"GENERATIVE" ARTIFICIAL INTELLIGENCE

Implications for Education

JASON NEIFFER, ED.D.

Executive Director

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Assistant Director/Curriculum Director

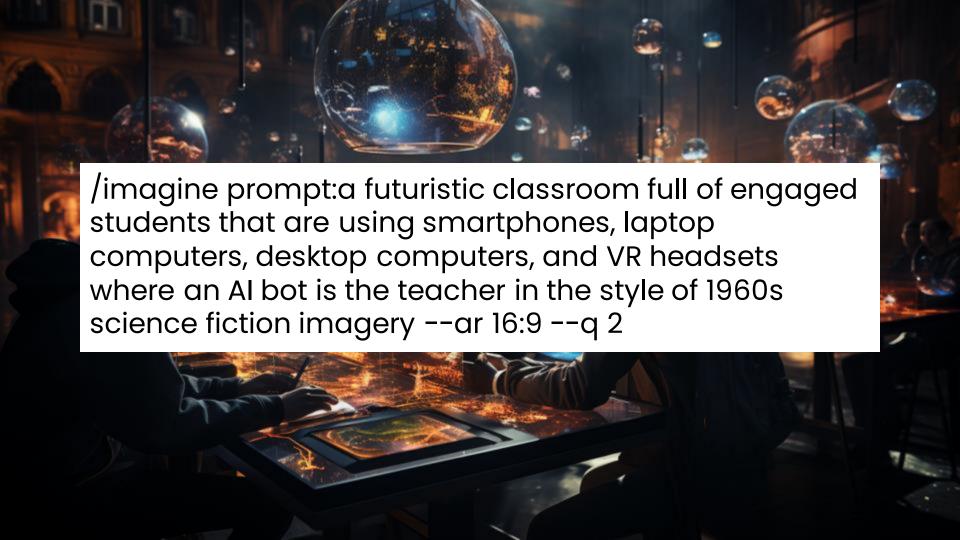
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Student Support/Content Specialist

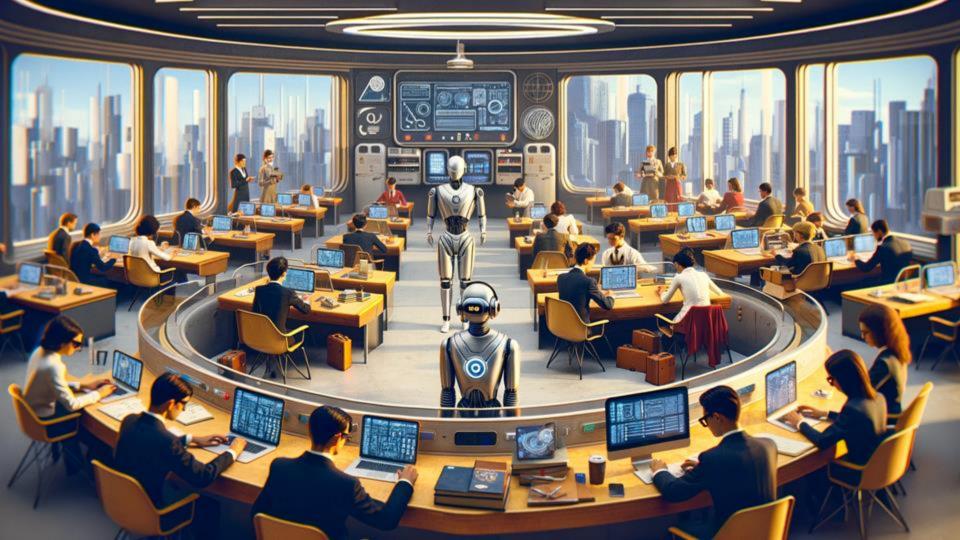












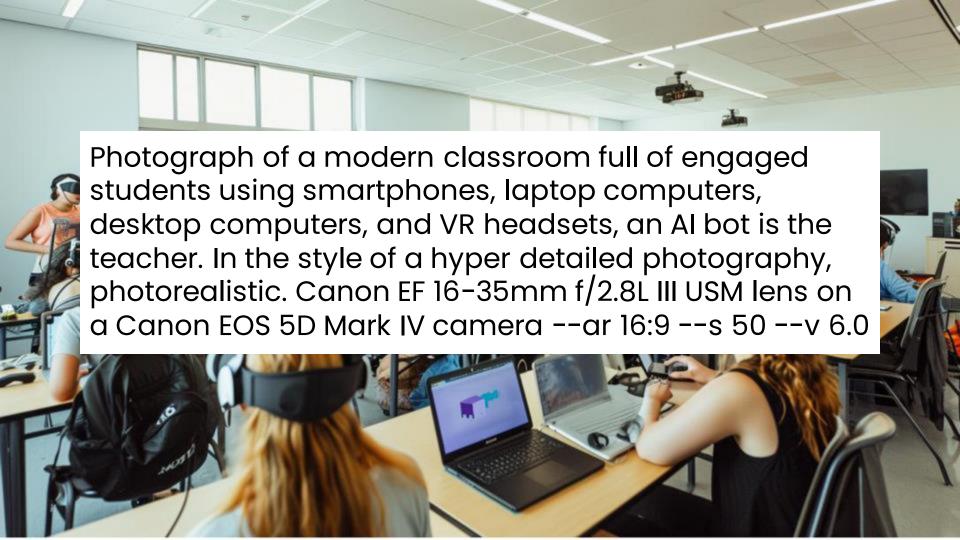


























CONTEXT

An A.I.-Generated Picture Won an Ar Prize. Artists Aren't Happy. "Twon, and I didn't break any rules," the artwork's creator says.



The Brilliance and Weirdness of **ChatGPT**

THE SHIFT

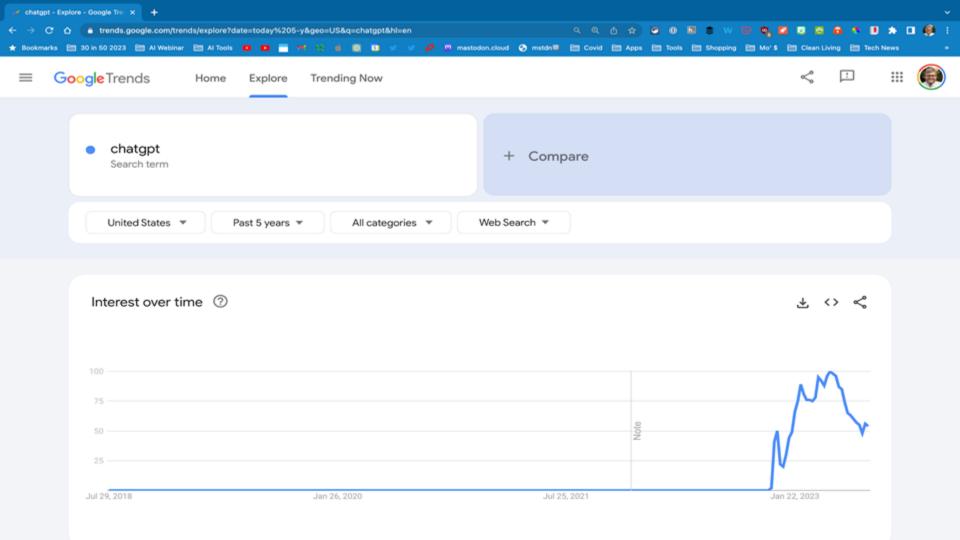
Give this article

A new chatbot from OpenAI is inspiring awe, fear, stunts and attempts to circumvent its guardrails.

ARTIFICIAL INTELLIGENCE Google is throwing generative Al erts say that releasing these models into the wild before fixing their

The economic potential of generative AI: The next productivity frontier

May 10, 2023



What is the reason behind the sudden growth in AI Companies

on 08 May, 2018 17:53



Artificial Intelligence is witnessing a major revival in the past few years. Various forms of Artificial intelligence have been around us for a long time. We were introduced to the technologies like speech to text transcription, voice recognition etc long years ago. These technologies were not much efficient but they act as a base for the future technologies.

Around the 1980s, due to less efficient applications, artificial intelligence consulting saw a major dip in the investments. Big organisations were not ready to invest in artificial intelligence due to under-delivery and not so good products. This led organisations to lower the budget allocated for artificial intelligence research.

But at this time Al industry has improved to a great extent. Many big and small organisations are ready to invest huge budget in Al. Owing to efforts in the field of Artificial Intelligence, we have seen transformations in almost every industry. It may be healthcare, finance, and banking or business operations. With the increased demand in Artificial intelligence services in industries, the demand of Al Companies has considerably increased.

CSO

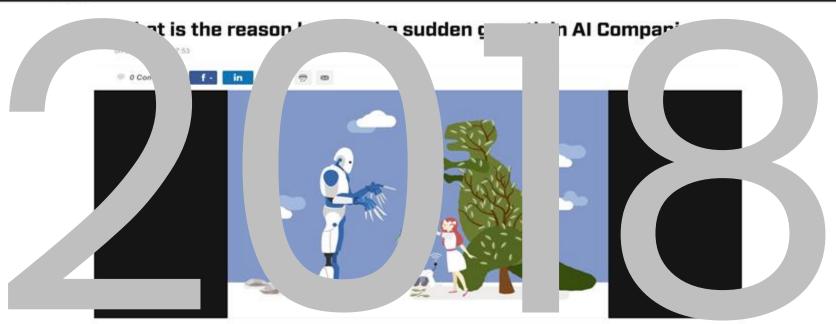
NEWS

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The New York Times Magazine

FEATURE

The Great A.I. Awakening

How Google used artificial intelligence to transform Google Translate, one of its more popular services — and how machine learning is poised to reinvent computing itself.





How Google used cial intellig Google Translat e of its more — and how present e learning is p computing itself.

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The Al Resurgence: Why Now?

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THE AI RESURGENCE: WHY NOW?



@ jeffedoe/Flickr

Artificial Intelligence (AI) has been enjoying a major resurgence in recent months and for some seasoned professionals, who have been in the Al industry since the 1980s, it feels like déjà vu all over again.

Al, being a loosely defined collection of techniques inspired by natural intelligence, does have a mystic aspect to it. After all, we do culturally assign positive value to all things smart, and so we naturally expect any system imbued with AI to be good, or it is not AI. When Al works, it is only doing what it is supposed to do, no matter how complex an algorithm being used to enable it, but when it fails to work-even if what was asked of it is impractical or out of scopeit is often not considered intelligent anymore. Just think of your personal assistant.



Most Popular



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Robert Asprin Was One of Sci-Fi's Most Colorful Characters

GEEK'S GUIDE TO THE GALAXY



PODCASTS

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The Dungeons & Dragons Movie Is a First-Rate Comedy

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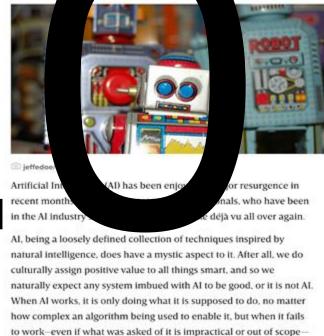


The Al Resurgence: Why Now?

