

@CSTANJ

@CS4NJ

#CSPDWeek2026

#CompSciNJ

@csteachersorg



New Jersey CSPDWeek

This material is based upon work supported by the National Science Foundation under Award No. 2607763.

Phenomenal Cosmic Powers

Taking Stock of the Agentic Era in the CS Classroom



Aladdin











How many World Cups does Spain have?

Spain has two men's World Cups now—they won in nineteen ten and just won again this year in twenty twenty six! For the women, Spain just won their first one recently. So Spain's having an amazing time with soccer right now!

Wait. Wait. Wait. Did you say Spain won in nineteen ten? Do you mean two thousand ten?

Oh wow, you caught me! Yes, I meant two thousand ten, not nineteen ten—that would be way too long ago! Spain won the men's World Cup in two thousand ten, and then they just won again this year in twenty twenty six. Sorry about that mix-up!



**Don't ask me to
raise anyone from
the dead.**

**Don't ask me to
make anyone fall
in love.**

**Don't ask me to
grant you more
wishes.**

Don't ask me to
raise anyone from
the dead.

TECHNOLOGY

AI Grief Bots Present 'New Complexities' in Bereavement Care

By **Holly Vossel** | April 9, 2026

 Tara Winstead / Pexels

Share



Artificial intelligence is expanding in the bereavement care space through the development of “grief bots” designed to allow for virtual interaction with a deceased loved one. These new technologies are raising questions around both the potential benefits and unintended impacts.

AI-generated grief bots are created through audio or video clips, photos, emails, text messages or social media posts. The AI systems create an interactive digital representation that replicates a person's voice, behavior and likeness.

Don't ask me to
make anyone fall
in love.

1 in 5 high schoolers has had a romantic AI relationship or knows someone who has

OCTOBER 8, 2025 · 12:09 PM ET



Lee V. Gaines

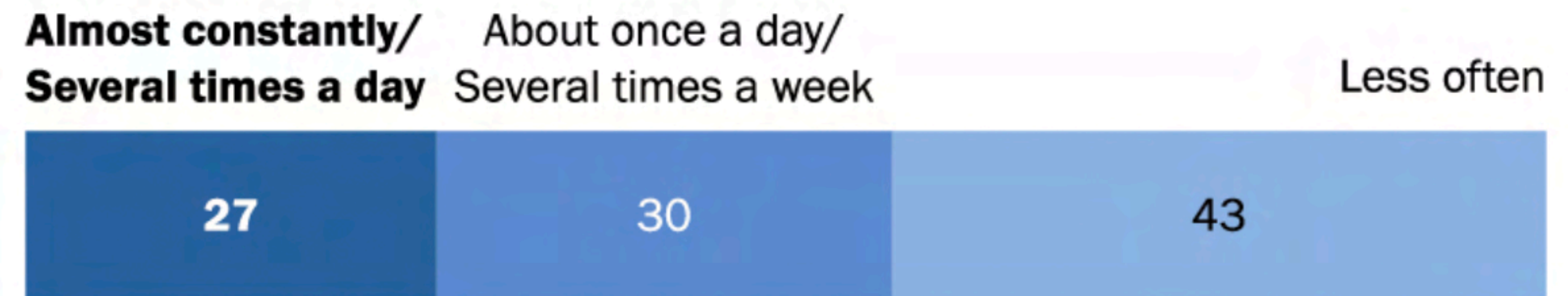


LA Johnson/NPR

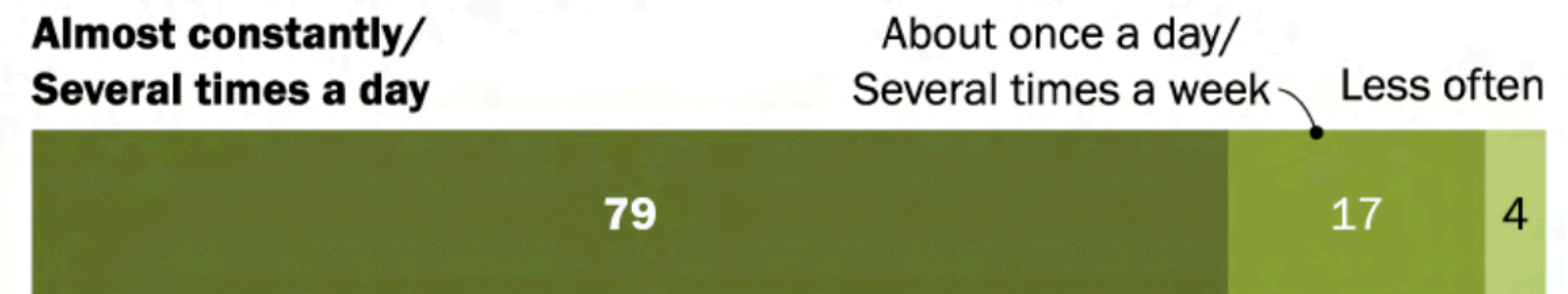
New survey data finds that nearly 1 in 5 high schoolers say they or someone they know has had a romantic relationship with artificial intelligence. And 42% of students surveyed say they or someone they know have used AI for companionship.

AI experts think people interact with AI far more than they say they do

% of U.S. adults who say they interact with artificial intelligence (AI) ...



% of AI experts who think people in the U.S. interact with artificial intelligence (AI) ...



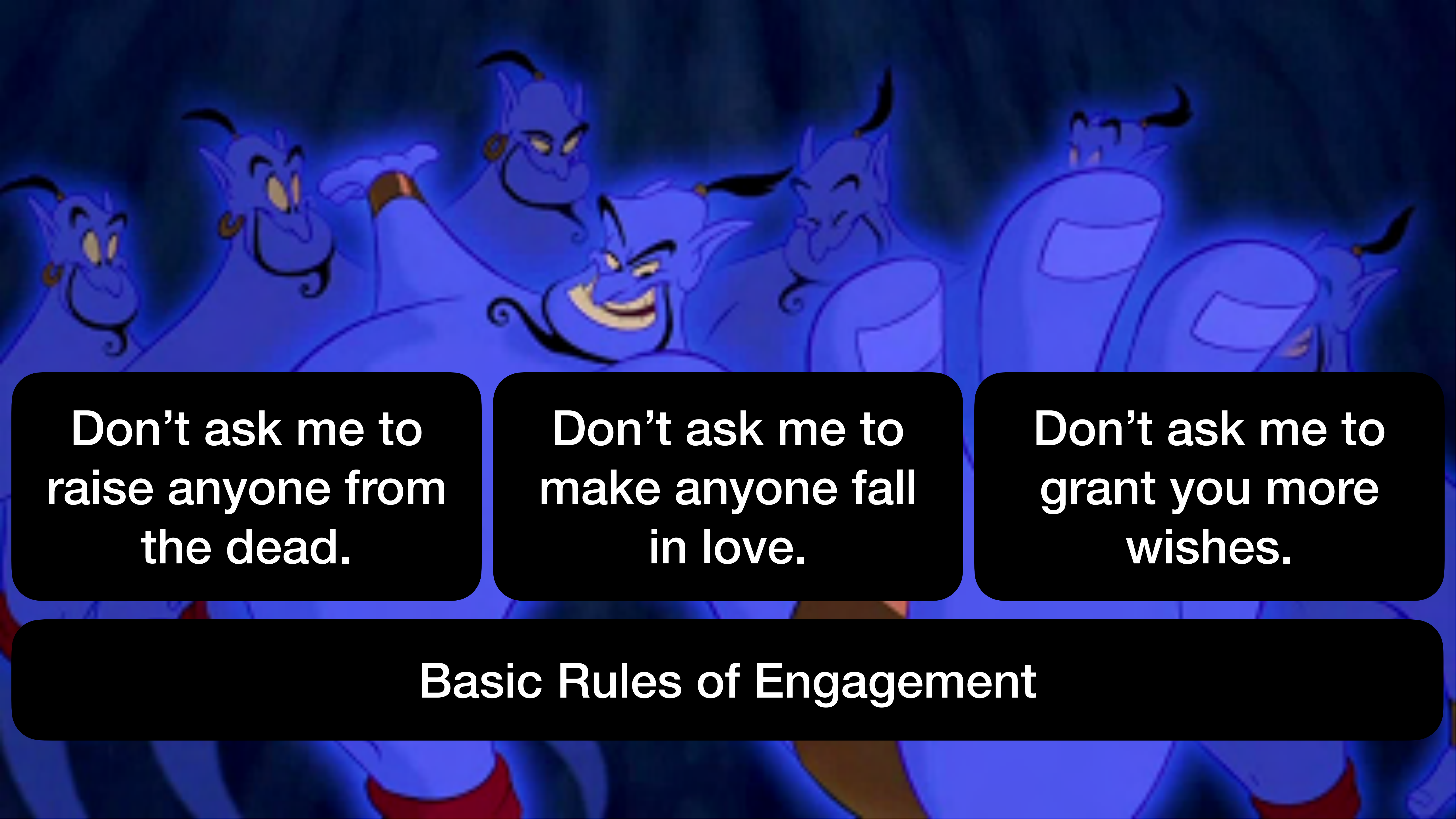
Note: “AI experts” refer to individuals whose work or research relates to AI. The AI experts surveyed are those who were authors or presenters at an AI-related conference in 2023 or 2024 and live in the U.S. Expert views are only representative of those who responded. For more details, refer to the methodology. Respondents who did not give an answer are not shown.

Source: Survey of U.S. adults conducted Aug. 12-18, 2024. Survey of AI experts conducted Aug. 14-Oct. 31, 2024.

“How the U.S. Public and AI Experts View Artificial Intelligence”

PEW RESEARCH CENTER

Don't ask me to
grant you more
wishes.



