements and possess cognitive abilities that would surpass those of human beings
- Ability to feel emotions, have needs and possess beliefs and desires

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3 LAYERS OF FUNCTIONALITY

Artificial Intelligence

- Applies any technique that enables computers to mimic human intelligence
- Uses logic, if-then rules, decision trees, and machine/deep learning

Machine Learning

- A subset of AI that includes complex statistical techniques that enable machines to improve tasks with experience
- A subset of machine learning that includes deep learning

Deep Learning

- A subset of machine learning that includes algorithms and direct software to train itself to perform tasks, like speech and image recognition, using multi-layered networks and massive amounts of data



AI: WHAT IT IS AND IS NOT

AI IN EDUCATION IS

- Personalized Learning
- More differentiated practice problems for struggling students
- More advanced concepts for students who are ahead
- Full group differentiation in seconds
- Increased student persistence
- A way to prepare students for their future careers where AI is expected

AI IN EDUCATION IS NOT

- A replacement for teachers or Business Personnel--but it will transform the work they do
- Going to solve every problem that plagues education today
- One more thing--used correctly, AI saves significant amounts of time for busy Business Personnel





CALL TO ACTION:

**EMBRACE AI OR GET LEFT BEHIND.
THE SHIP HAS LEFT THE DOCK AND
MANY LEADERS ARE ALREADY
STRUGGLING TO KEEP UP**



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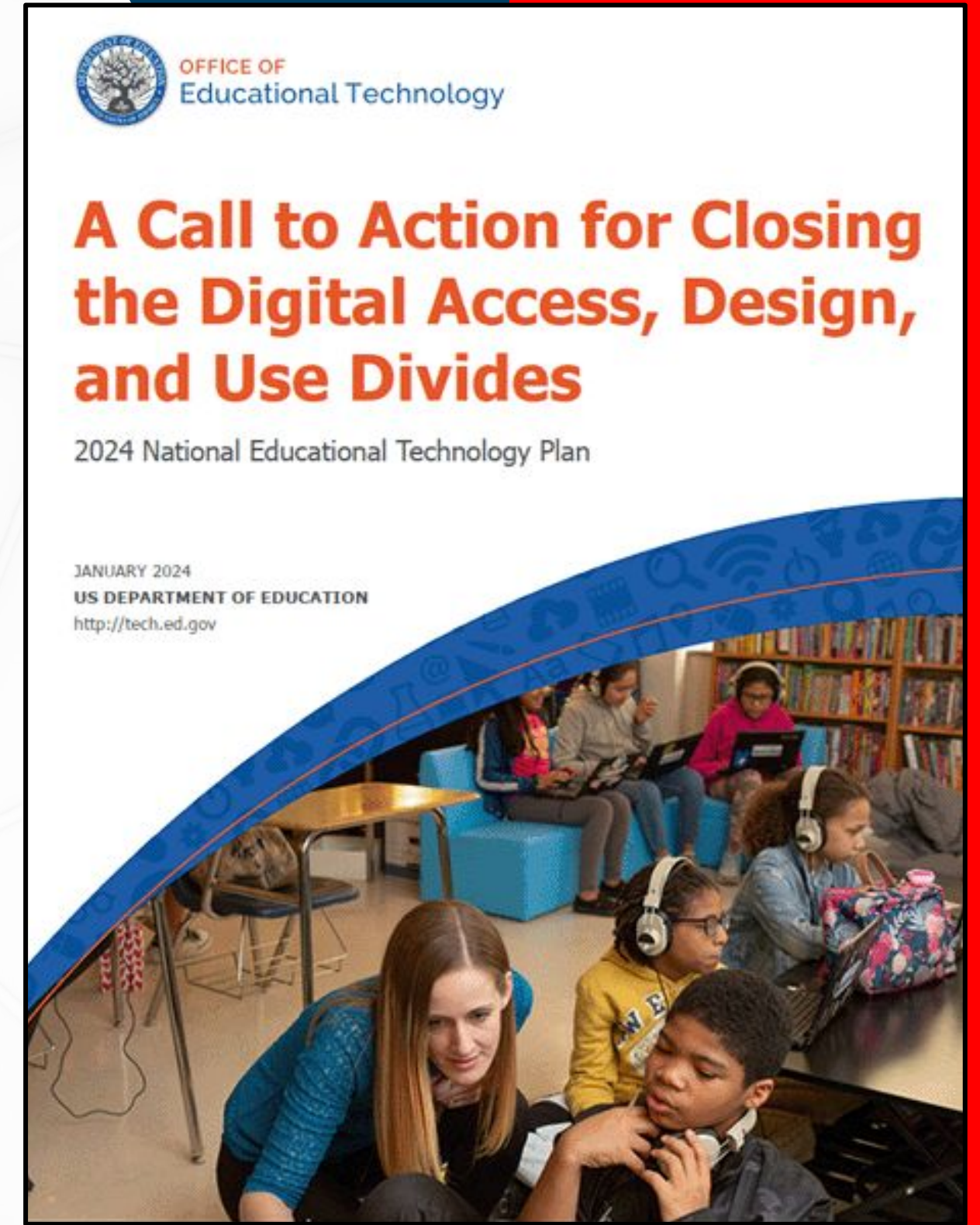
NATIONAL EXPECTATIONS