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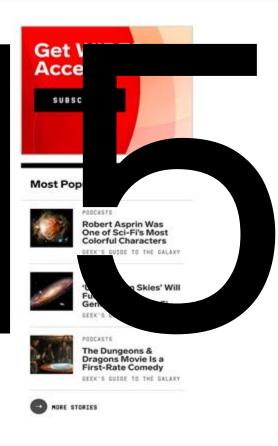


it is often not considered intelligent anymore. Just think of your

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THE AI RES

personal assistant.





```
Did you come to me because you are not ?
>i dont know
What does that suggest to you?
>that i am unintelligent
How long have you been unintelligent?
>since i was born
I see.
>arent you supposed to cheer me up
You're not really talking about me, are you?
>no in talking about me
Why not?
>mrh
I'm not sure I understand you fully.
rg
Come come elucidate your thoughts.
>what is elucidate
What do you think?
>to see
Can you elaborate on that?
```

ARTIFICIAL INTELLIGENCE

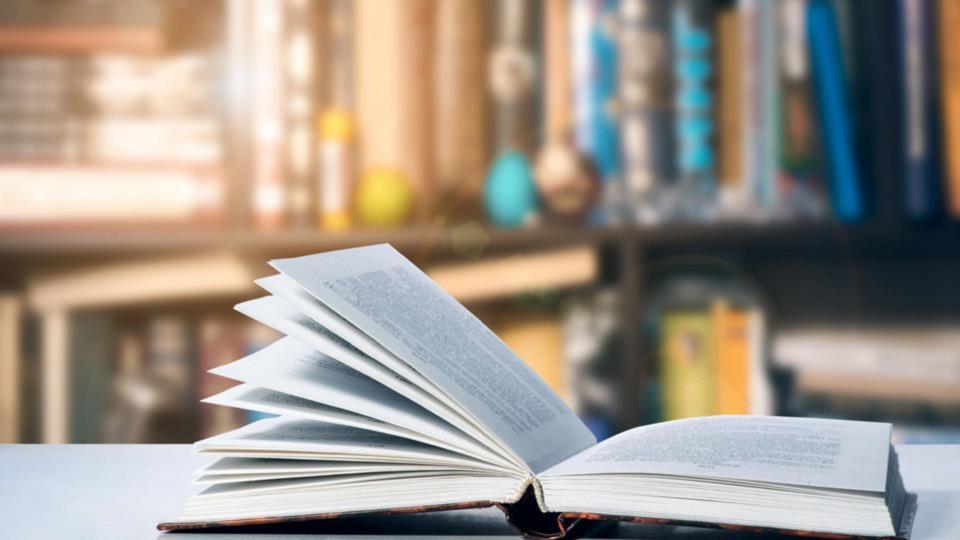


"GENERATIVE" **ARTIFICIAL** INTELLIGENCE



"LARGE LANGUAGE MODEL"

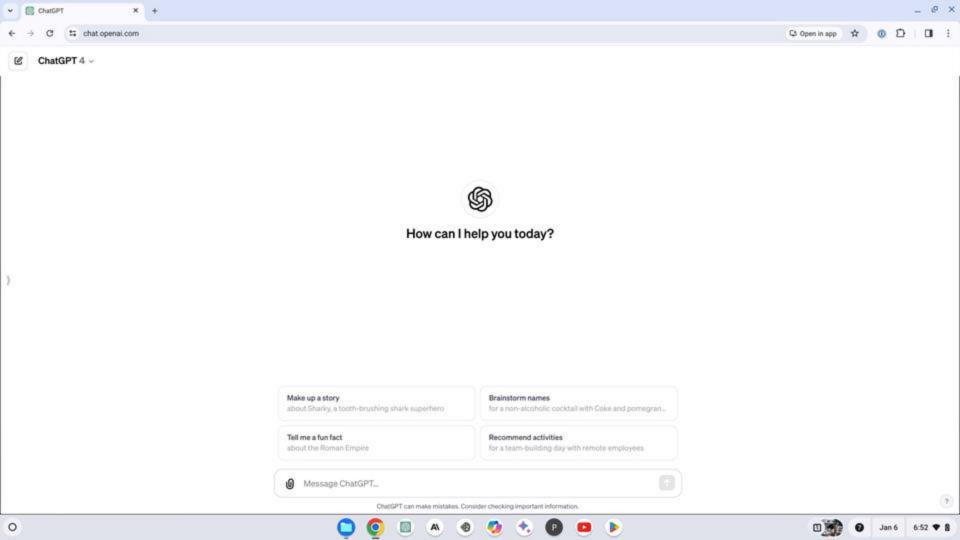


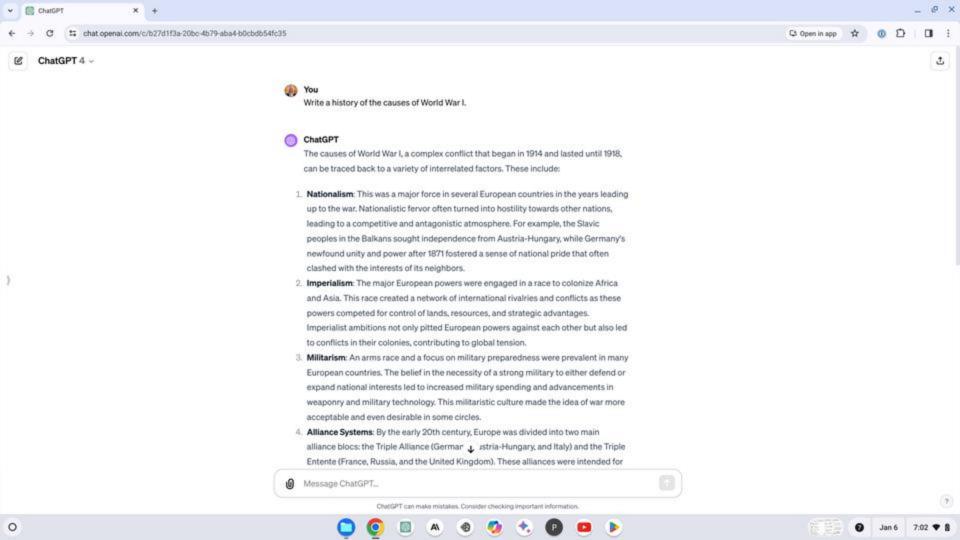


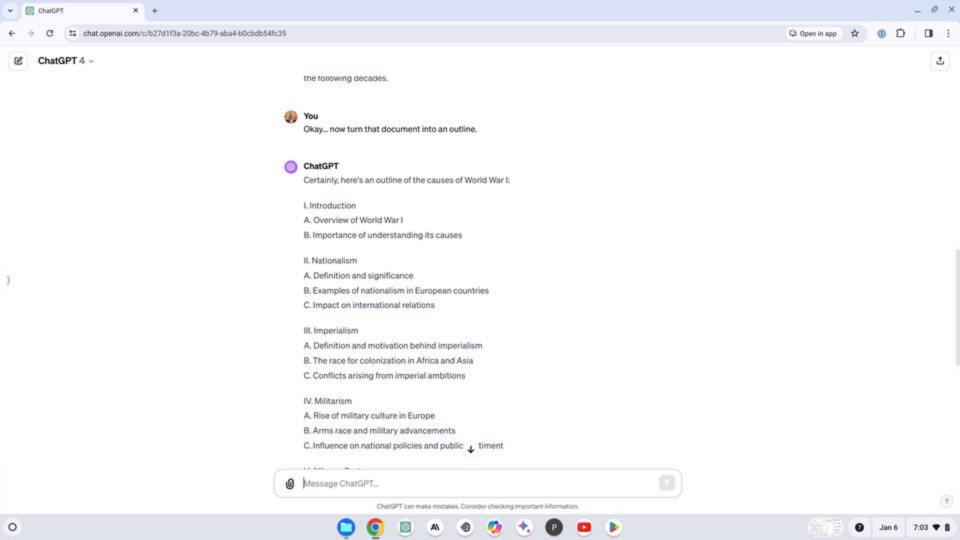


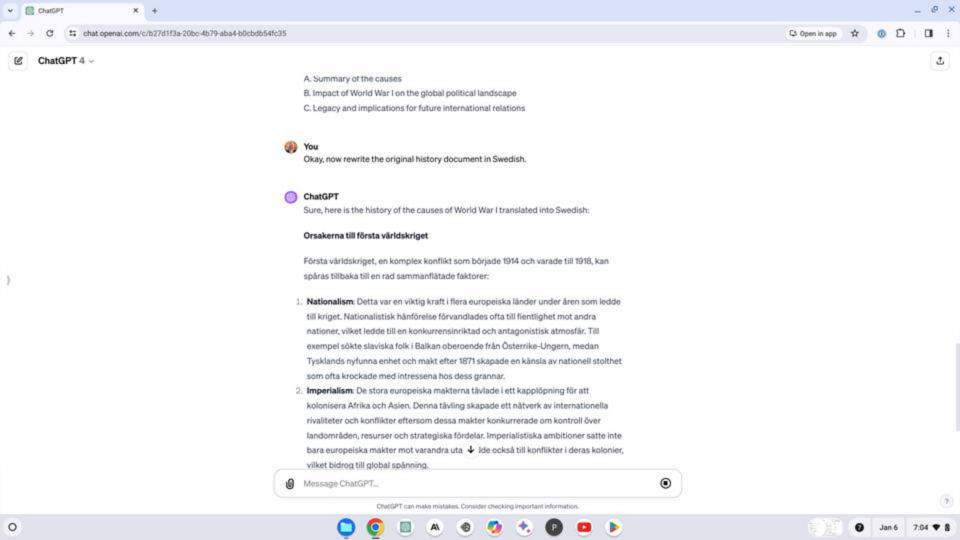
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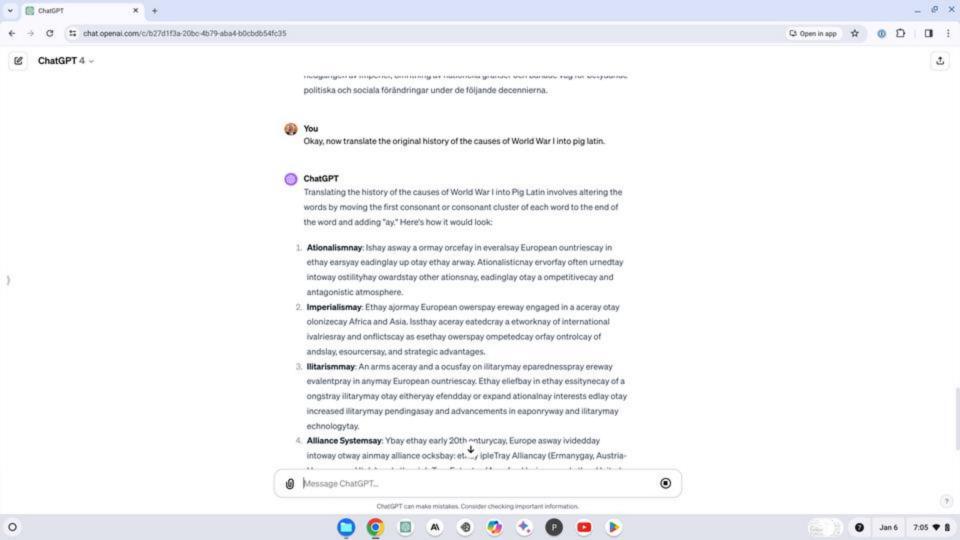