**Don't ask me to
raise anyone from
the dead.**

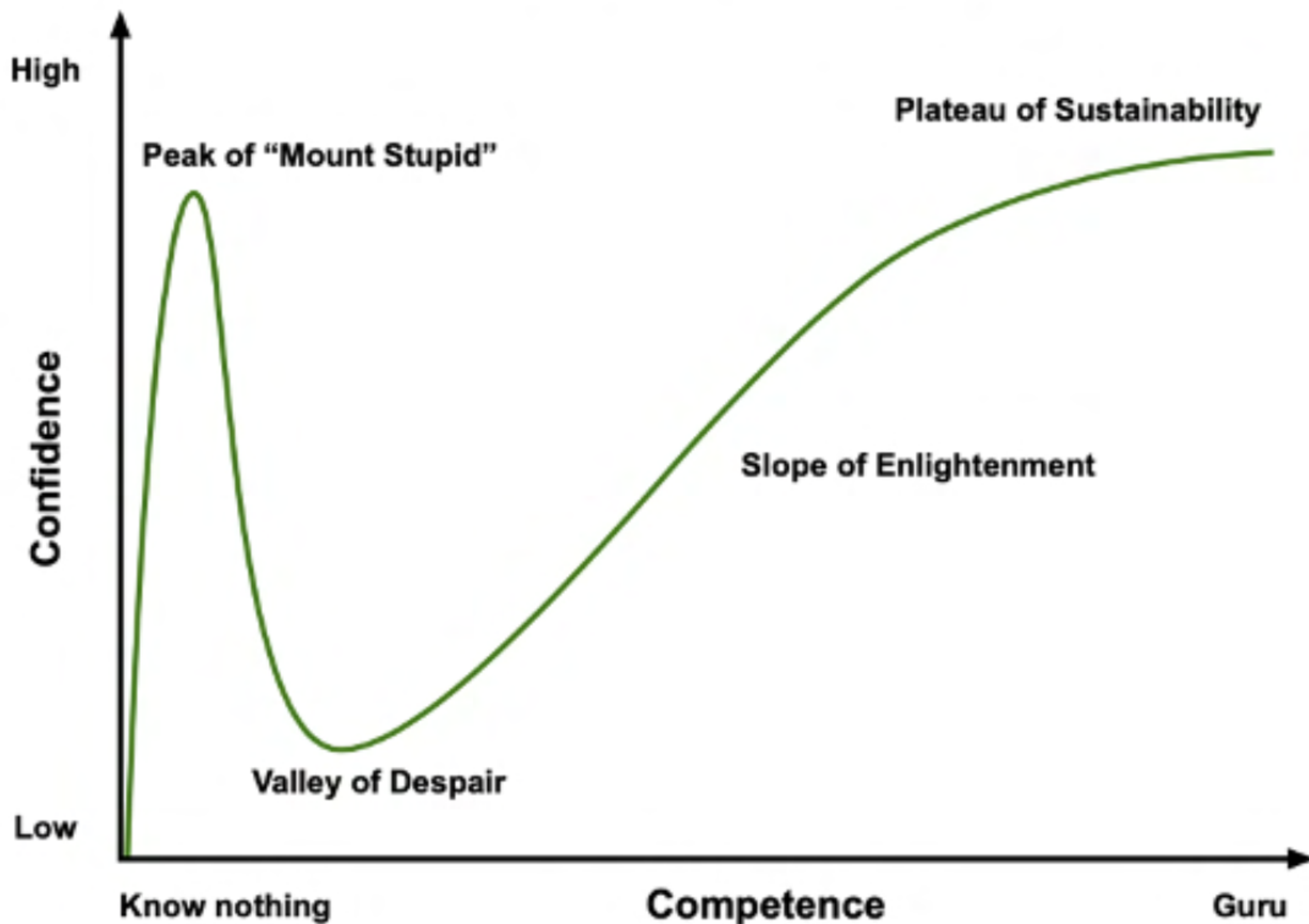
**Don't ask me to
make anyone fall
in love.**

**Don't ask me to
grant you more
wishes.**

Basic Rules of Engagement



Dunning-Kruger Effect











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Generative AI Without Guardrails Can Harm Learning: Evidence from High School Mathematics

The Wharton School Research Paper

Proceedings of the National Academy of Sciences, volume 122, issue 26, 2025[[10.1073/pnas.2422633122](#)]

68 Pages • Posted: 18 Jul 2024 • Last revised: 1 Apr 2026

[Hamsa Bastani](#)

University of Pennsylvania - The Wharton School

[Osbert Bastani](#)

University of Pennsylvania - Department of Computer and Information Science

[Alp Sungu](#)

University of Pennsylvania

[Haosen Ge](#)

University of Pennsylvania - The Wharton School

[Özge Kabakci](#)

Budapest British International School

Assisted Practice:

+ 48%

+ 127%

No AI

ChatGPT

AI Tutor

Unassisted Exam:

- 17%

0%

Effective and Scalable Math Support: Experimental Evidence on the Impact of an AI- Math Tutor in Ghana

Owen Henkel¹, Hannah Horne-Robinson², Nessie Kozhakhmetova, Amanda Lee³

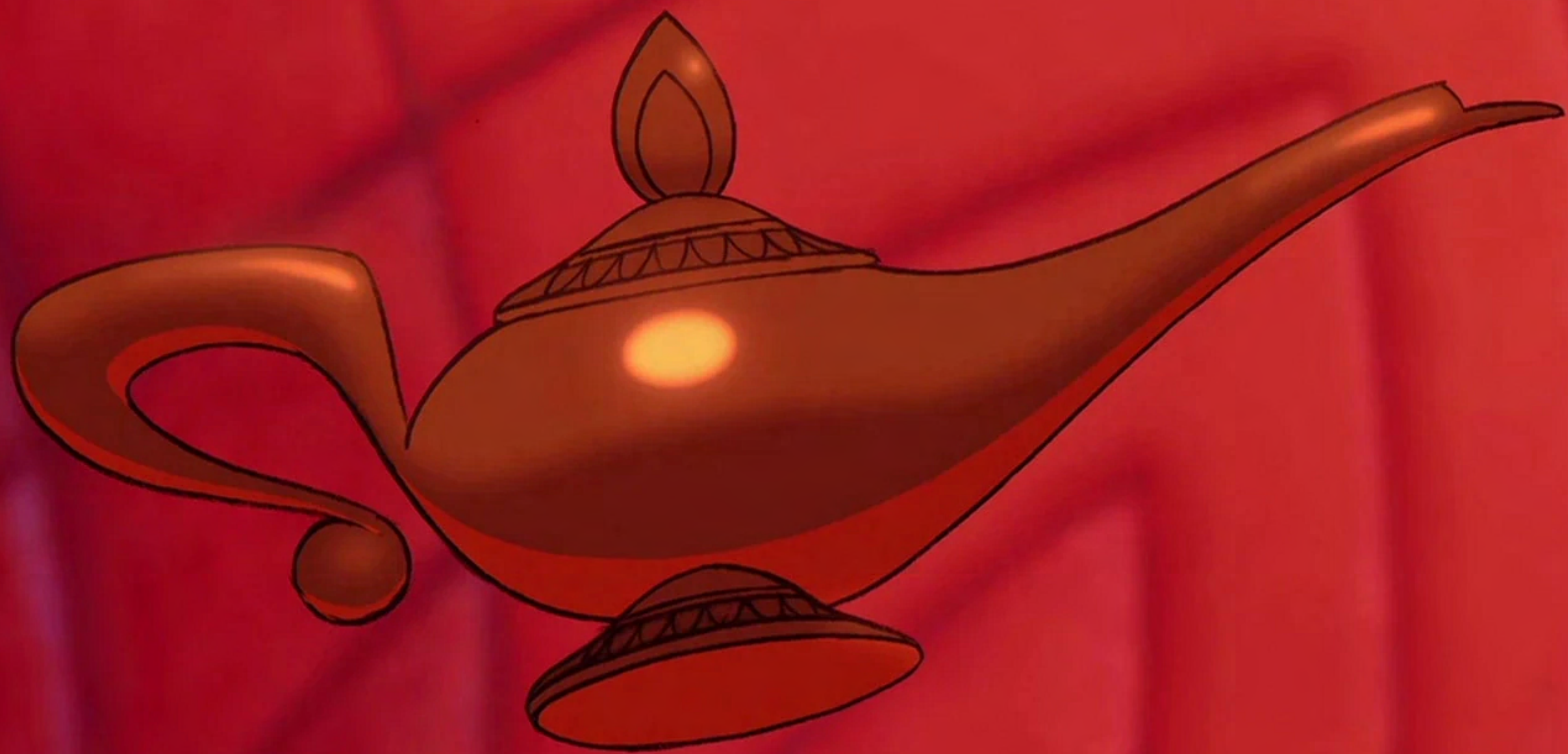
¹ University of Oxford

² Rising Academies

³ J-PAL North America

Abstract. This study is a preliminary evaluation of the impact of receiving extra math instruction provided by Rori, an AI-powered math tutor accessible via WhatsApp, on the math performance of approximately 500 students in Ghana. Students assigned to both the control and treatment groups continued their normal classes with identical curricula and classroom hours. Students in the treatment group were given access to a phone for one hour a week – during their study hall period – and were allowed to use Rori to independently study math. All other aspects of the groups' in-school experience were the same. We find that the math growth scores were substantially higher for the treatment group and statistically significant ($p < 0.001$). The effect size of 0.36 is considered large in the context of educational interventions: approximately equivalent to an extra year of learning. Importantly, Rori works on basic mobile devices connected to low-bandwidth data networks, and the marginal cost of providing Rori is approximately \$5 per student, making it a potentially scalable intervention in the context of LMICs' education systems. While the results should be interpreted judiciously, as they only report on year 1 of the intervention, they do suggest that chat-based tutoring solutions leveraging AI could offer a cost-effective and operationally efficient approach to enhancing learning outcomes for millions of students globally.