The US Office of Education released the National Educational Technology Plan in January 2024.

They lay out three different Digital Divides:

- Access
- Design
- Use

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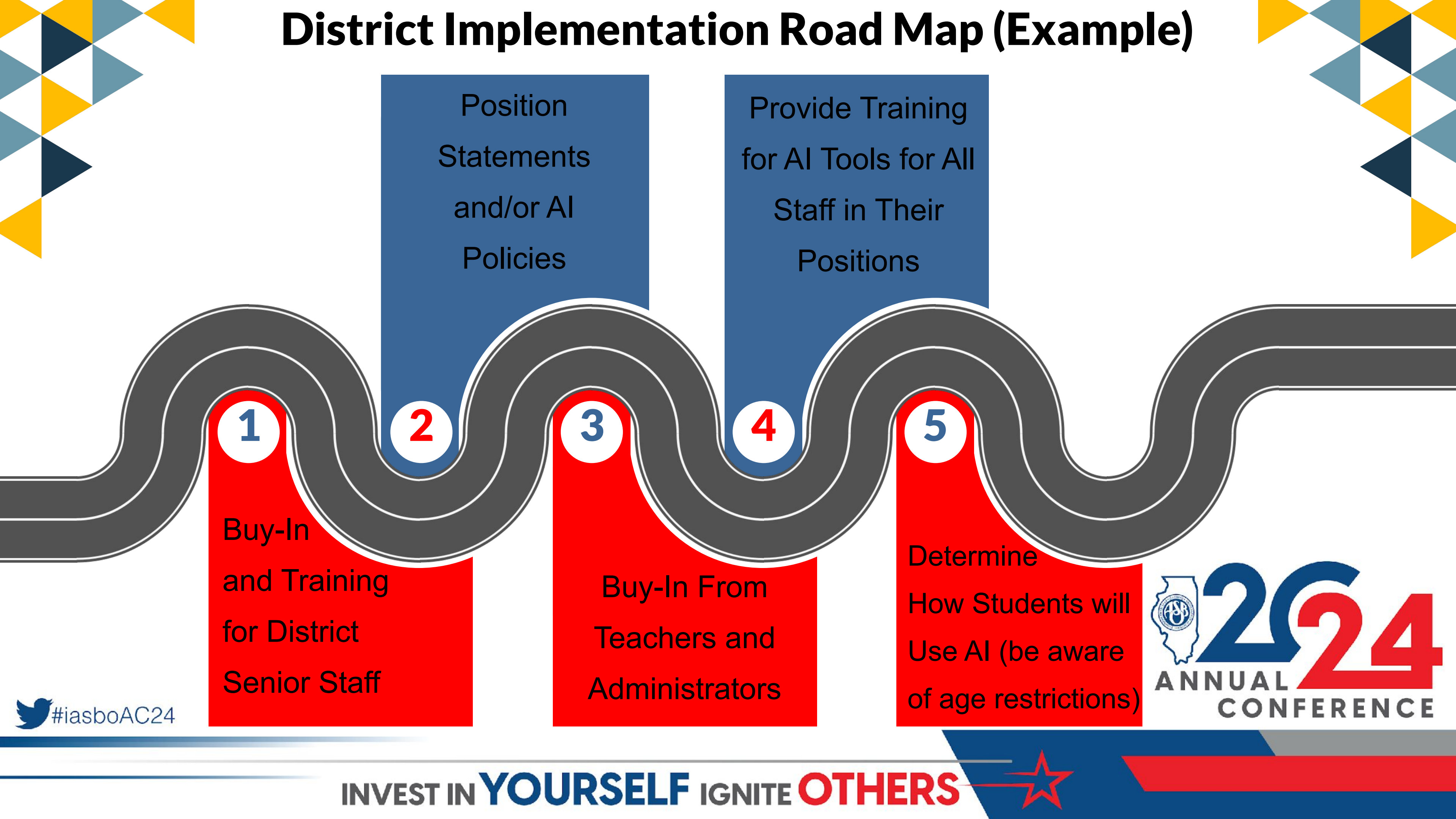