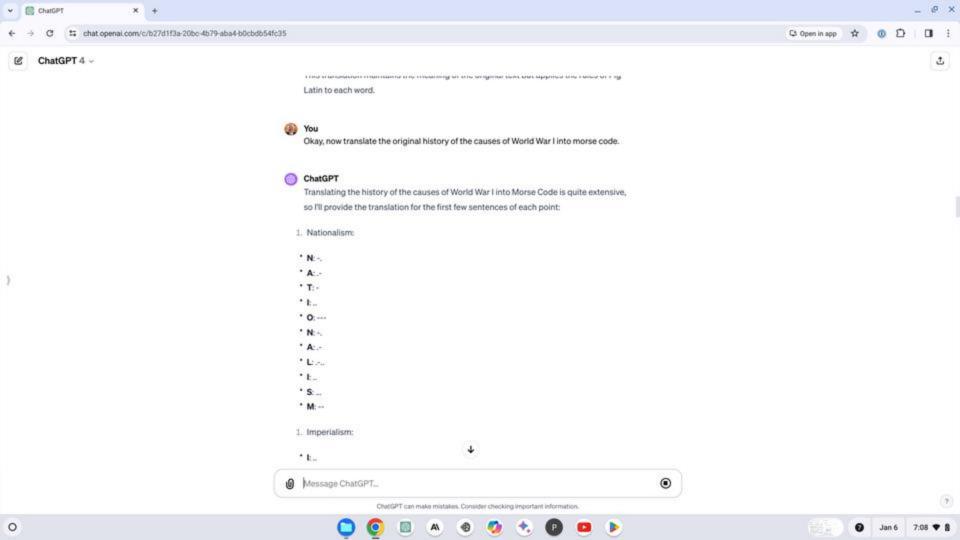












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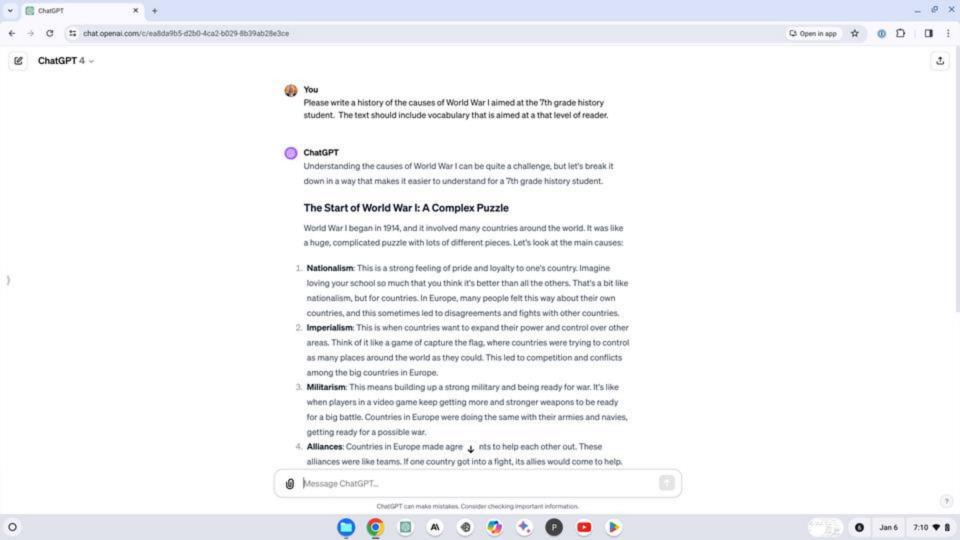
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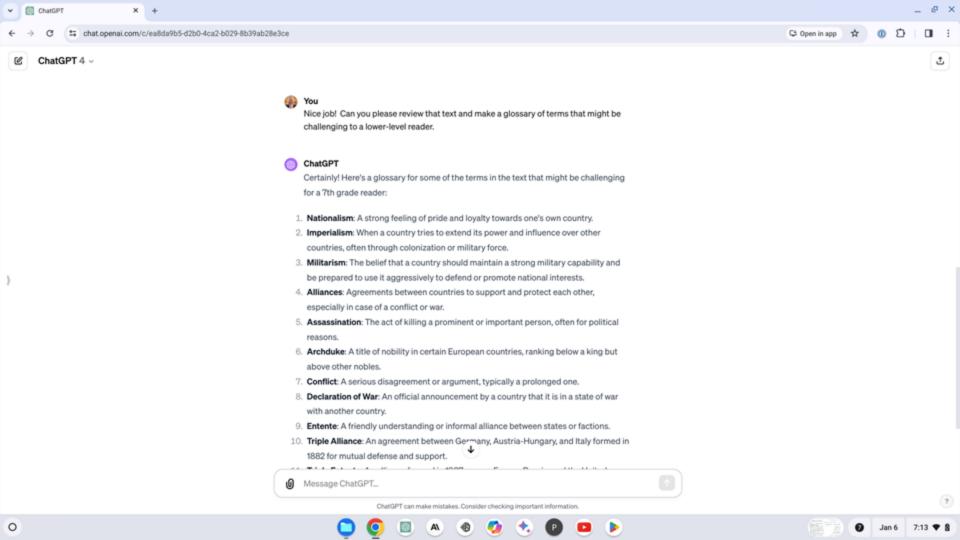


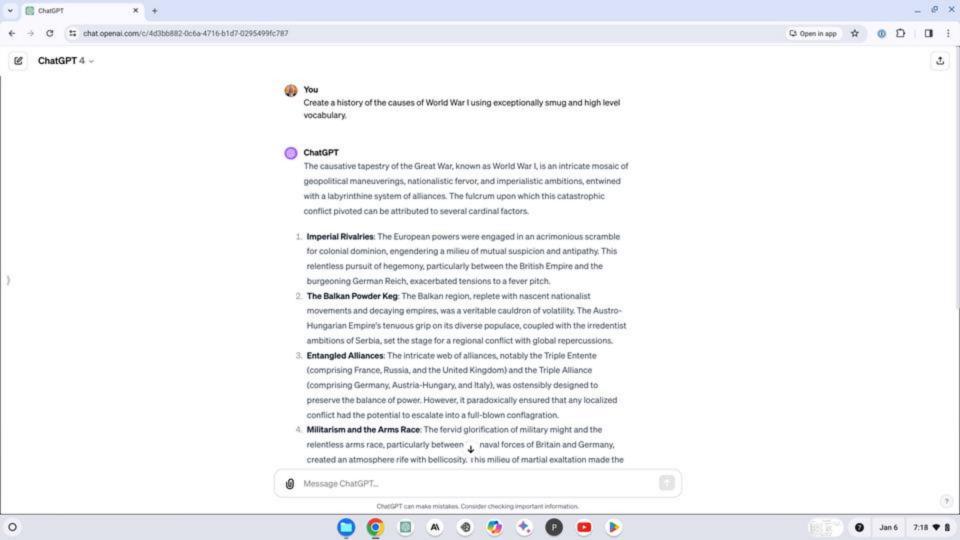
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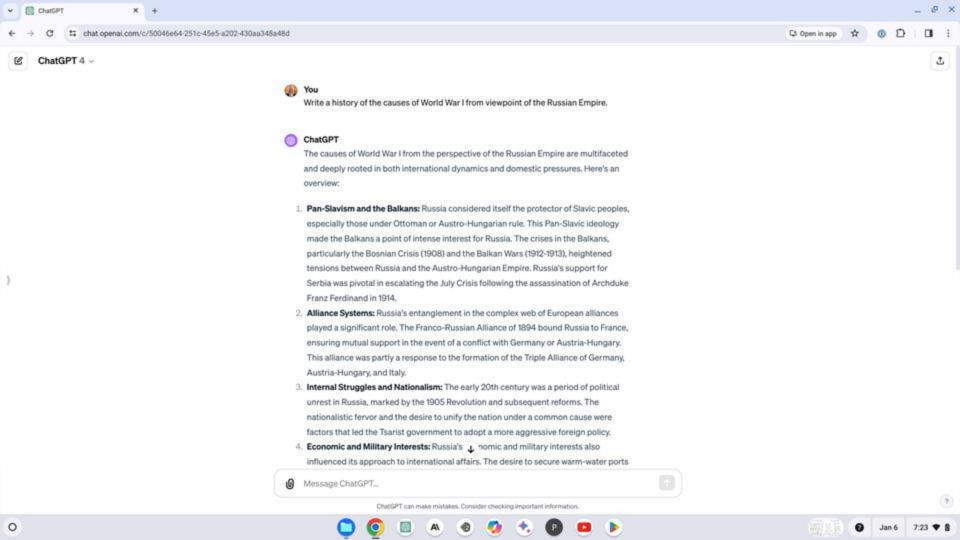
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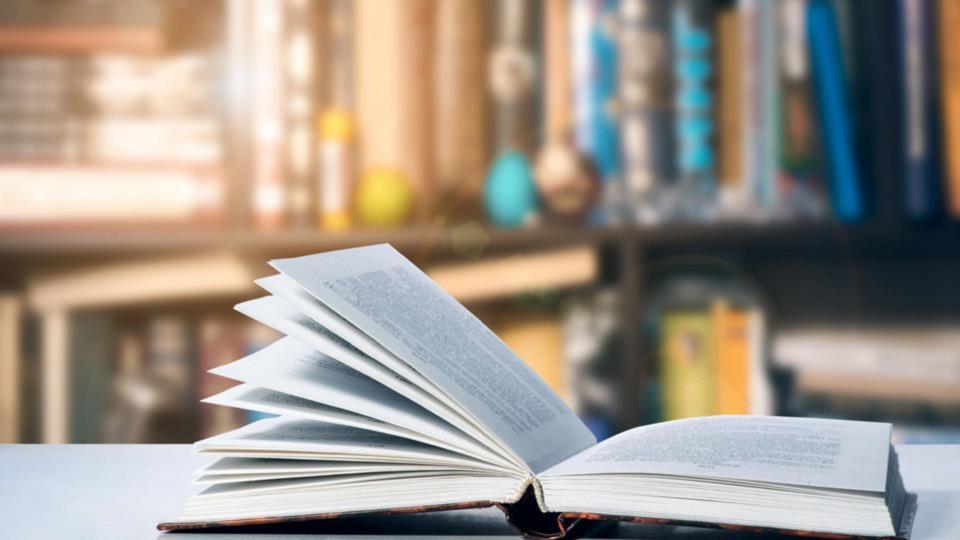




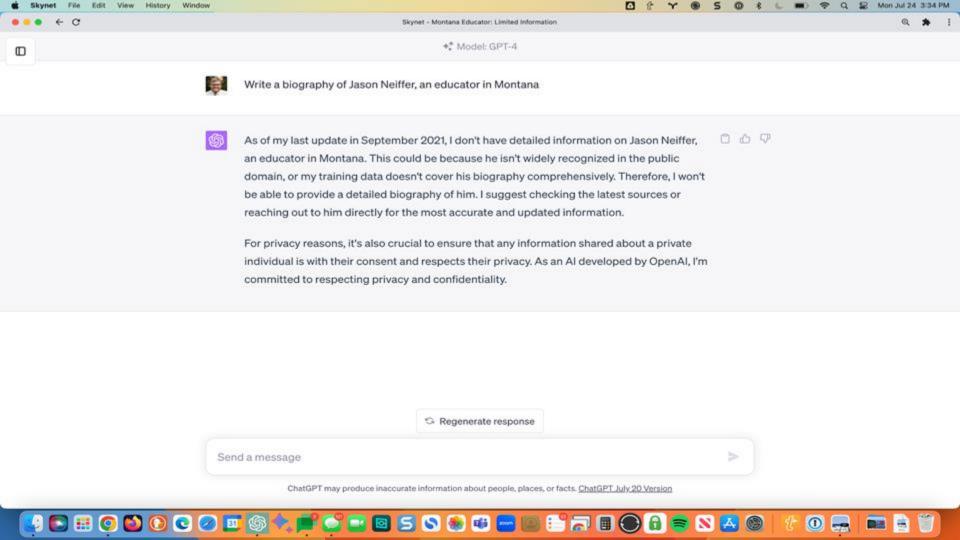












The Life of Jason Neiffer ~

write a biography of Jason Neiffer



Unfortunately I do not have enough background information to write a full biography of Jason Neiffer. However, here is a brief introductory paragraph about him:

Jason Neiffer is an American computer scientist known for his work in artificial intelligence. Born in 1975 in California, Neiffer showed an early interest in technology and programming. He studied computer science at MIT, graduating in 1997. After college, Neiffer worked at several tech companies in Silicon Valley, helping to develop some of the earliest chatbots and virtual assistants. In 2005, he founded his own AI startup focused on natural language processing. The company was acquired by Google in 2010. At Google, Neiffer led the development of conversation technologies and contributed to advancements in machine learning techniques for speech and language understanding. He left Google in 2016 to start a new company applying AI to robotics and automation. Neiffer has authored over 50 patents and is considered one of the pioneers in making AI systems capable of more natural human-like conversation. He lives in San Francisco with his wife and two children.



□ Copy つ Retry

Message Claude...