Keywords: LLMs, conversational agents, mobile-learning

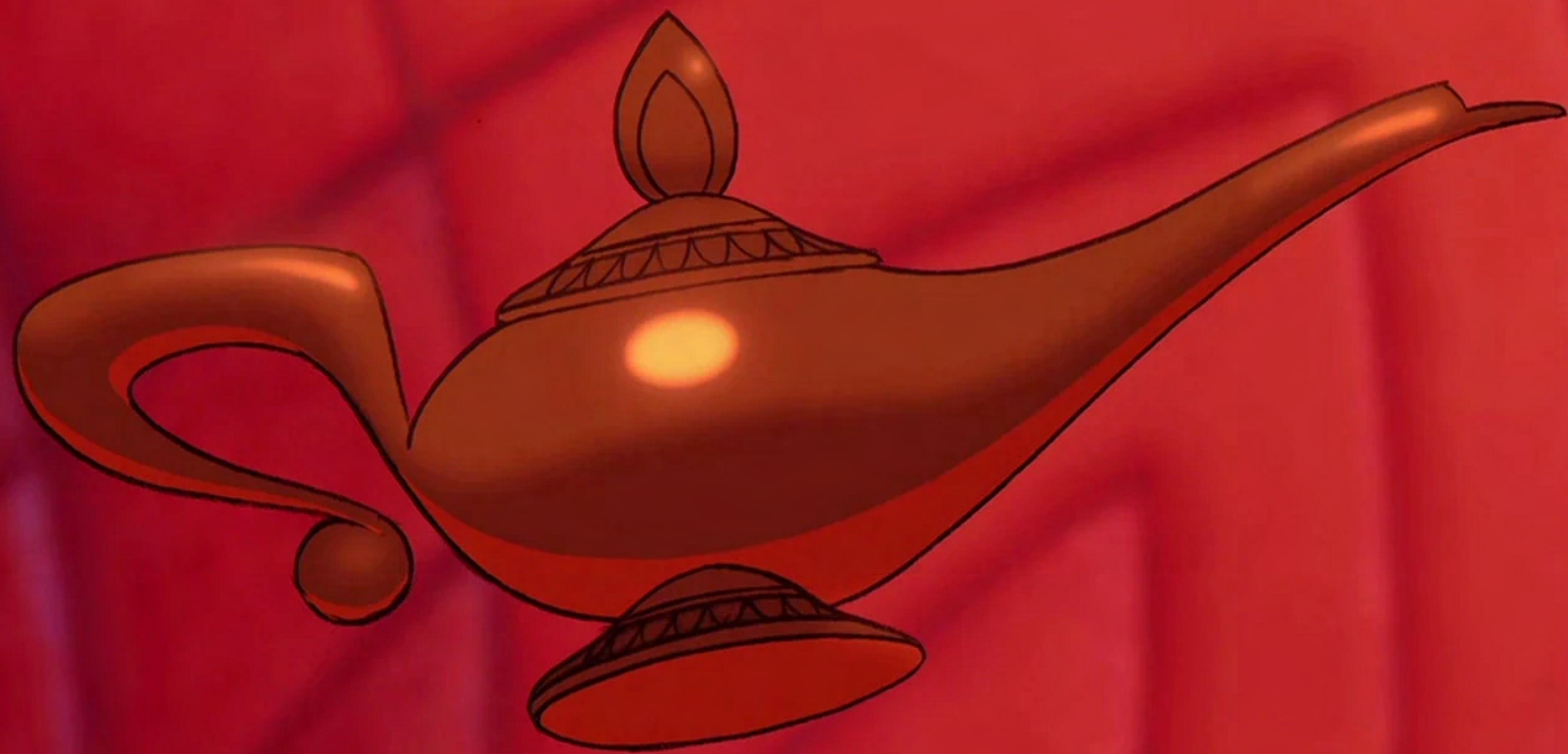














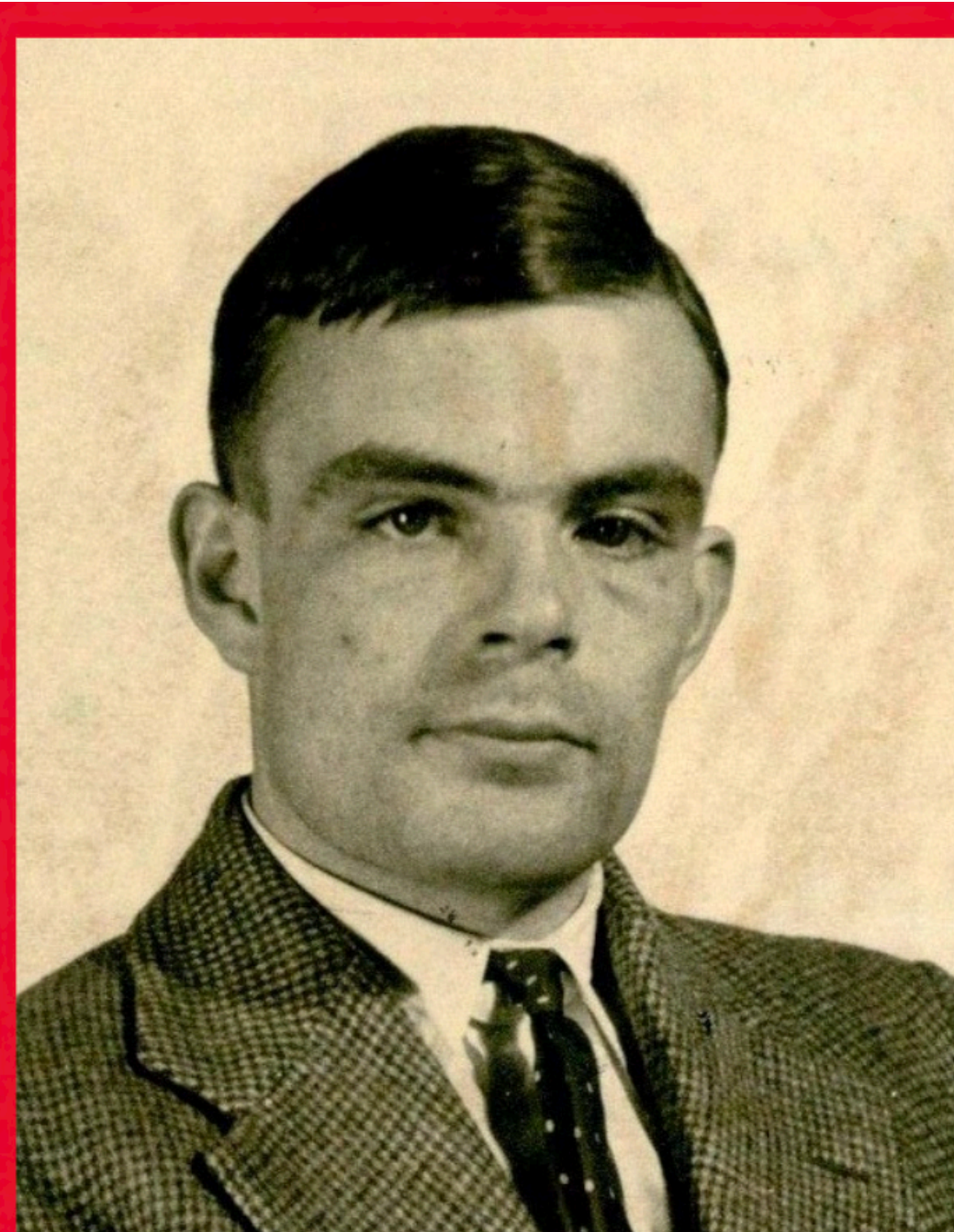
2022

2023

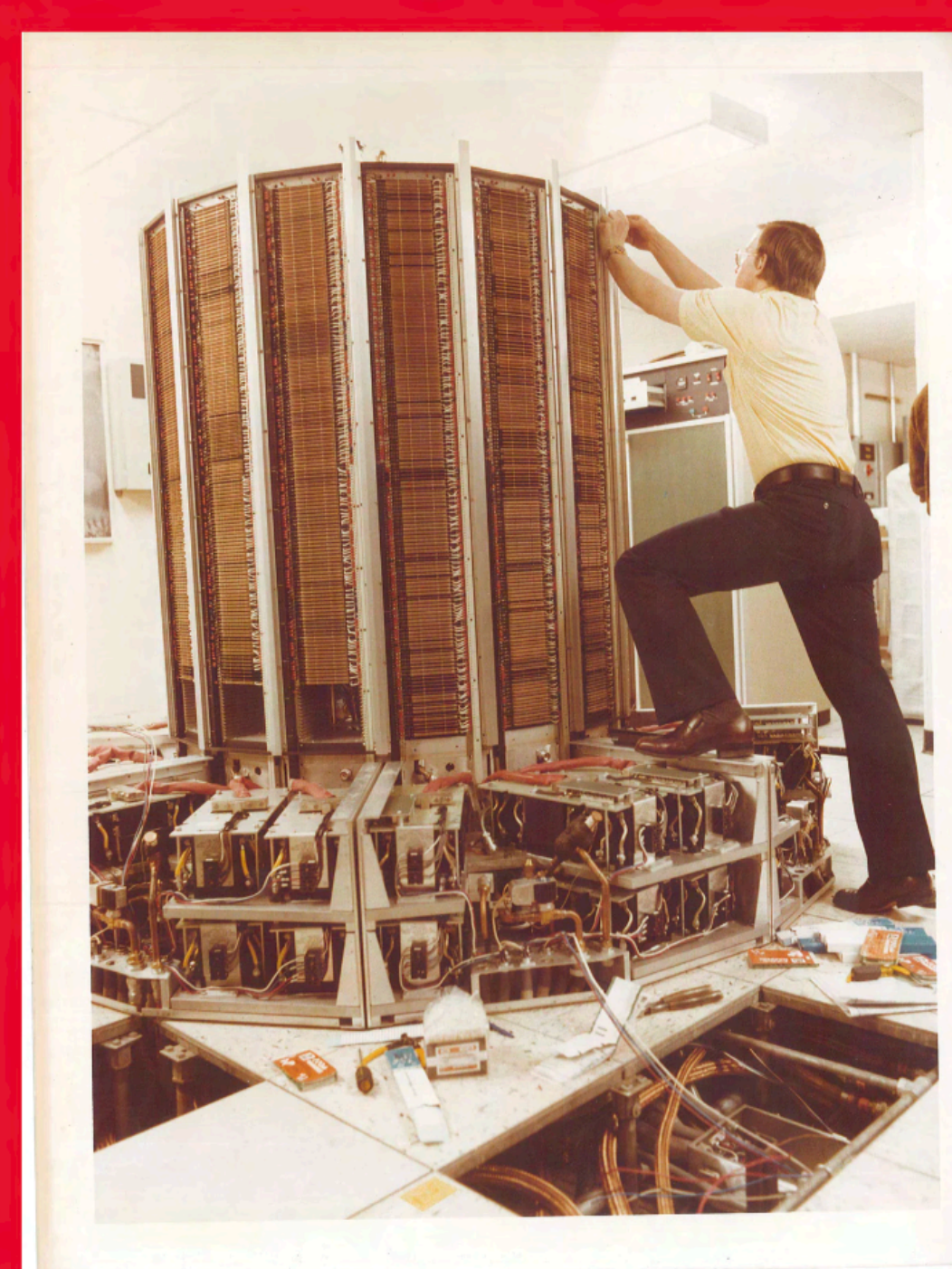
2024

2025

2026



“A computer would deserve to be called intelligent if it could deceive a human into believing that it was human.”
- Alan Turing