U.S. Department of Education, Office of Educational Technology, National Educational Technology Plan, Washington, DC, 2024.

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District Implementation Road Map (Example)



1

Buy-In
and Training
for District
Senior Staff

2

Position
Statements
and/or AI
Policies

3

Buy-In From
Teachers and
Administrators

4

Provide Training
for AI Tools for All
Staff in Their
Positions

5

Determine
How Students will
Use AI (be aware
of age restrictions)



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**MAGIC
SCHOOL**

HOOK YOUR TEACHERS and Staff!

- **Save hours per week**
- **Create original content for students**
- **Over 70 different modules**
- **Differentiate instruction for students like never before**



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www.magicschool.ai

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“

Educators are responding to AI differently than to other ed tech developments they've seen

Jeremy Roschelle

Executive Director, Digital Promise

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TABLE DISCUSSION

1

What phase are you currently in implementing AI in your district?

Exploring

Implementing with Staff

Implementing with Students

Full Implementation

2

In what ways is your district using AI?

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CONSIDERATIONS OF ETHICAL USE

1

Provide clear guidelines in policy on the use of AI. Address the gray areas!

2

Provide opportunities to discuss responsible use of AI

3

Provide Clarity on what is authentic work and expectations for learners

4

Discuss and identify how to balance using AI vs. creating from scratch

5

Keep the future of students in mind as we prepare them for what is to come

6

Provide opportunities to all students, not just the selected few (Equity in blocking AI)

7

Engage in conversations on academic integrity in a world where AI exists

8

Provide accurate information

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Miller, M. (2023). Setting school policy about AI: A cautionary tale. Ditch That Textbook. <https://ditchthattextbook.com/ai-conversations/>

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BE AWARE OF BIAS

- The Natural language processing model that ChatGPT uses processes language the same way we do (IE: articles written by ChatGPT sounds more human)
- The Natural Language Processing Model receives information from human sources in order to construct responses, therefore, it is going to contain bias because humans are bias.



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AI BIAS EXAMPLE

Amazon used a Natural Language Model to review resumes for positions they had open. Unfortunately, women were underrepresented in the past and therefore the program was more biased toward selecting male candidates.