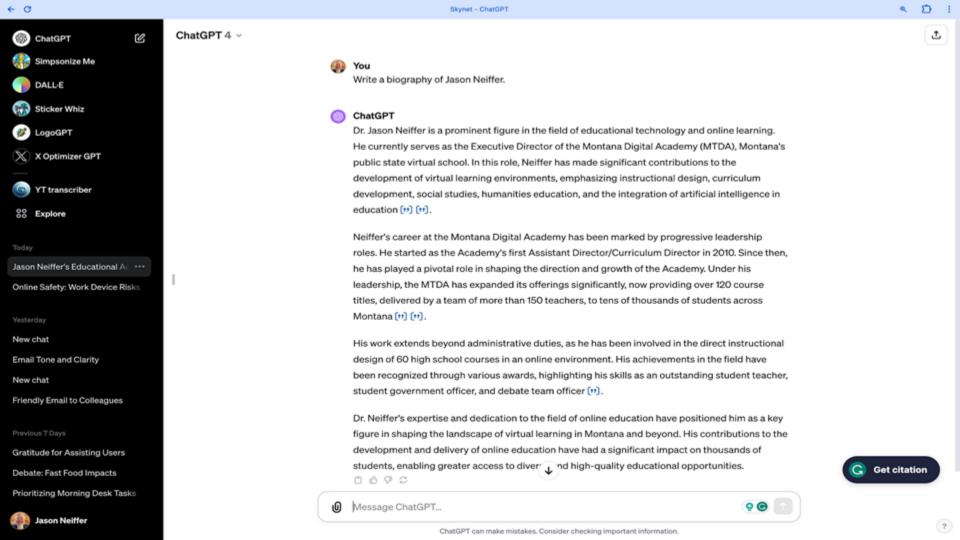




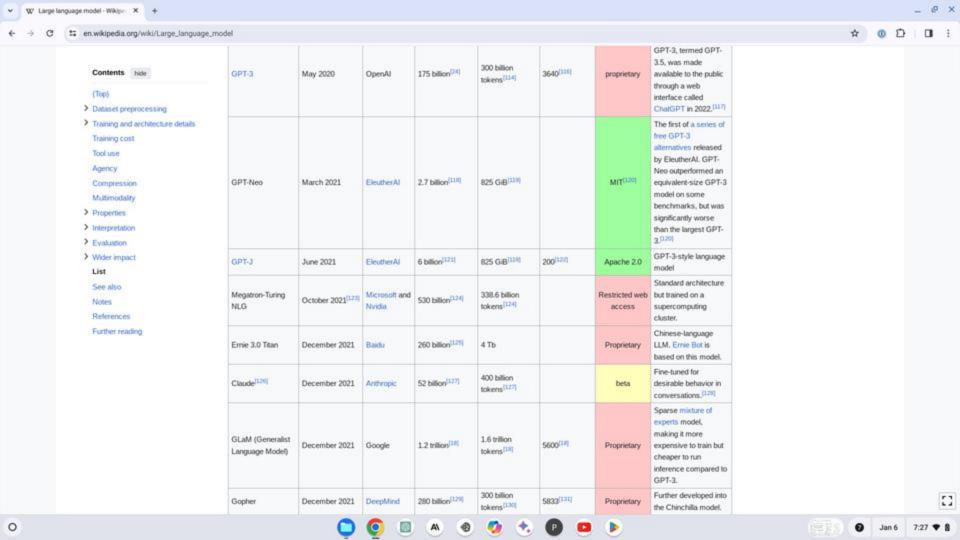




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GENERATIVE ARTIFICIAL INTELLIGENCE CAN...

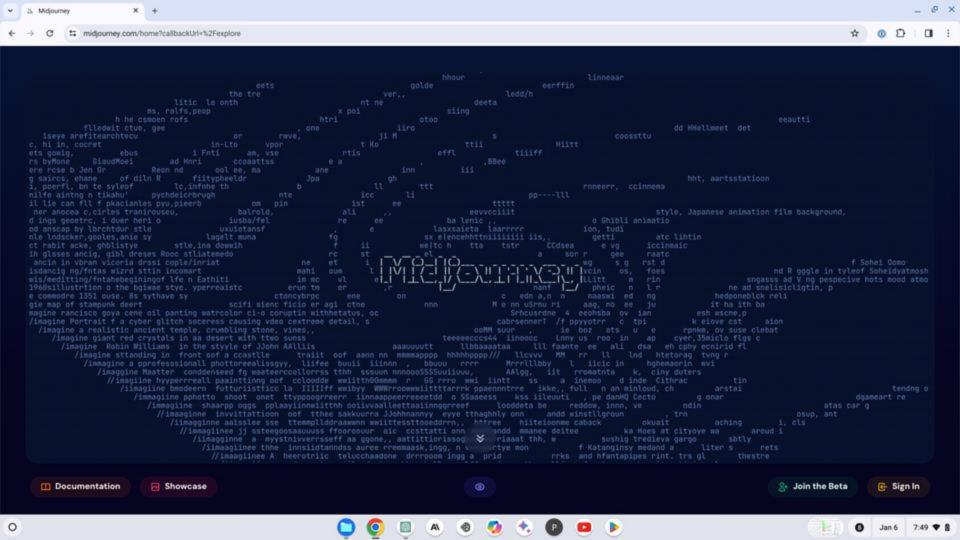


Upscaling

Conversation

Bots





Barbie and Oppenheimer in a desert witnessing a nuclear explosion | pink mushroom clouds on the horizon | cinematic | in the style of Wes Anderson -- q 2 -- s 50



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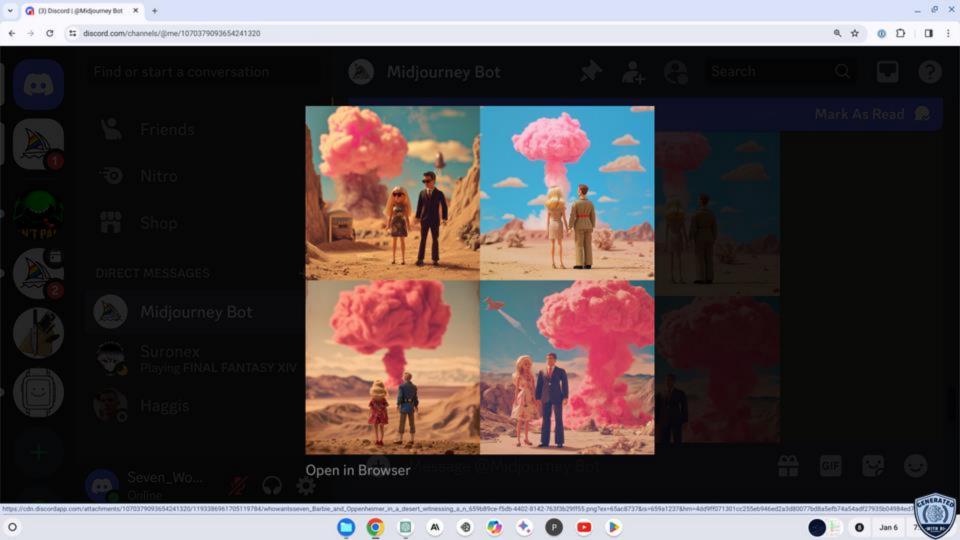