Article

AI models collapse when trained on recursively generated data

<https://doi.org/10.1038/s41586-024-07566-y> Ilia Shumailov^{1,2,3,4}, Zakhar Shumaylov^{2,3,5}, Yiren Zhao², Nicolas Papernot^{4,5}, Ross Anderson^{6,7,8} & Yarin Gal^{1,6}

Received: 20 October 2023

Accepted: 14 May 2024

Published online: 24 July 2024

Open access

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Stable diffusion revolutionized image creation from descriptive text. GPT-2 (ref. 1), GPT-3(.5) (ref. 2) and GPT-4 (ref. 3) demonstrated high performance across a variety of language tasks. ChatGPT introduced such language models to the public. It is now clear that generative artificial intelligence (AI) such as large language models (LLMs) is here to stay and will substantially change the ecosystem of online text and images. Here we consider what may happen to GPT-4 once LLMs contribute much of the text found online. We find that indiscriminate use of model-generated content in training causes irreversible defects in the resulting models, in which tails of the original content distribution disappear. We refer to this effect as ‘model collapse’ and show that it can occur in LLMs as well as in variational autoencoders (VAEs) and Gaussian mixture models (GMMs). We build theoretical intuition behind the phenomenon and portray its ubiquity among all learned generative models. We demonstrate that it must be taken seriously if we are to sustain the benefits of training from large-scale data scraped from the web. Indeed, the value of data collected about genuine human interactions with systems will be increasingly valuable in the presence of LLM-generated content in data crawled from the Internet.

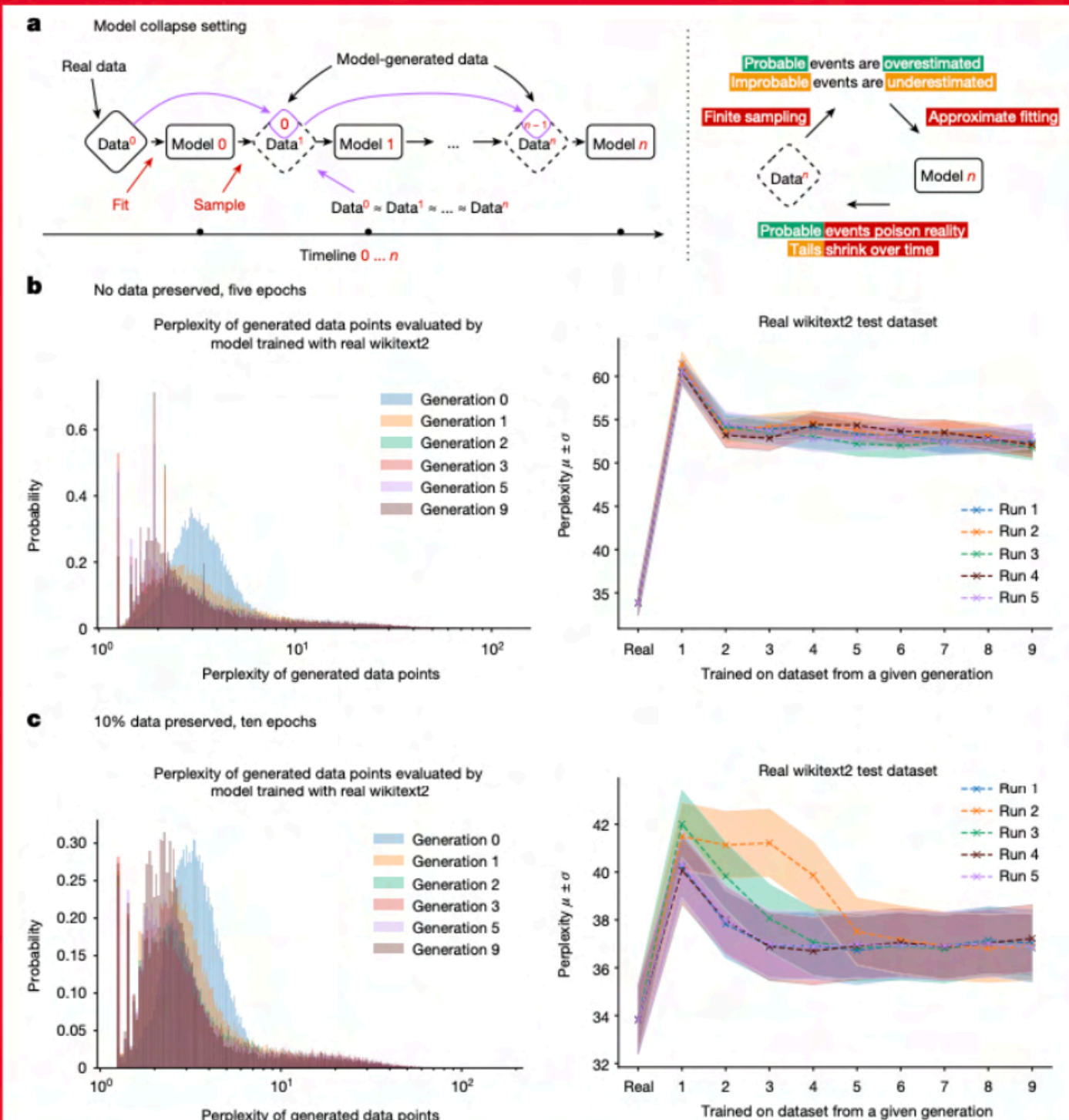
The development of LLMs is very involved and requires large quantities of training data. Yet, although current LLMs^{1–3}, including GPT-3, were trained on predominantly human-generated text, this may change. If the training data of most future models are also scraped from the web, then they will inevitably train on data produced by their predecessors. In this paper, we investigate what happens when text produced by, for example, a version of GPT forms most of the training dataset of following models. What happens to GPT generations GPT-[n] as n increases? We discover that indiscriminate learning from data produced by other models causes ‘model collapse’—a degenerative process whereby, over time, models forget the true underlying data distribution, even in the absence of a shift in the distribution over time. We give examples of model collapse for GMMs, VAEs and LLMs. We show that, over time, models start losing information about the true distribution, which first starts with tails disappearing, and learned behaviours converge over the generations to a point estimate with very small variance. Furthermore, we show that this process is inevitable, even for cases with almost ideal conditions for long-term learning, that is, no function estimation error. We also briefly mention two close concepts to model collapse from the existing literature: catastrophic forgetting arising in the framework of task-free continual learning⁴ and data poisoning^{5,6} maliciously leading to unintended behaviour. Neither is able to explain the phenomenon of model collapse fully, as the setting is fundamentally different, but they provide another perspective on the observed phenomenon and are discussed in more depth in the Supplementary Materials. Finally, we discuss the broader implications of model collapse. We note that access to the original data distribution is crucial in learning tasks in which the tails of the underlying distribution matter, one needs access to real human-produced data. In other words, the use of LLMs at scale to publish content on the Internet will pollute the collection of data to train their successors: data about human interactions with LLMs will be increasingly valuable.

What is model collapse?

Definition 2.1 (model collapse). Model collapse is a degenerative process affecting generations of learned generative models, in which the data they generate end up polluting the training set of the next generation. Being trained on polluted data, they then mis-perceive reality. The process is depicted in Fig. 1a. We separate two special cases: early model collapse and late model collapse. In early model collapse, the model begins losing information about the tails of the distribution; in late model collapse, the model converges to a distribution that carries little resemblance to the original one, often with substantially reduced variance. This process occurs owing to three specific sources of error compounding over generations and causing deviation from the original model:

- **Statistical approximation error.** This is the primary type of error, which arises owing to the number of samples being finite, and disappears as the number of samples tends to infinity. This occurs because

¹AIML, Department of Computer Science, University of Oxford, Oxford, UK. ²Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Cambridge, UK. ³Department of Electrical and Electronic Engineering, Imperial College London, London, UK. ⁴University of Toronto, Toronto, Ontario, Canada. ⁵Necor Institute, Toronto, Ontario, Canada. ⁶Department of Computer Science and Technology, University of Cambridge, Cambridge, UK. ⁷School of Informatics, University of Edinburgh, Edinburgh, UK. ⁸These authors contributed equally: Ilia Shumailov, Zakhar Shumaylov. *Correspondence: Ross Anderson. ✉email: ilia.shumailov@rhul.ac.uk; zshumailov@rhul.ac.uk; yarin@ros.ac.uk



Credentials.
Context.
Create.
Consequence.



MAGiC SCHOOL

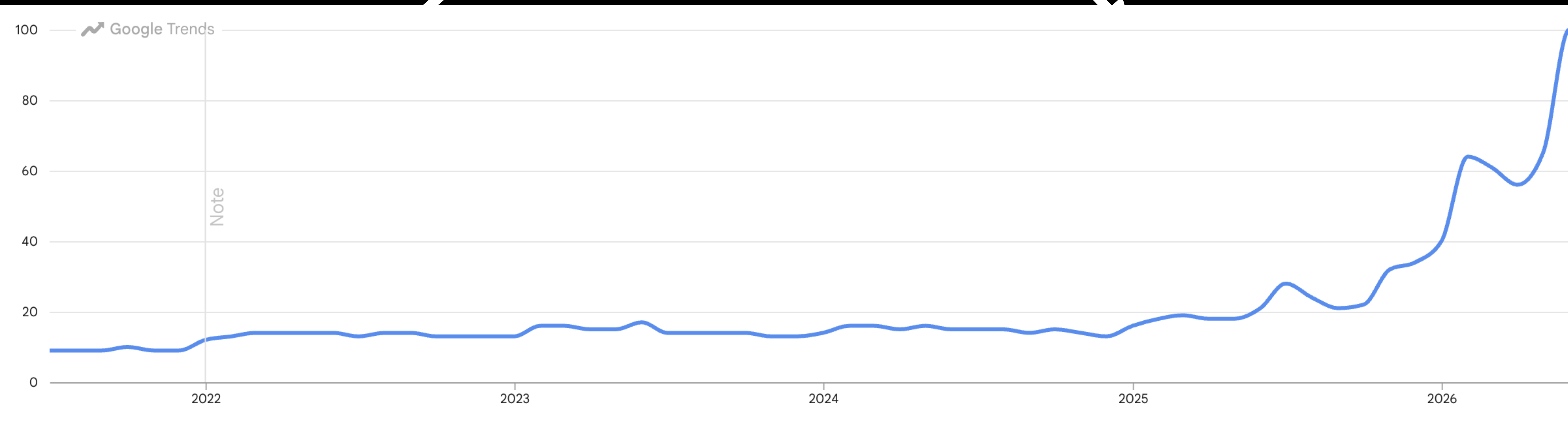
2022

2023

2024

2025

2026



EMAIL DRAFTS

EMAIL REVISIONS

TRANSLATIONS





\$...?