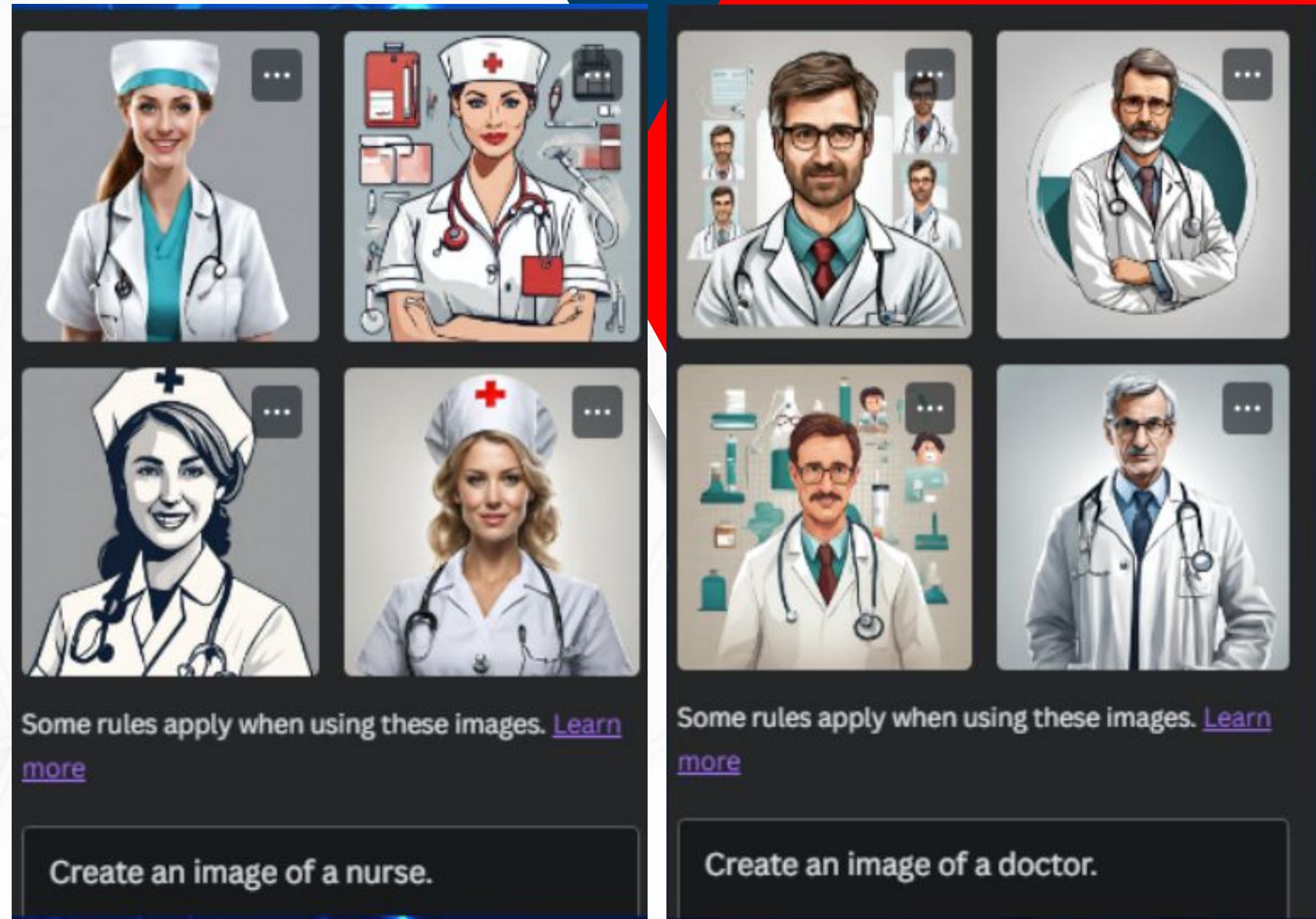
BIAS IN AI

TECHNOLOGY IS AN AMPLIFIER

AI algorithms learn from historical data.
Includes biased or stereotypical content

- Limited in terms of diversity
- Implicit bias of creators
- Implicit bias of users

ChatGPT is designed to always give you an answer, even if the answer is inaccurate.



WHY AI BIAS IS SO IMPORTANT

22%

of students are using
ChatGPT today, a number
that will only continue to
increase



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If students or staff are not taught how to analyze and discern text for bias in AI tools, they will have a biased and inaccurate view of the world.



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TABLE DISCUSSION

What training have you done with teachers, students or staff around using AI Tools?

How are critical thinking skills being embedded to ensure students or staff question all content and analyze for bias?

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BUT IT FEELS LIKE CHEATING

How might we reframe our thinking
about cheating and the use of AI?