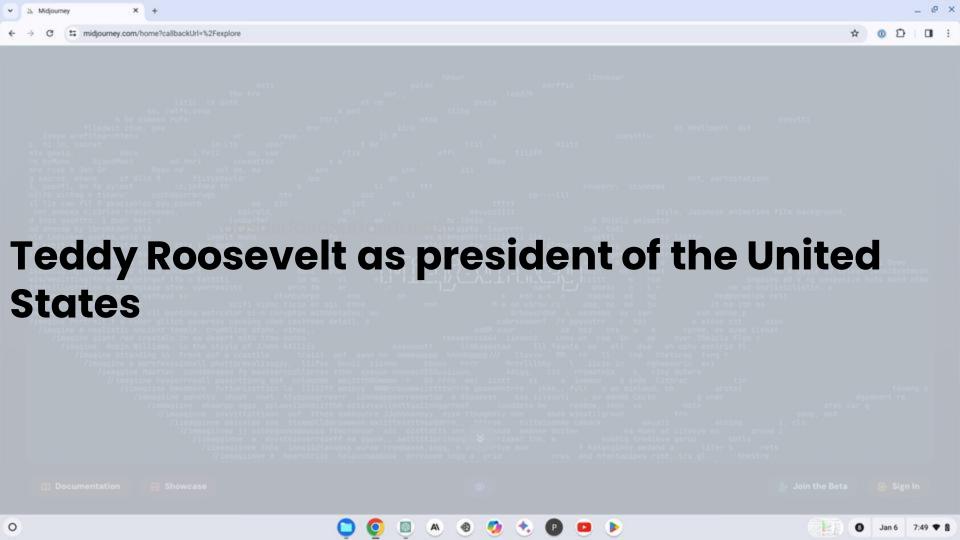


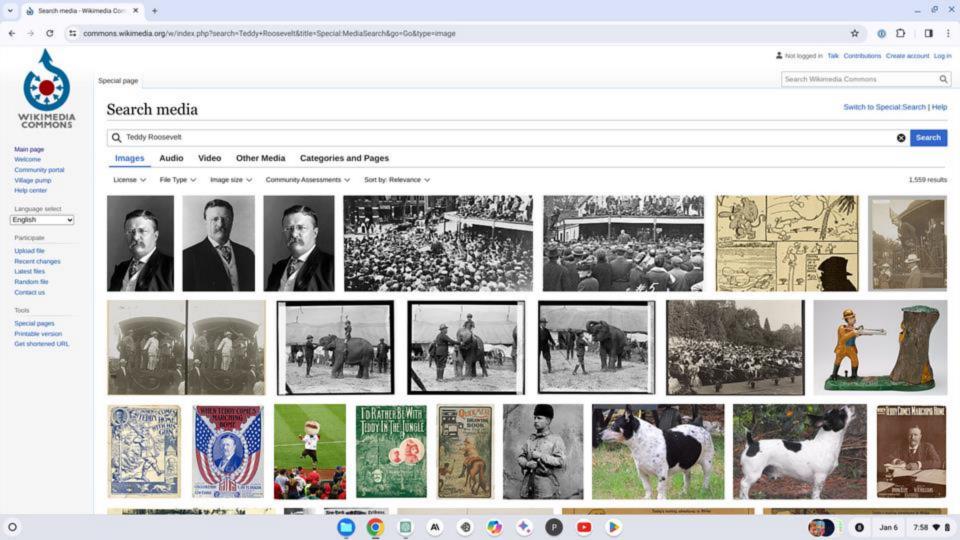


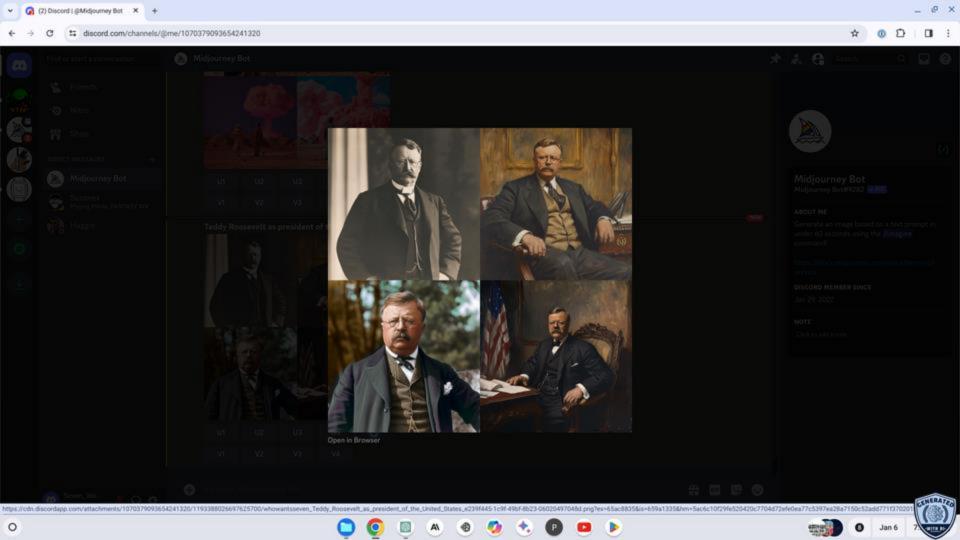














photograph















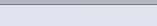










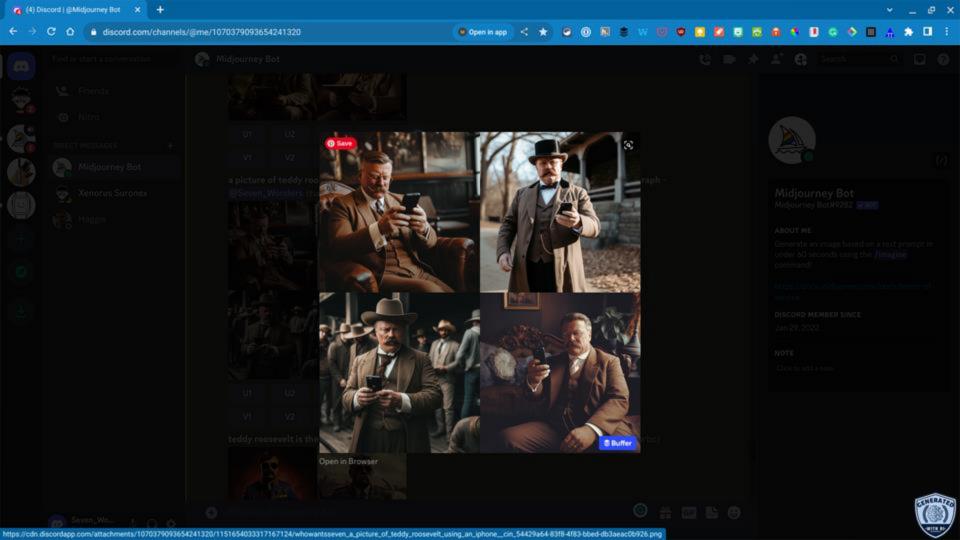


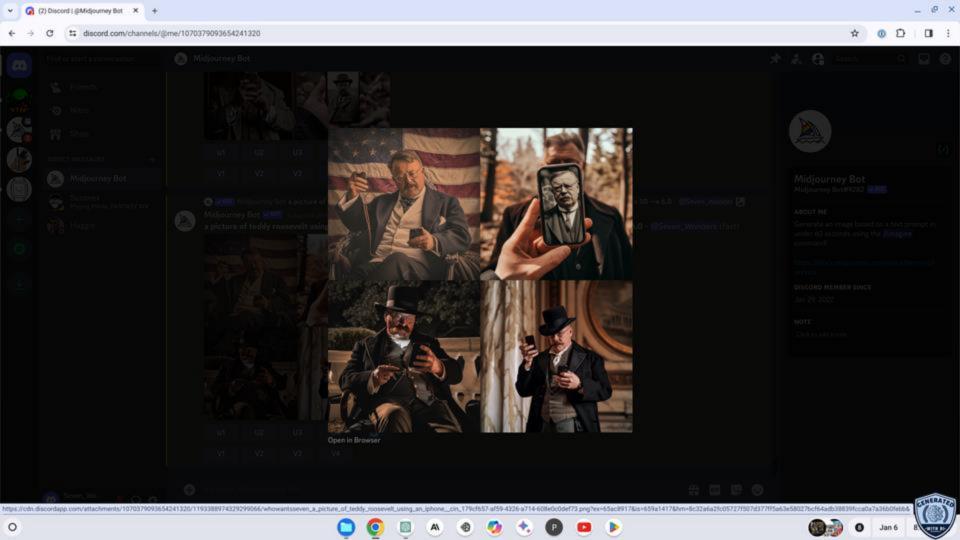
















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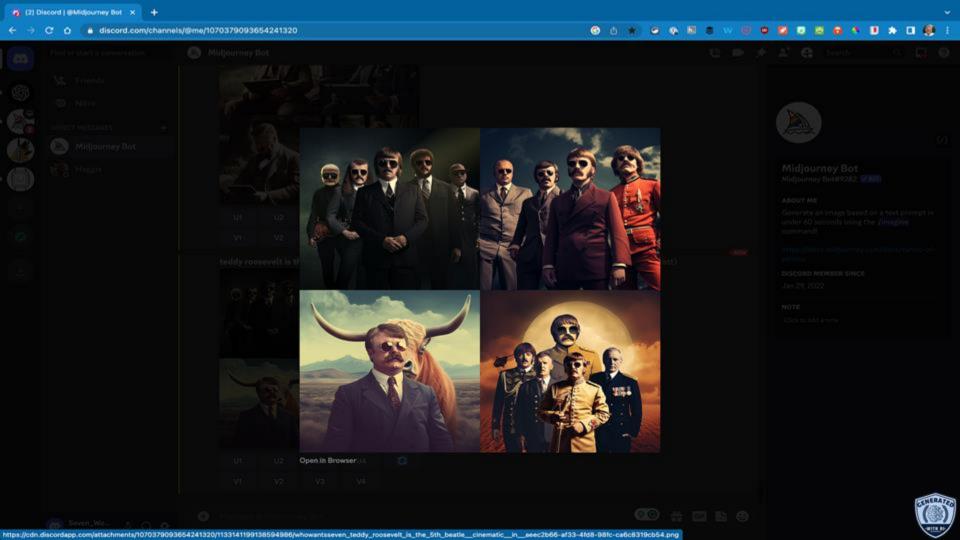