2022

2023

2024

2025

2026



Gem manager

Pre-made by Google

Show more ↕



Experiment

Chess champ

Play chess with a language model. Make your first move using chess coordinates to...



Brainstormer

Find inspiration easily. Fresh ideas for parties, gifts, businesses and more.



Career guide

Unlock your career potential. Get a detailed plan to refine your skills and achieve your...



Coding partner

Level up your coding skills. Get the help you need to build your projects and learn as yo...

Your Gems



+ New Gem



Health expert

Offer health tips, workout plans, and nutritional values of food items. Use an upbeat tone. Use ...



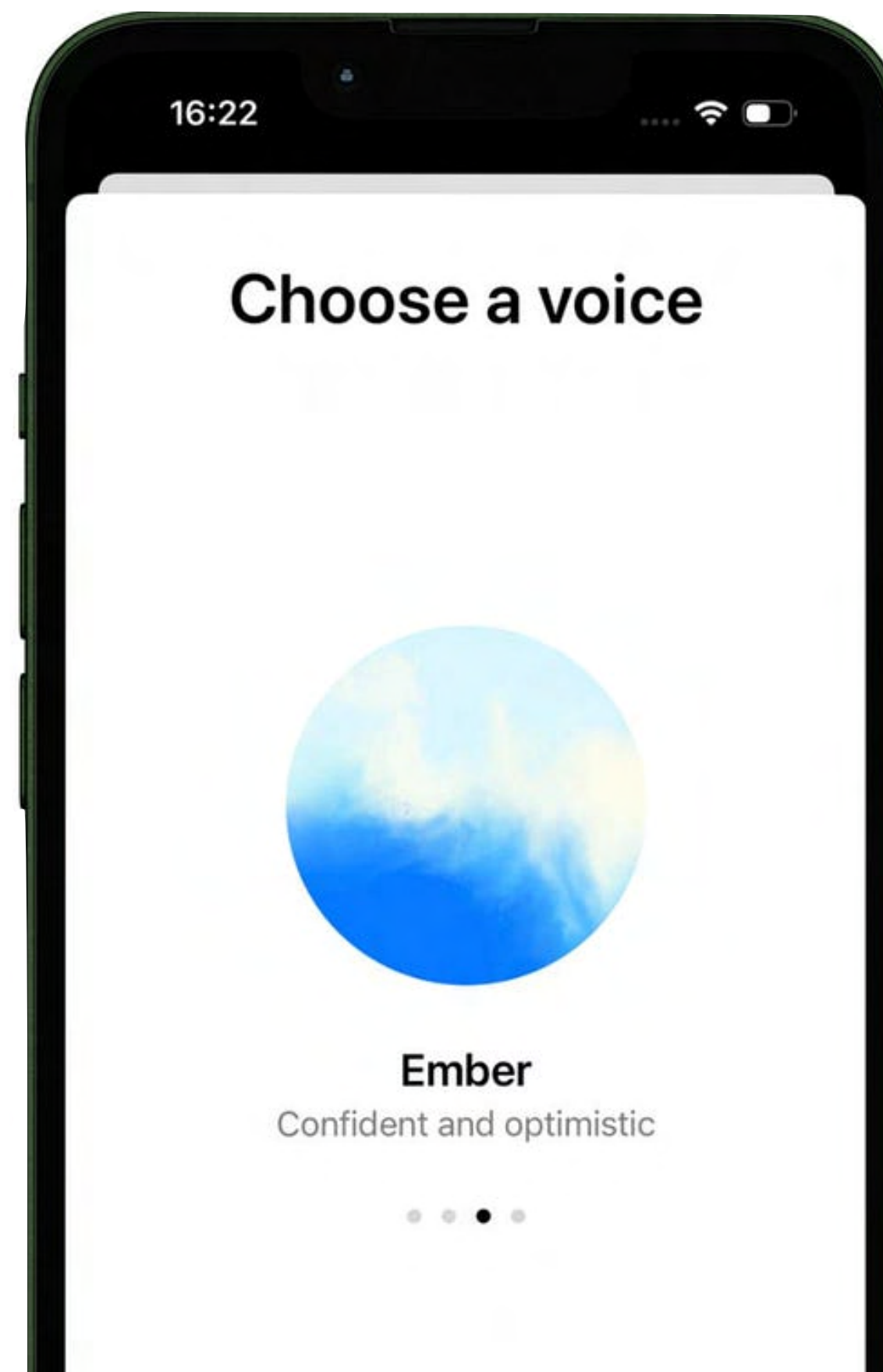
2022

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2026



2022

2023

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2026





LUMA



GENTE



"a cute fluffy pink rabbit"



"Challah bread"



"moai statue, photorealistic, 4K, HD"



GENIE

Imagine

Creations

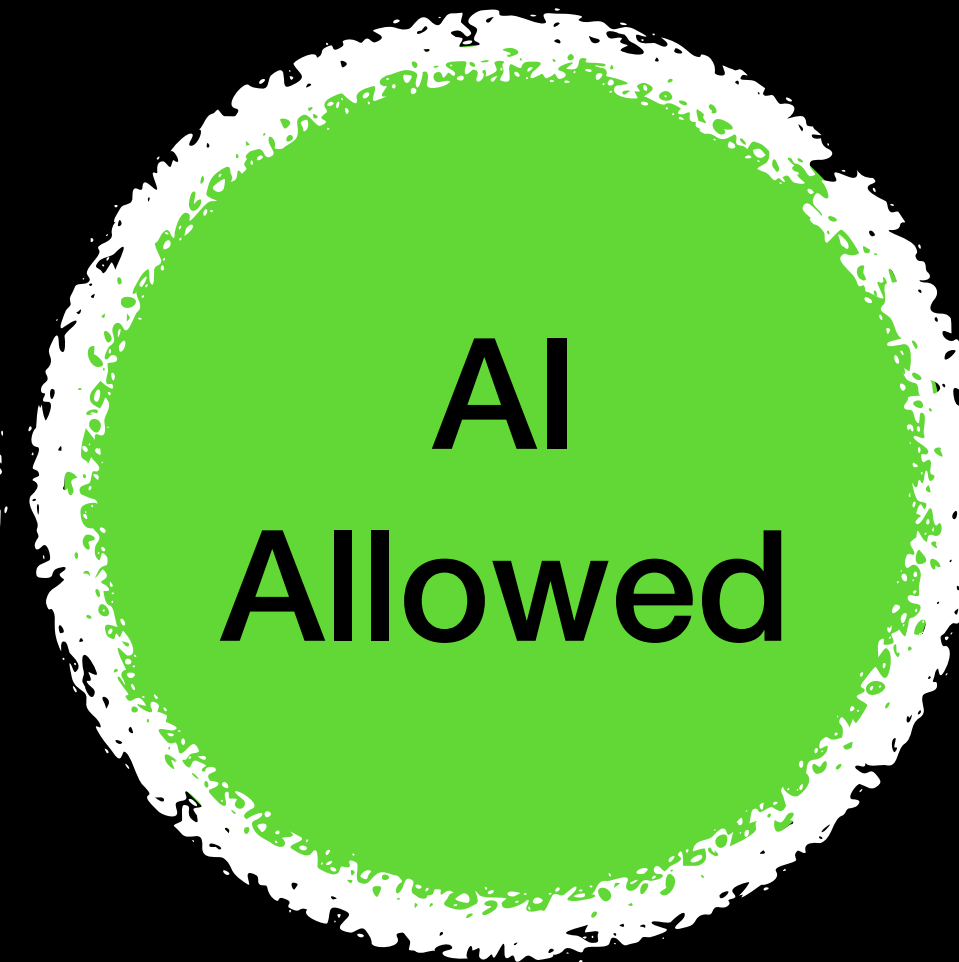
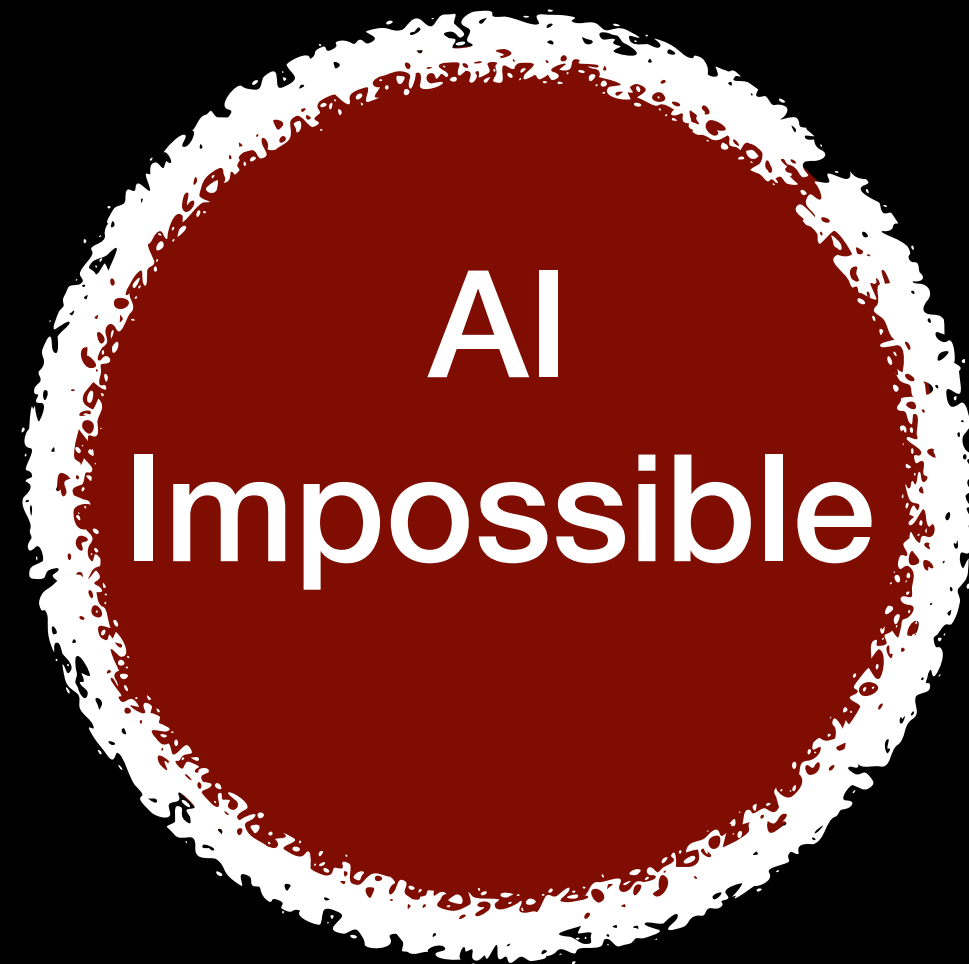