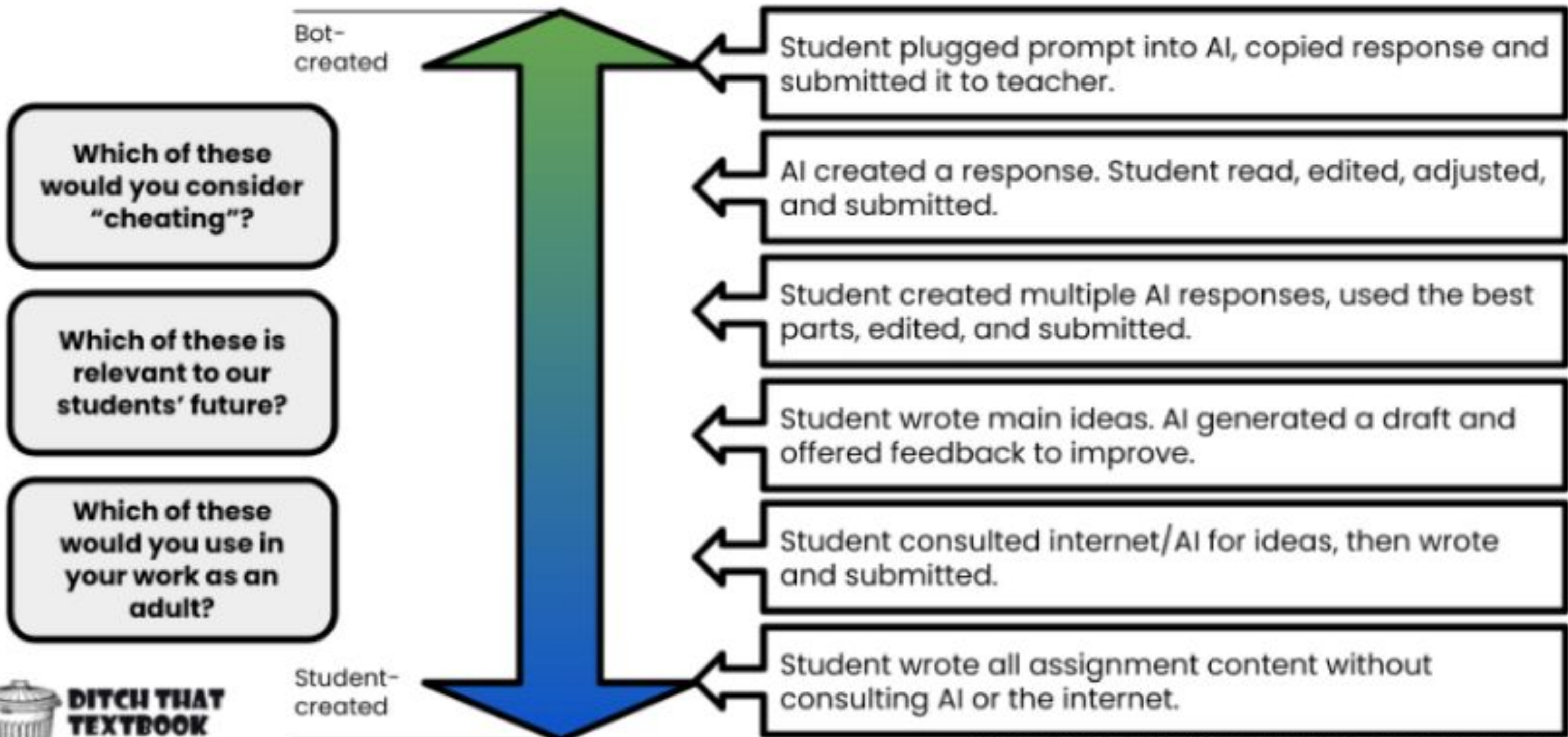


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It's time to rethink "plagiarism" and "cheating"



Graphic by Matt Miller (@jmattmiller) DitchThatTextbook.com



(For more great info on Cheating with AI, check out Matt Miller's [Ditch That Textbook Website](https://www.ditchthattextbook.com))

OPERATIONALIZE EXPECTATIONS

How might you adopt a strategy like this in your buildings?

North Carolina Generative AI Implementation Recommendations and Considerations for PK-13 Public Schools

Publication Date 1/16/24

go.ncdpi.gov/AI_Guidelines

Can I Use AI on this Assignment?