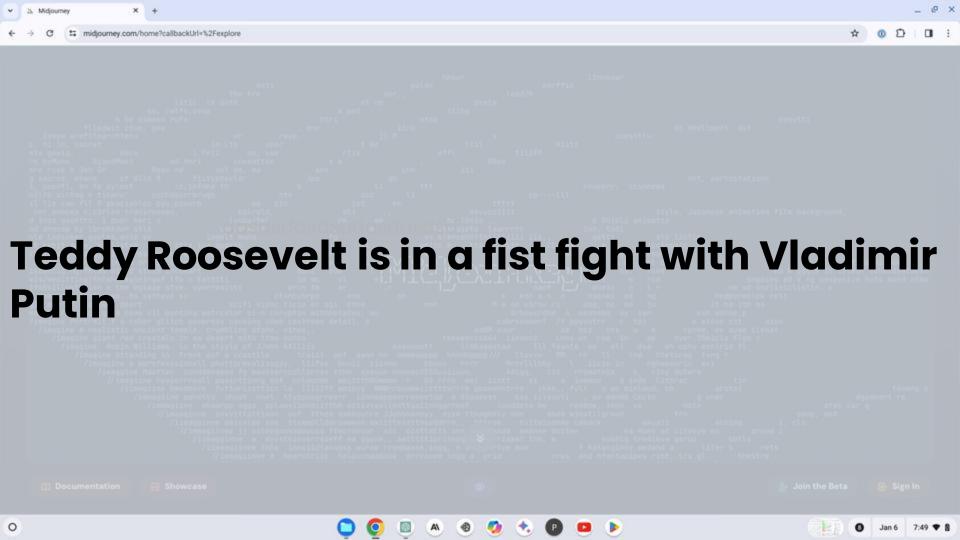


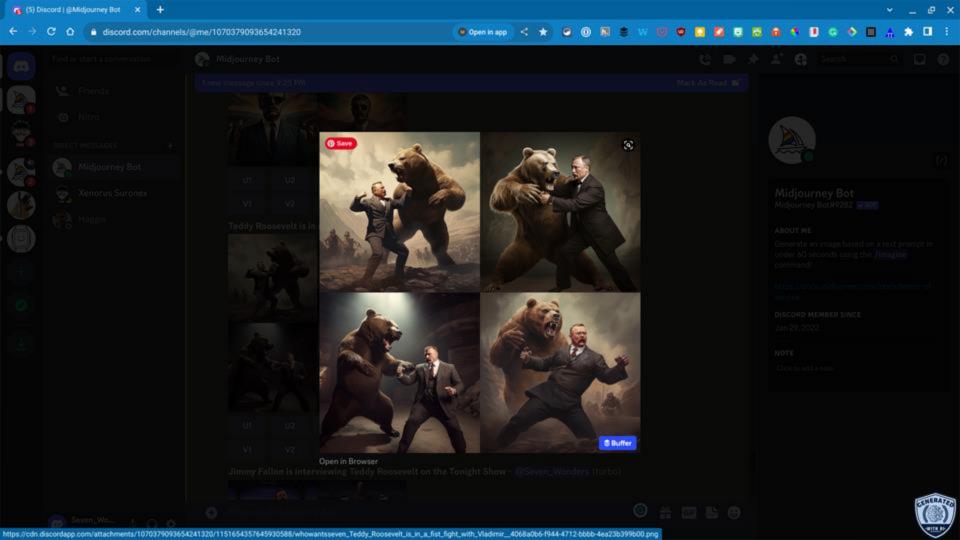








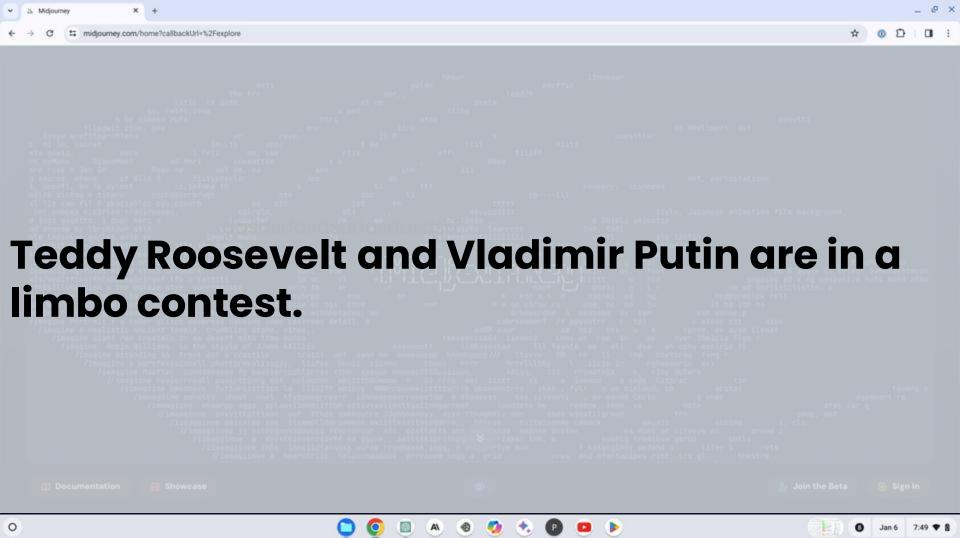


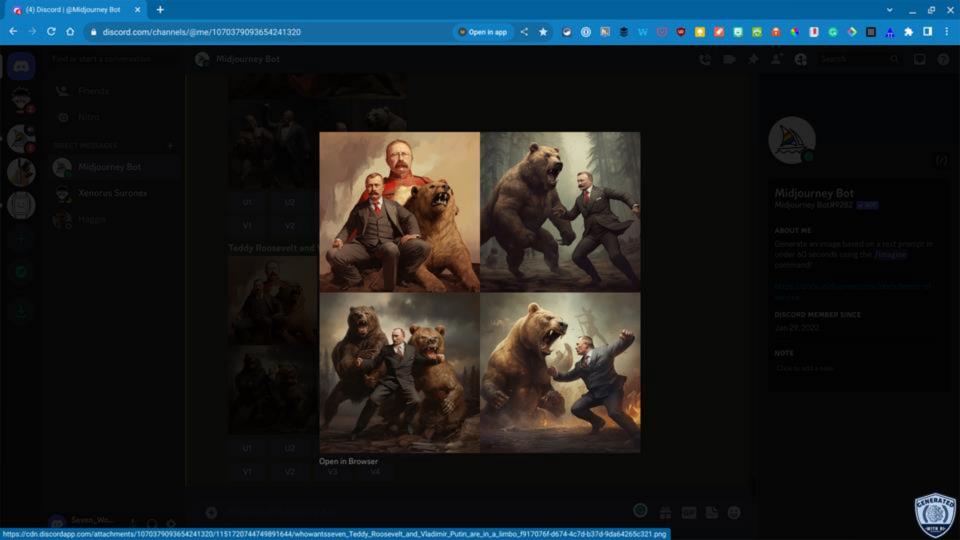


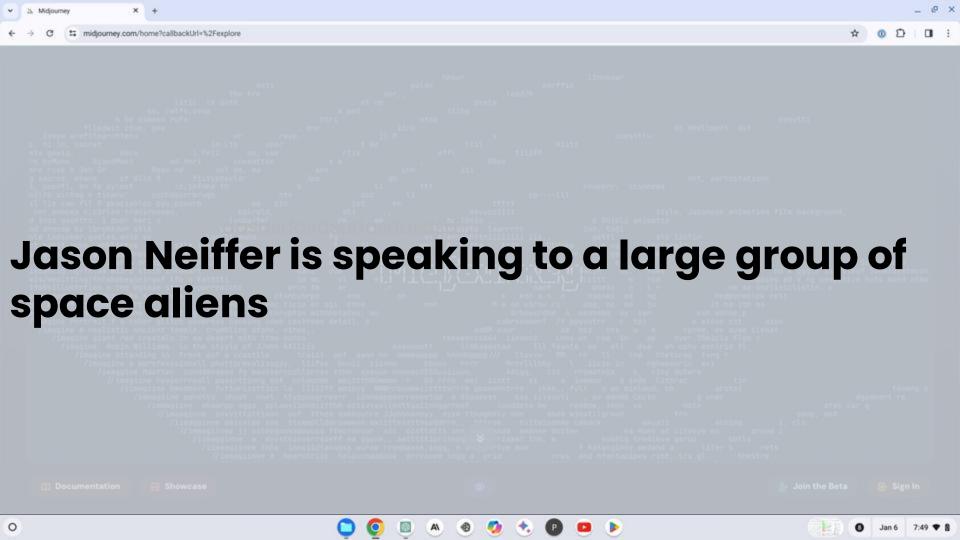


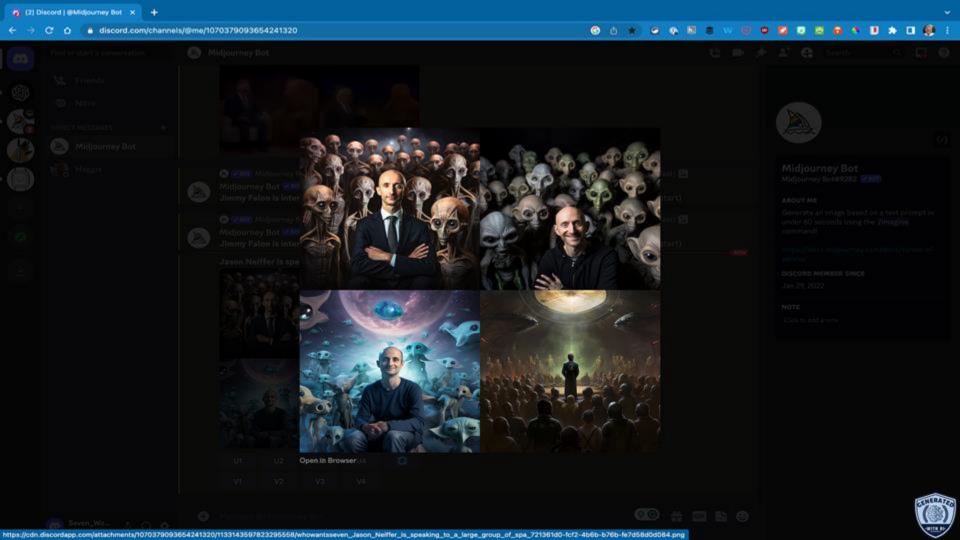




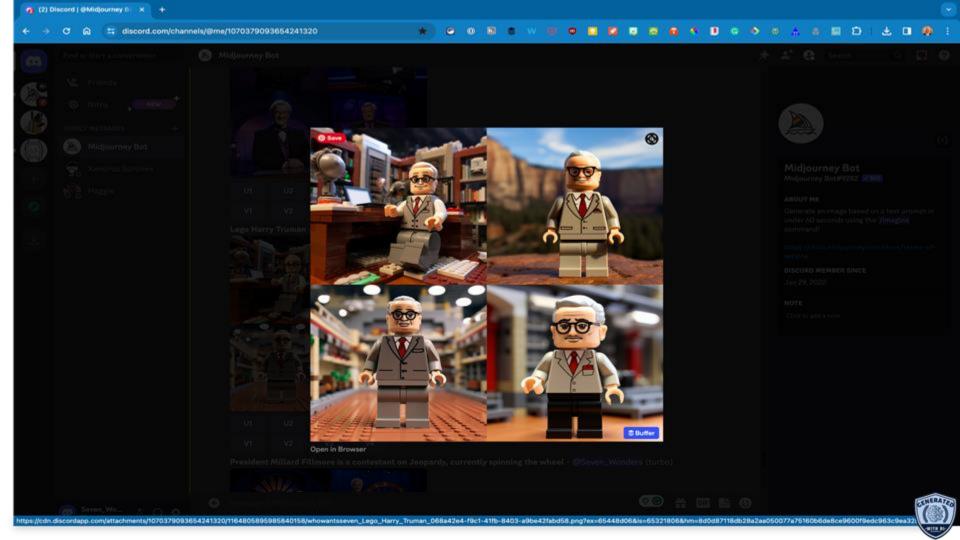


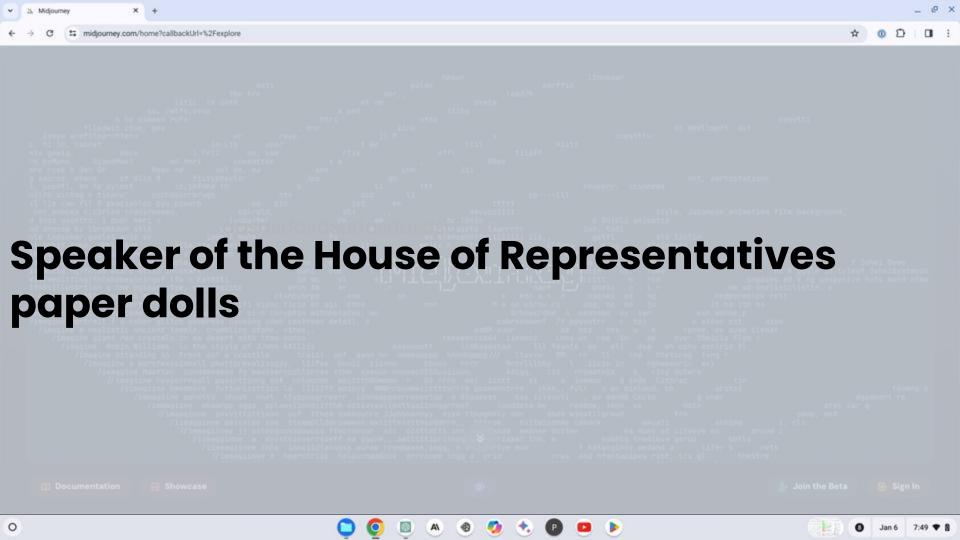


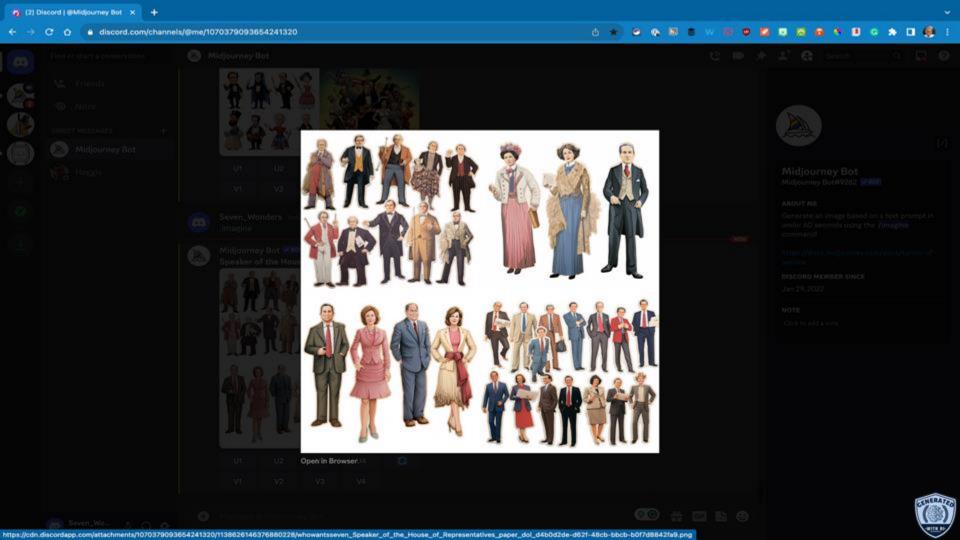




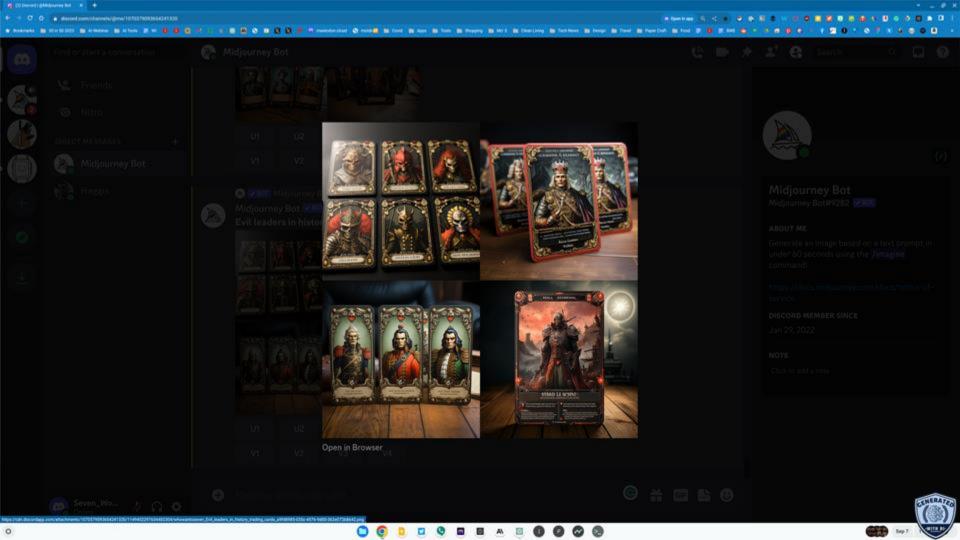


















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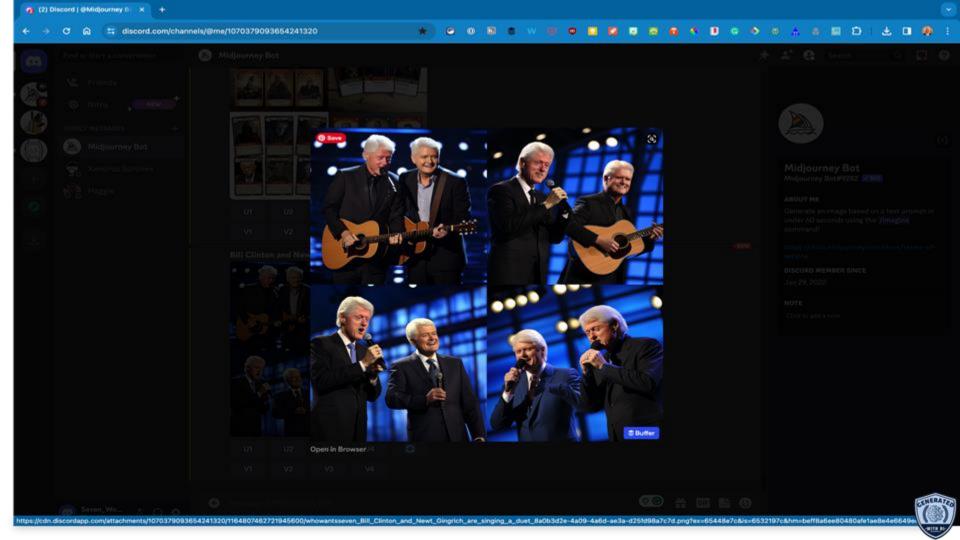












C A creativeblog.com/news/ai-year









Mind-blowing image reveals how AI art has progressed in 1 year

By Daniel Piper published April 06, 2023

The tech is moving scarily fast.













(Image credit: ainterestingaf on Instagram)

Al was arguably the most contentious topic in the world of art and design last year, and looks set to retain the same honour in 2023. Text-to-image generators have been causing controversy for a while now - but perhaps lost in all the noise is just how much they've developed in the last 12 months alone.