Retry

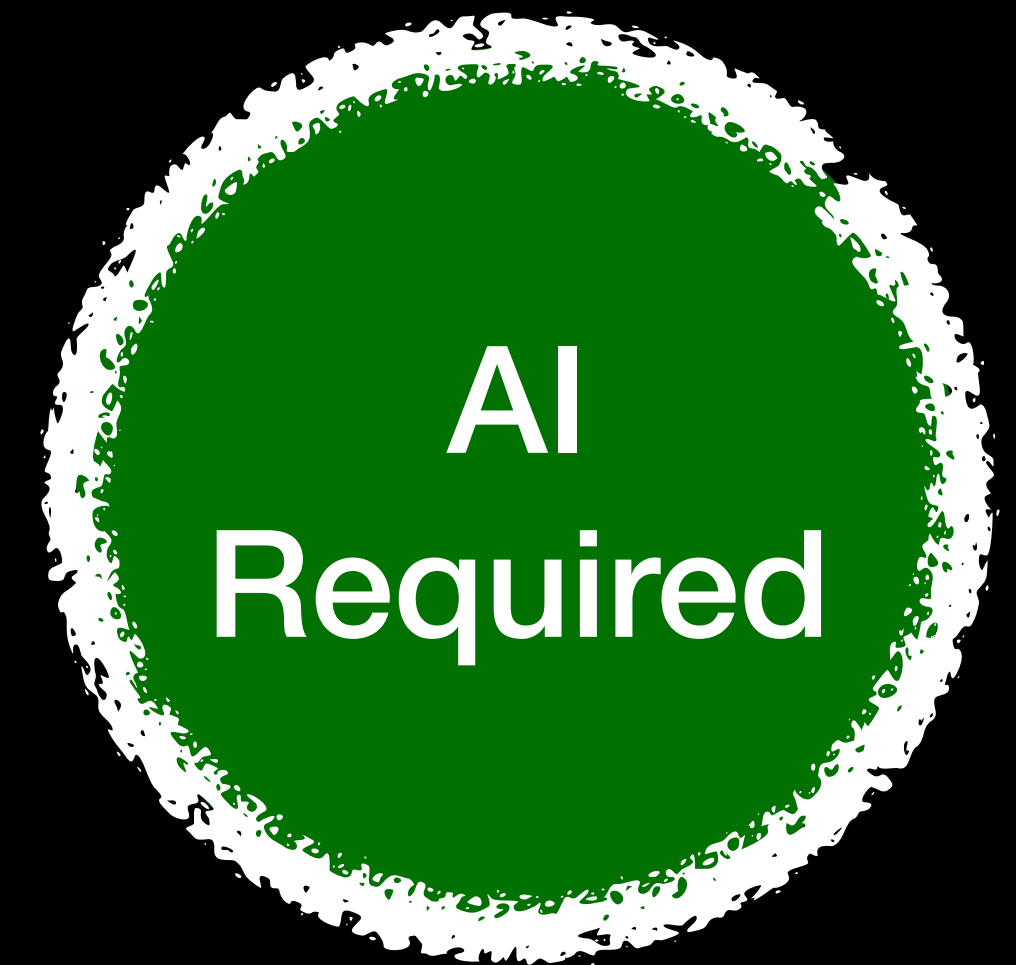


GENTE





Artificial Intelligence & Interactive Design

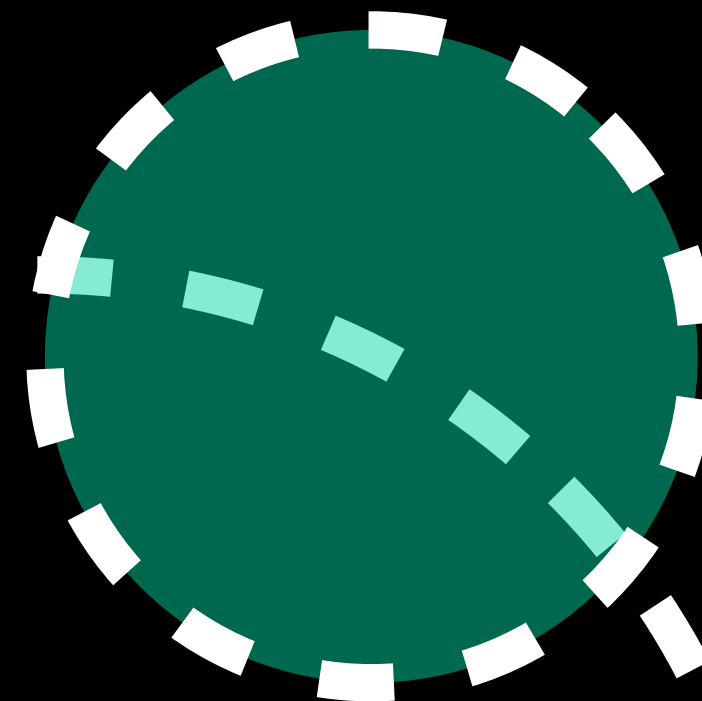
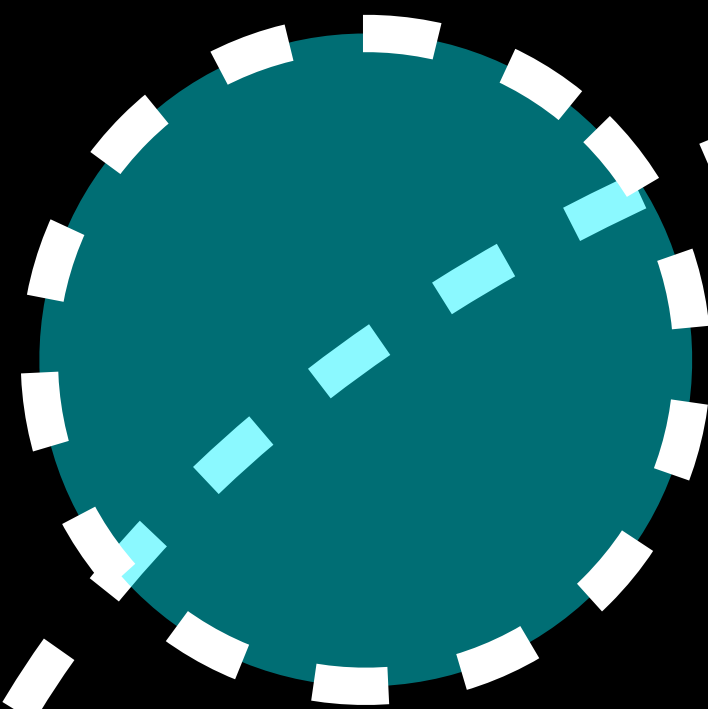