Generative AI Acceptable Use Scale

Generative AI refers to any of the thousands of Artificial Intelligence tools in which the model generates new content (text, images, audio, video, code, etc) This includes, but is not limited to, Large Language Models/ LLMs such as ChatGPT, Google Bard, etc, Image creators such as Dall-E3, Adobe Firefly, and any tools with built in generative AI capabilities such as Microsoft CoPilot, Google Duet, Canva, etc etc)

	Level of AI Use	Full Description	Disclosure Requirements
0	NO AI Use	This assessment is completed entirely without AI assistance. AI Must not be used at any point during the assessment. This level ensured that student rely solely on their own knowledge, understanding, and skills.	No AI disclosure required May require an academic honesty pledge that AI was not used.
1	AI-Assisted Idea Generation and Structuring	No AI content is allowed in the final submission. AI can be used in the assessment for brainstorming, creating structures, and generating ideas for improving work.	AI disclosure statement must be included disclosing how AI was used. Link(s) to AI chat(s) must be submitted with final submission.
2	AI-Assisted Editing	No new content can be created using AI. AI can be used to make improvements to the clarity or quality of student created work to improve the final output.	AI disclosure statement must be included disclosing how AI was used. Link(s) to AI chat(s) must be submitted with final submission.
3	AI for Specified Task Completion	AI is used to complete certain elements of the task, as specified by the teacher. This level requires critical engagement with AI generated content and evaluating its output. You are responsible for providing human oversight and evaluation of all AI generated content.	All AI created content must be cited using proper MLA citation. Link(s) to AI chat(s) must be submitted with final submission.
4	Full AI Use with Human Oversight	You may use AI throughout your assessment to support your own work in any way you deem necessary. AI should be a 'co-pilot' to enhance human creativity. You are responsible for providing human oversight and evaluation of all AI generated content.	You must cite the use of AI using proper MLA or APA citation. Link(s) to AI chat(s) must be submitted with final submission.

Adapted by Vera Cubero for the North Carolina Department of Public Instruction (NCDPI) from the work of Dr. Leon Furze, Dr. Mike Perkins, Dr. Jasper Roe FHEA, & Dr. Jason Mcvaugh
[Link to Original Work](#)



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DISCUSS

What's the biggest "pro tip" you can give at your table on how AI has saved time in your professional or personal life?



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Resources

- AI 101 for Teachers–Videos from ISTE and Code.org
- AI Ethics Guide (ISTE)
- Hands-on AI Projects for the Classroom (Elem)
- Hands-on AI Projects for the Classroom (Secondary)
- Hands-on AI Projects for Computer Science
- Hands-on AI Projects for Electives
- Artificial Intelligence in K12 (COSN)



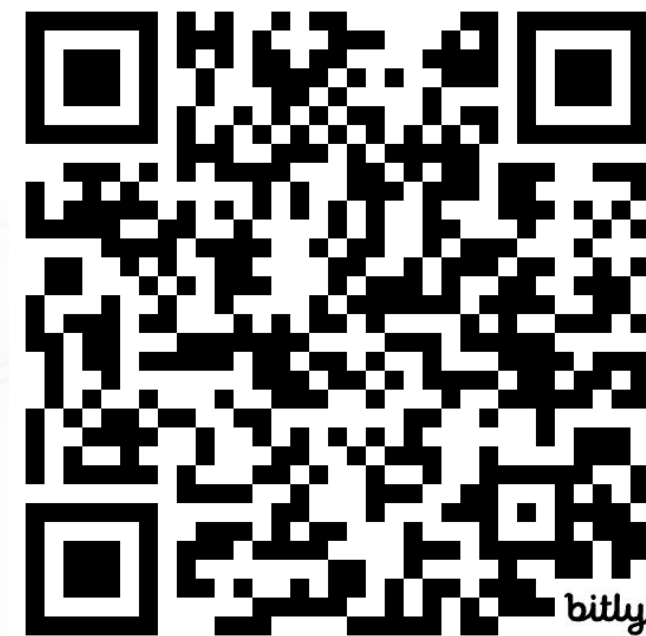
Looking for more guidance
in navigating AI?



RTM Blueprint for AI

Link to website with supplemental resources:

<https://bit.ly/aiK12>



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What food and beverage company recently used AI in designing one of their products?...



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Coca-Cola® Y3000

New from Coca-Cola® Creations, look into the year 3000 with Coca-Cola® Y3000 – the first limited-edition Coke flavor from the future. Created to show us an optimistic vision of what’s to come, where humanity and technology are more connected than ever. For the first time, Coca-Cola® Y3000 was co-created with artificial intelligence to help bring the flavor of tomorrow to Coke fans. Taste the Future now. Coca-Cola® Y3000 will be available for a limited time only, so pick up a Coca-Cola® Y3000 and get a glimpse into the future world.



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Questions ???



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