An Instagram post has revealed the stark contrast between the text-to-image capabilities of AI model Midjourney in March 2022 and March 2023. And the



The best drawing tablets in July 2023



How to make and sell an NFT

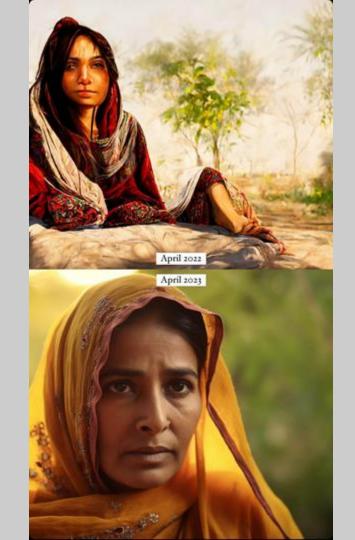
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'GLASSDOOR'

- The new Glassdoor logo has an ingenious design secret
- This viral colour personality test will reveal your true hue
- 3 Early sketches show Tesla's Cybertruck could have looked very different
- △ Now remote 3D artists can

















Remini























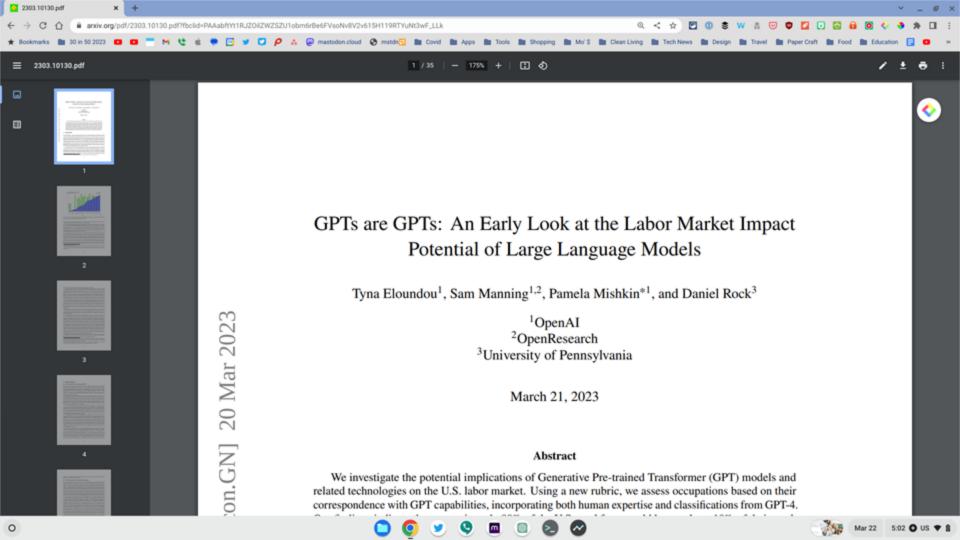


This technology evolving **VERY** quickly.



BUT... DOES THIS IMPACT TEACHING AND LEARNING?

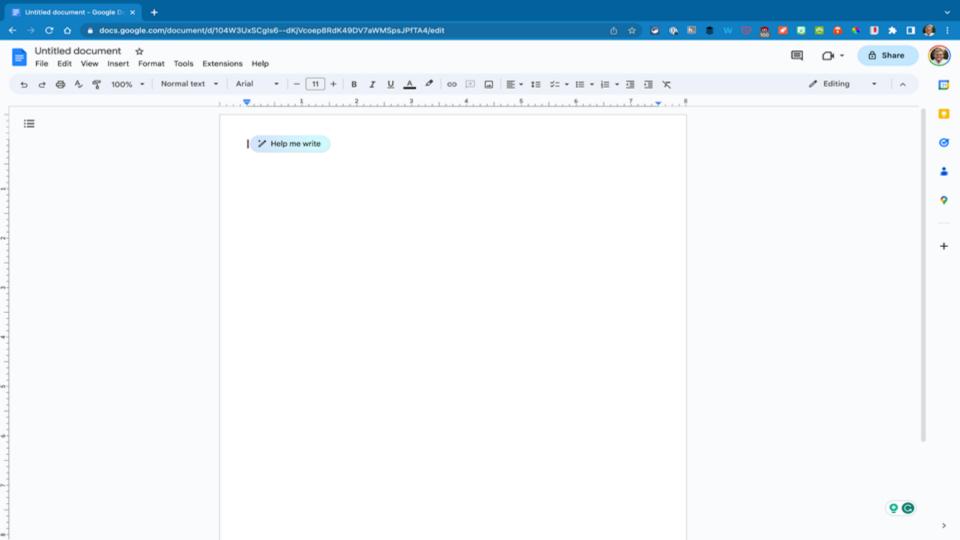


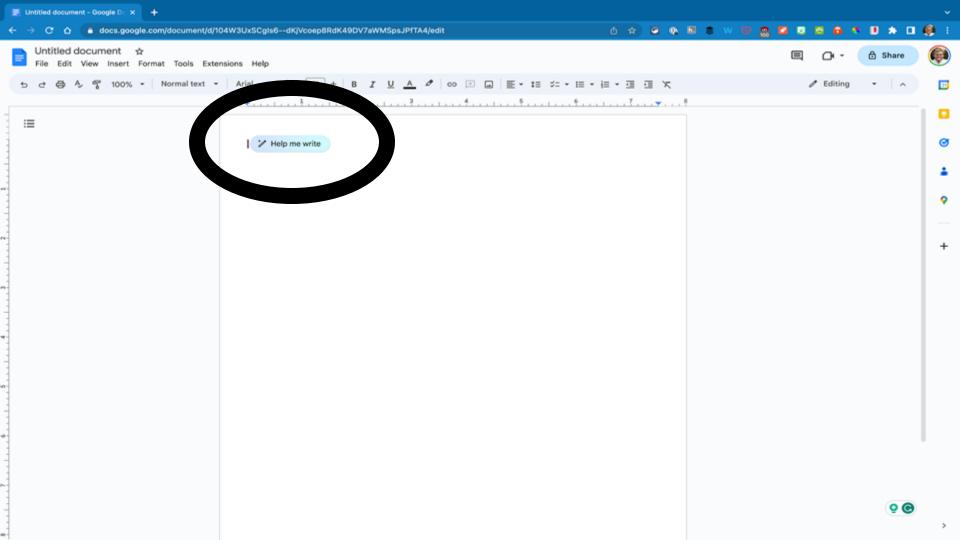


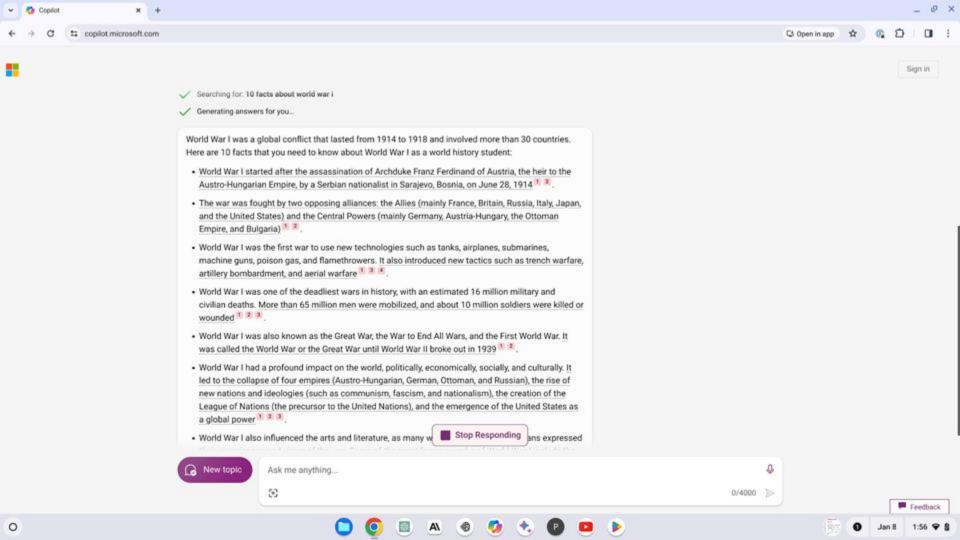
Exam	GPT-4	GPT-4 (no vision)	GPT-3.5
Uniform Bar Exam (MBE+MEE+MPT)	298 / 400 (~90th)	298 / 400 (~90th)	213 / 400 (~10th)
LSAT	163 (~88th)	161 (~83rd)	149 (~40th)
SAT Evidence-Based Reading & Writing	710 / 800 (~93rd)	710 / 800 (~93rd)	670 / 800 (~87th)
SAT Math	700 / 800 (~89th)	690 / 800 (~89th)	590 / 800 (~70th)
Graduate Record Examination (GRE) Quantitative	163 / 170 (~80th)	157 / 170 (~62nd)	147 / 170 (~25th)
Graduate Record Examination (GRE) Verbal	169 / 170 (~99th)	165 / 170 (~96th)	154 / 170 (-63rd)
Graduate Record Examination (GRE) Writing	4 / 6 (~54th)	4 / 6 (~54th)	4 / 6 (~54th)
USABO Semifinal Exam 2020	87 / 150 (99th - 100th)	87 / 150 (99th - 100th)	43 / 150 (31st - 33rd)
USNCO Local Section Exam 2022	36 / 60	38 / 60	24 / 60
Medical Knowledge Self-Assessment Program	75 %	75 %	53 %
Codeforces Rating	392 (below 5th)	392 (below 5th)	260 (below 5th)
AP Art History	5 (86th - 100th)	5 (86th - 100th)	5 (86th - 100th)
AP Biology	5 (85th - 100th)	5 (85th - 100th)	4 (62nd - 85th)
AP Calculus BC	4 (43rd - 59th)	4 (43rd - 59th)	1 (0th - 7th)
AP Chemistry	4 (71st - 88th)	4 (71st - 88th)	2 (22nd - 46th)
AP English Language and Composition	2 (14th - 44th)	2 (14th - 44th)	2 (14th - 44th)
AP English Literature and Composition	2 (8th - 22nd)	2 (8th - 22nd)	2 (8th - 22nd)
AP Environmental Science	5 (91st - 100th)	5 (91st - 100th)	5 (91st - 100th)
AP Macroeconomics	5 (84th - 100th)	5 (84th - 100th)	2 (33rd - 48th)
AP Microeconomics	5 (82nd - 100th)	4 (60th - 82nd)	4 (60th - 82nd)
AP Physics 2	4 (66th - 84th)	4 (66th - 84th)	3 (30th - 66th)
AP Psychology	5 (83rd - 100th)	5 (83rd - 100th)	5 (83rd - 100th)
AP Statistics	5 (85th - 100th)	5 (85th - 100th)	3 (40th - 63rd)
AP US Government	5 (88th - 100th)	5 (88th - 100th)	4 (77th - 88th)
AP US History	5 (89th - 100th)	4 (74th - 89th)	4 (74th - 89th)
AP World History	4 (65th - 87th)	4 (65th - 87th)	4 (65th - 87th)
AMC 10	30 / 150 (6th - 12th)	36 / 150 (10th - 19th)	36 / 150 (10th - 19th)
AMC 12	60 / 150 (45th - 66th)	48 / 150 (19th - 40th)	30 / 150 (4th - 8th)
Introductory Sommelier (theory knowledge)	92 %	92 %	80 %
Certified Sommelier (theory knowledge)	86 %	86 %	58 %
Advanced Sommelier (theory knowledge)	77 %	77 %	46 %
Leetcode (easy)	31/41	31 / 41	12 / 41
Leetcode (medium)	21/80	21 / 80	8 / 80
Leetcode (hard)	3 / 45	3 / 45	0 / 45