AI Augmented Inquiry

**What
Nobody
Knows
(Yet)**

**What AI
Knows**

**What AI
Doesn't
Know**





2022

2023

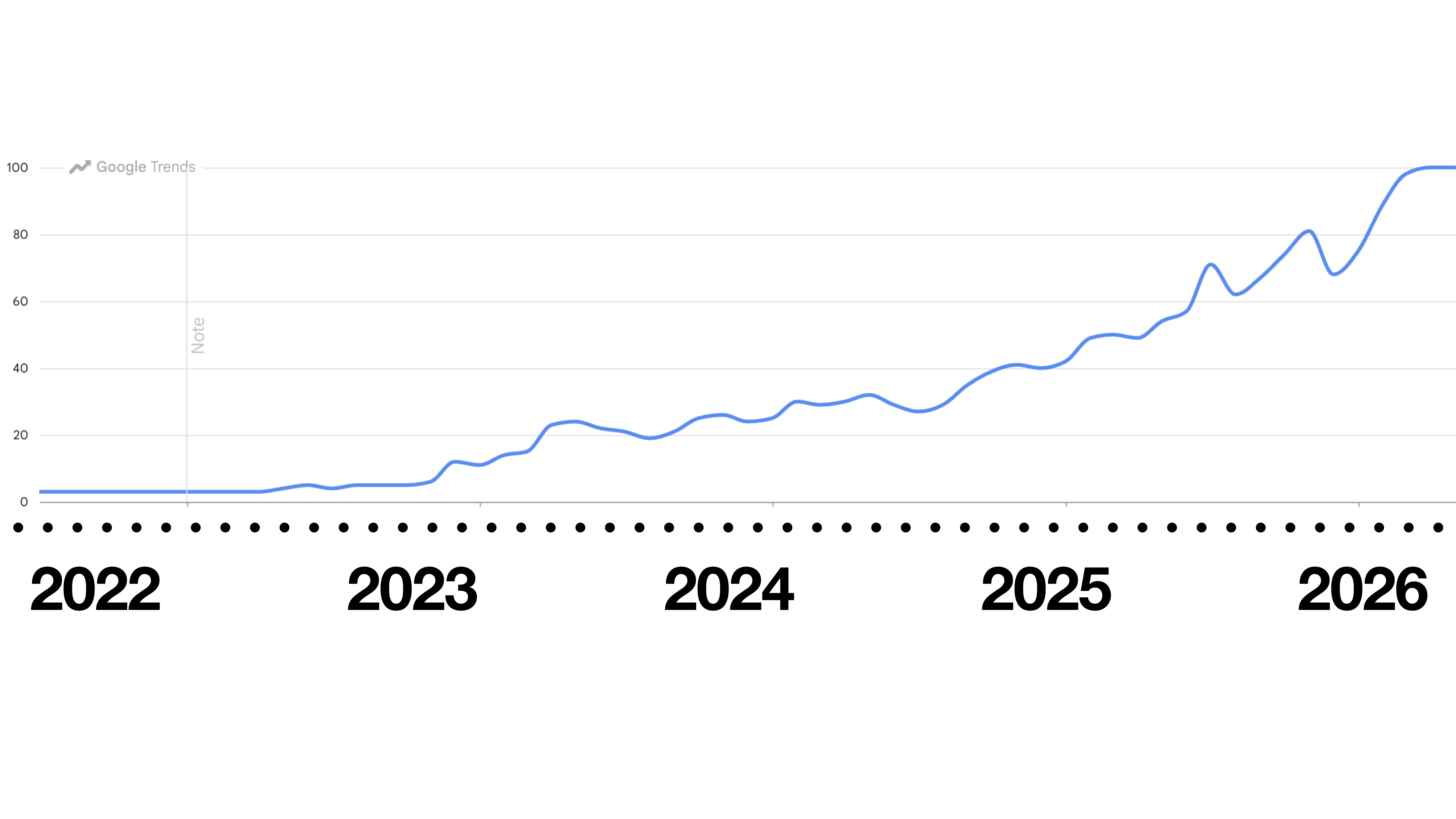
2024

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EDCI

(Em Dash Correlation Index)







2022

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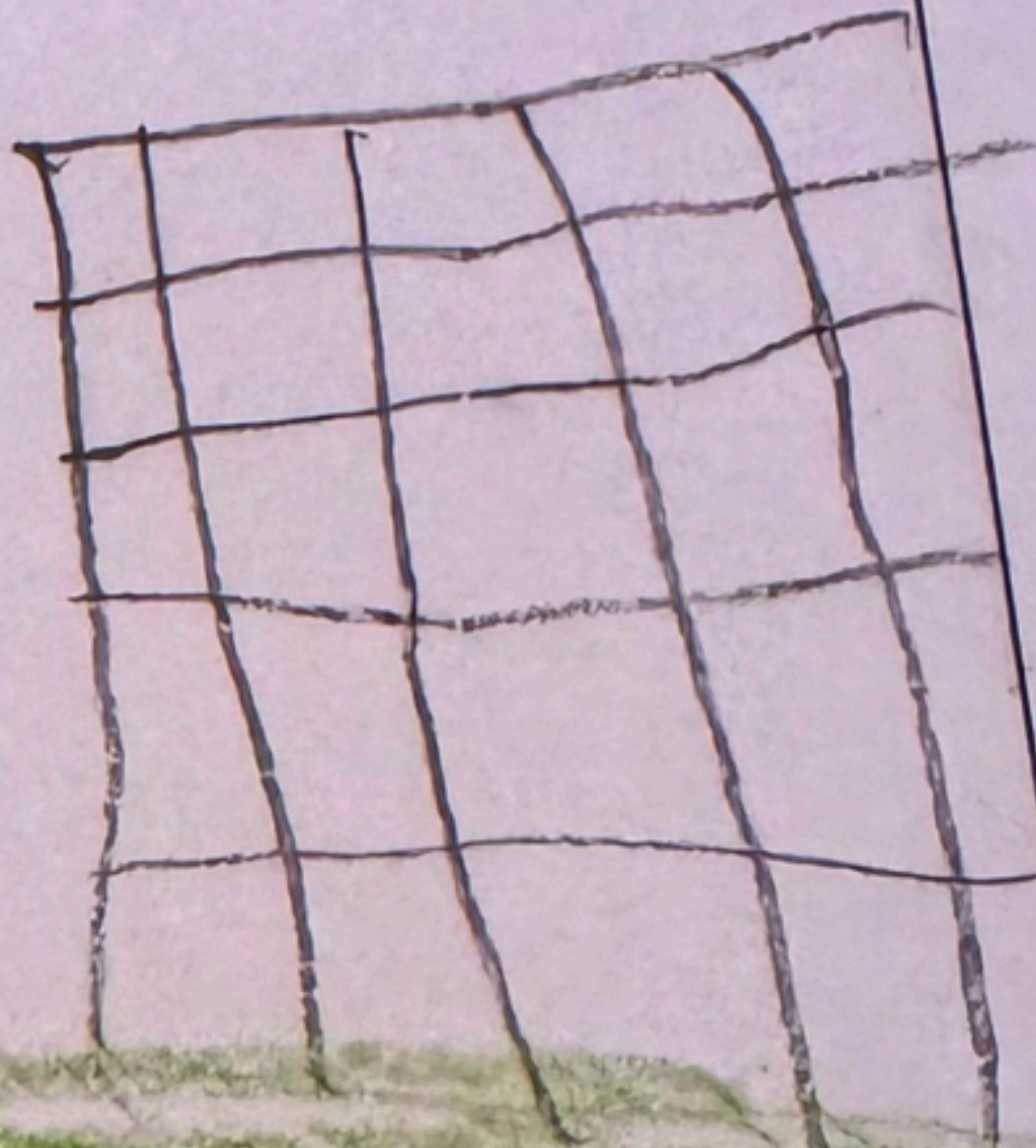
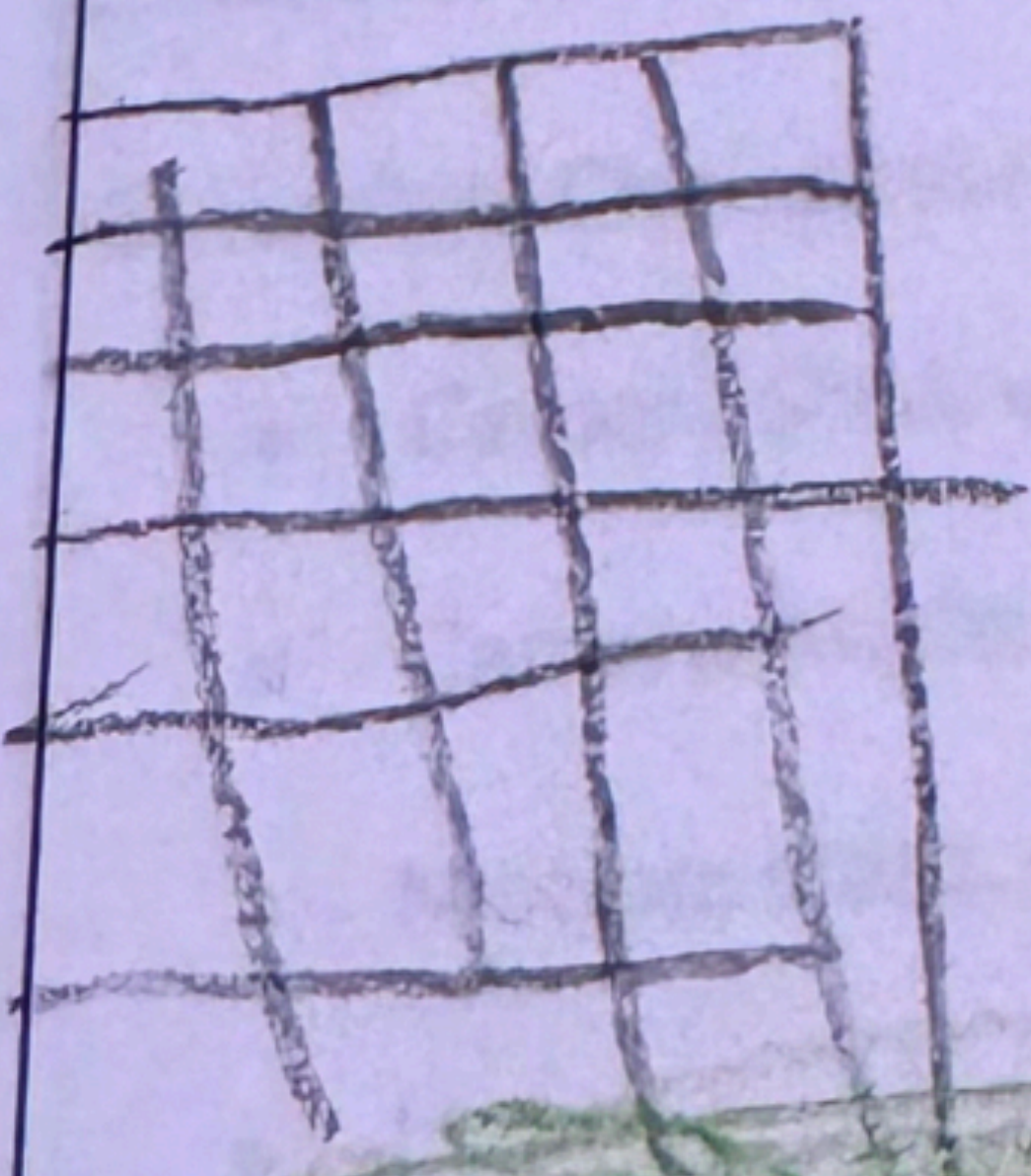
OpenAI



Sora is no longer available. You can export your data at any time.

Export









NVIDIA RTX PRO 6000 Blackwell
Workstation Edition

NVIDIA RTX PRO[®]
6000 Blackwell
Workstation Edition





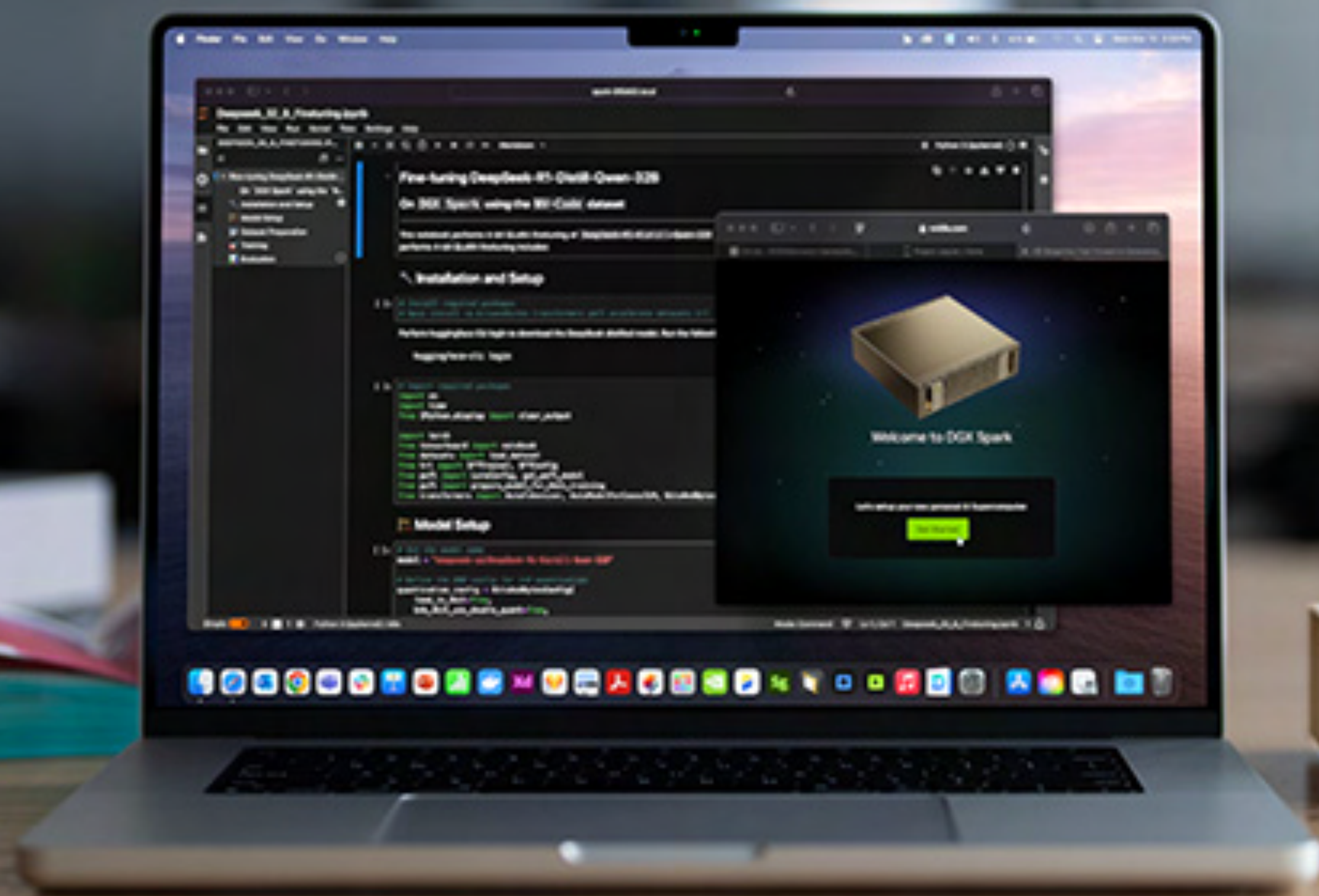
2022

2023

2024

2025

2026



A dark gray rectangular splash screen with rounded corners, featuring a window-style title bar at the top with three colored dots (red, yellow, green). The screen displays a welcome message, a large stylized logo, and a prompt to press Enter. The background is a solid orange color with black abstract shapes resembling stylized sun rays or starbursts.

* Welcome to Claude Code

CLAUDE
CODE

Press **Enter** to continue



Professional Learning Catalog

Northern Valley Curriculum Center

LEAD · CREATE · MODEL · SUSTAIN

artificial intelligence

×

12 of 125 workshops

PATHWAY

▼

☐

Connect18

☐

Design60

☐

Exchange29

☐

Explore18

GRADE LEVELS

▼

☐

Pre-K83

☐

K92

☐

191

☐

291

☐

390

☐

494

☐

596

Q

EXPLORE

AI as a Tool: Efficiency for Teachers and New Learning for Students

👤

Marc Cicchino

NVRHS

This is an insightful introductory workshop on harnessing the power of artificial intelligence (AI) to revolutionize teaching and learning! The session will provide guidance to educators as they explore how AI ca...

Artificial Intelligence

🎓 Pre-K–12

📅 11/11/2026

Q

EXPLORE

AI as a Tool: Efficiency for Teachers and New Learning for Students

👤

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Artificial Intelligence

🎓 Pre-K–12

📅 11/18/2026

↻

EXCHANGE

Artificial Intelligence Roundtable

👤

Kimberly Weber

👤

Francesca Rivellini

Harrington Park/Closter

🎨

DESIGN

Gemini Gems for Specific Tasks

👤

Marc Cicchino

NVRHS

According to Google, Gemini Gems are “custom, specialized versions of



 Search courses, departments, topics...

- Grade 9
- Grade 10
- Grade 11
- Grade 12
- AP
- Honors
- CTE

NAVIGATE

-  Overview
-  English 34
-  History & Social Sciences 27
-  Mathematics 26
-  Science 22
-  World Languages 22
-  Health & Physical Ed 4
-  Business Education 9
-  Family & Consumer Sci 7
-  Music 14
-  Technology & Engineering 17
-  Theatre Arts 7
-  Visual Arts 15

Welcome to Northern Valley

Explore the complete 2025-26 course catalog for Northern Valley Regional High School District. Use the search bar and filters above to find courses, or browse by department using the sidebar navigation.

211

TOTAL COURSES

35

AP COURSES

31

HONORS COURSES

24

CTE COURSES

71

DUAL ENROLLMENT

13

DEPARTMENTS

Graduation Requirements — 24 Credits Minimum

 English

4 credits required

 Social Studies

3 credits (US 1, US 2, World)

 Mathematics

3 credits (from Algebra)

 Science

3 lab courses (incl. Bio)

 World Language

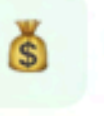
1 credit minimum

 Health & PE

Every year enrolled

 Visual & Performing Arts

1 credit required

 Personal Financial Literacy

0.5 credits required

 Career Ed / CTE

1 credit required

APPLE DISTINGUISHED SCHOOL
APPLE DISTINGUISHED DISTRICT

NORTHERN VALLEY REGIONAL HIGH SCHOOL

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At Northern Valley Demarest, we personalize learning, prepare students for the complexities of college and career, and champion confident, responsible citizenship, with Apple technology in every classroom.



WATCH OUR APPLE DISTINGUISHED SCHOOL STORY

Classroom Walkthrough *Insights*

183 walkthroughs • Jan 8 – Apr 30 2026 • NVOT & NVD • 13 content areas

EXPLORE THE DATA

Showing **183** of 183 walkthroughs

Building ▾

Grade ▾

Content ▾

Course level ▾

Segment ▾

Type ▾

Learning ▾

Grouping ▾

SAMR ▾

TPACK ▾

Differentiation ▾

Context ▾

WALKTHROUGHS

183

in current view

ACTIVE LEARNING

58%

students constructing

COLLABORATIVE

43%

pairs or small groups

DIFFERENTIATION

45%

beyond one shared task

FULL TPACK

27%

all three domains

TECH TRANSFORMS

16%

modify / redefine

Active vs. passive learning

[click to filter](#)

Whether students were mostly constructing understanding or mostly receiving it.

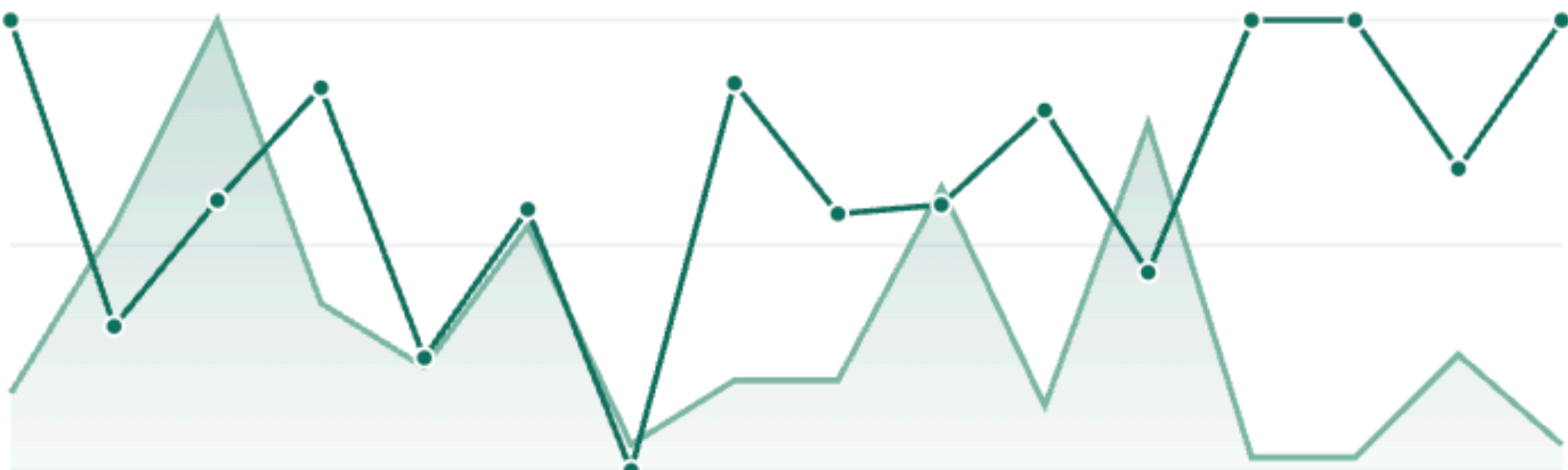


- **Active**
106 walkthroughs · 58%
- **Passive**
77 walkthroughs · 42%

Walkthrough cadence

Jan 5 – Apr 27

Observation volume by week, with the share rated active learning.



Doer
x1

Director
x100

Orchestrator
x10,000



Ran Scout uncovered areas for pass 2 >

Data Dashboard Security Audit >

Workflo	73	18m
w	agents	1s



Used ScheduleWakeup >

* 1 running task

Doer
x1

Director
x100

Orchestrator
x10,000

Multiplied
xN



PHENOMENAL COSMIC POWER