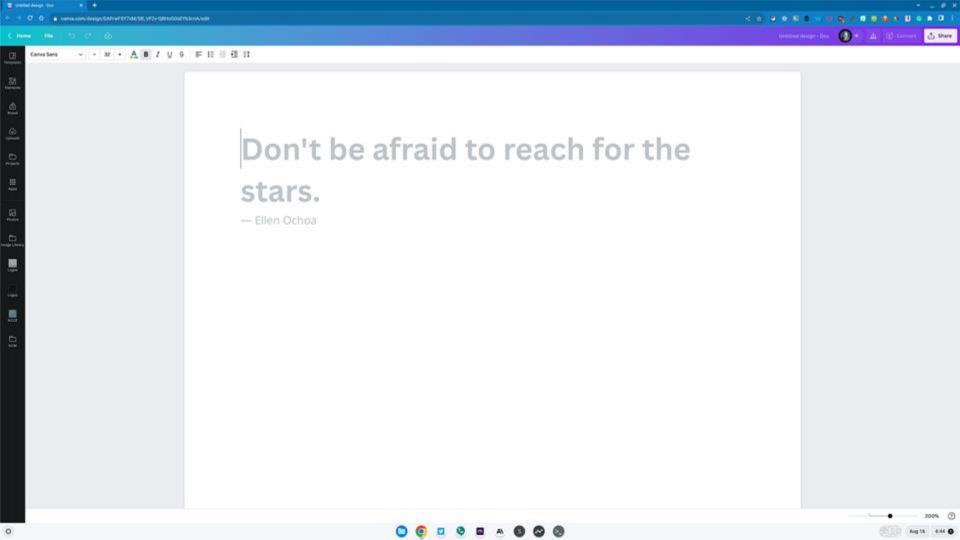
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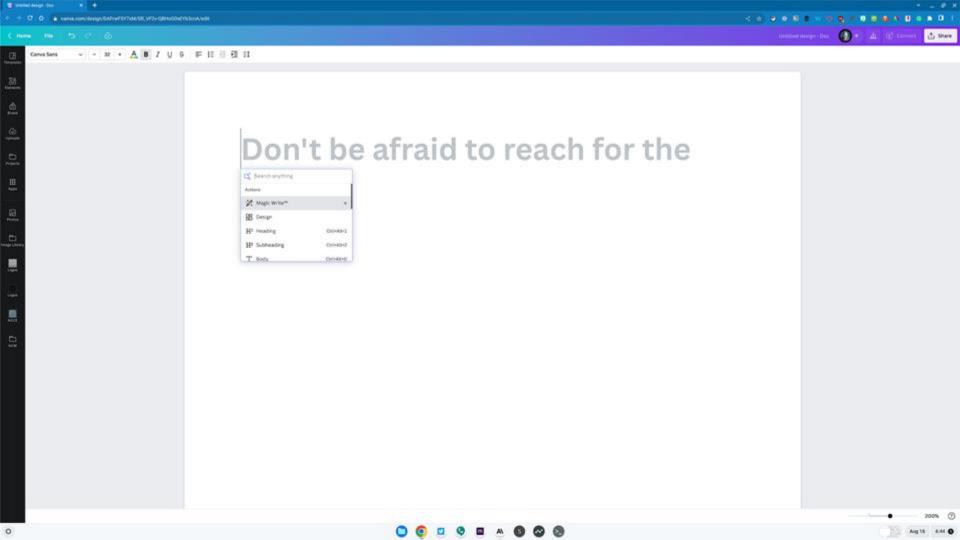
Group	Occupations with highest exposure	Exposure
Human a	Interpreters and Translators	76.5
	Survey Researchers	75.0
	Poets, Lyricists and Creative Writers	68.8
	Animal Scientists	66.7
	Public Relations Specialists	66.7
Human B	Survey Researchers	
	Writers and Authors	82.5
	Interpreters and Translators	82.4
	Public Relations Specialists	80.6
	Animal Scientists	77.8
Human &	Mathematicians	
	Tax Preparers	100.0
	Financial Quantitative Analysts	100.0
	Writers and Authors	100.0
	Web and Digital Interface Designers	100.0
	Humans labeled 15 occupations as "fully exposed.	
Model a	Mathematicians	100.0
	Correspondence Clerks	95.2
	Blockchain Engineers	94.1
	Court Reporters and Simultaneous Captioners	92.9
	Proofreaders and Copy Markers	90.9
Model B	Mathematicians	
	Blockchain Engineers	97.1
	Court Reporters and Simultaneous Captioners	96.4
	Proofreaders and Copy Markers	95.5
	Correspondence Clerks	95.2
Model	Accountants and Auditors	100.0
	News Analysts, Reporters, and Journalists	100.0
	Legal Secretaries and Administrative Assistants	95.5 95.2 100.0 rnalists 100.0
	Clinical Data Managers	
	Climate Change Policy Analysts The model labeled 86 occupations as "fully expose	100.0
Highest variance	Search Marketing Strategists	14.5
	Graphic Designers	13.4
	Investment Fund Managers	13.0
	Financial Managers	13.0
	Insurance Appraisers, Auto Damage	12.6

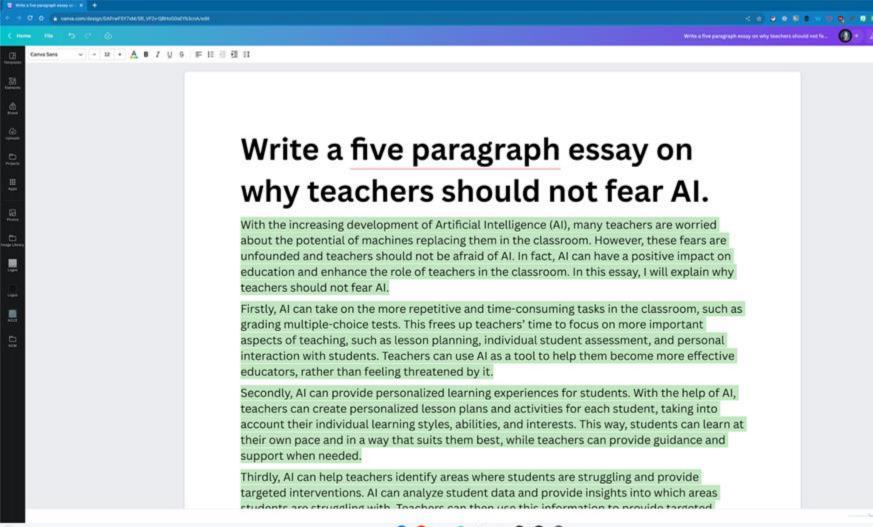






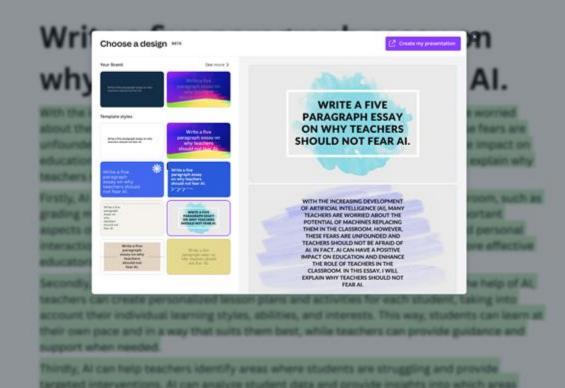












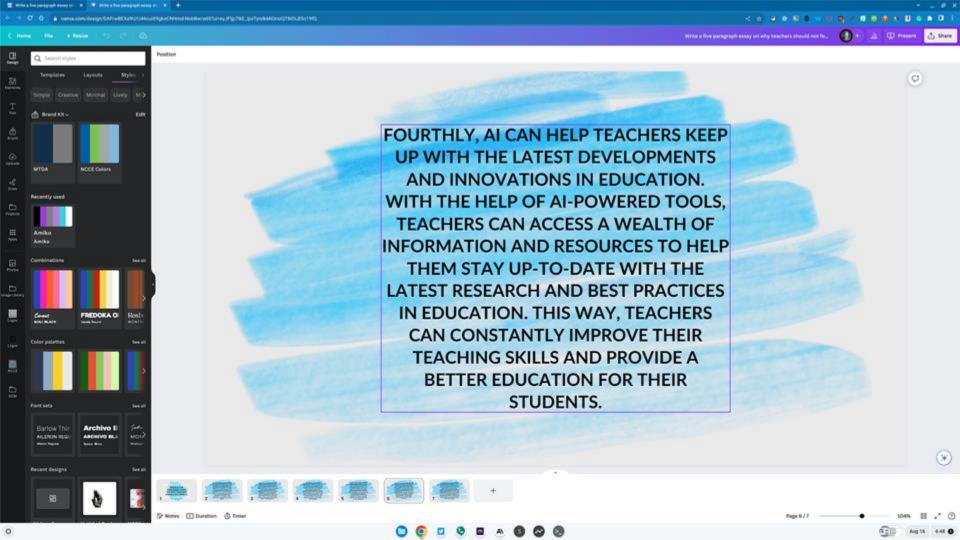


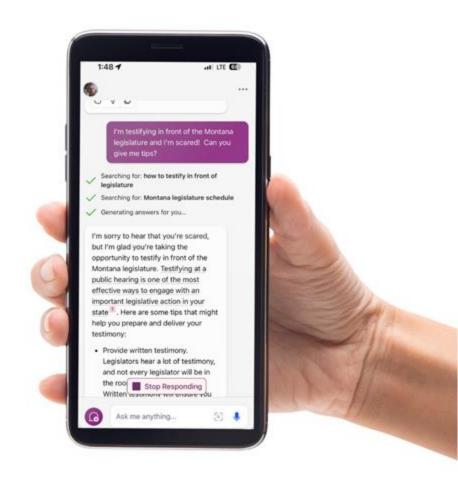




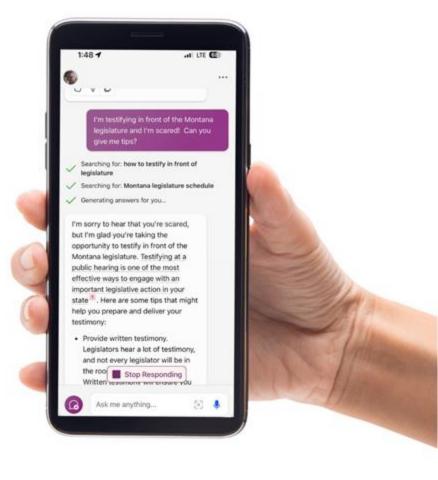


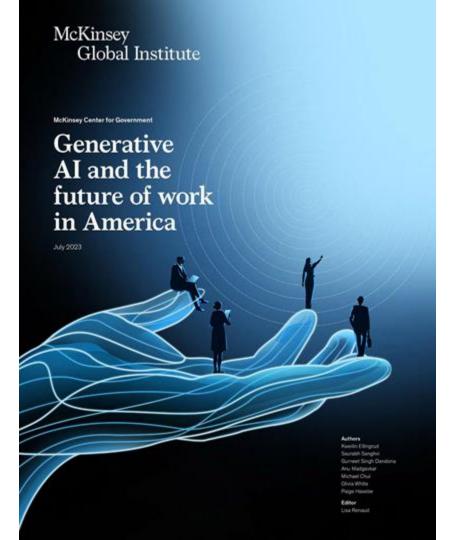










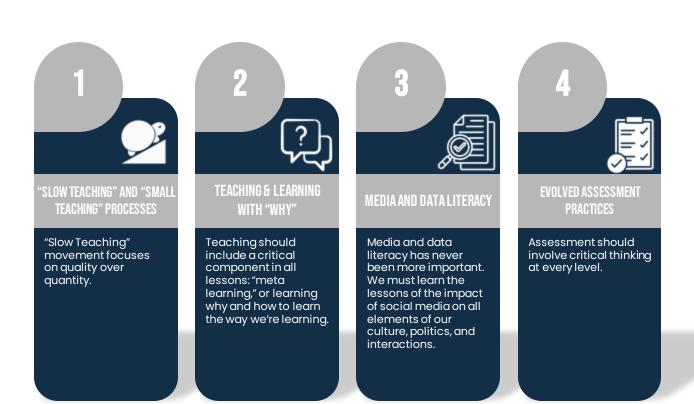


"With generative AI added to the picture, 30 percent of hours worked today could be automated by 2030."

FOUR "BIG NUDGES" IN TEACHING & LEARNING TO RESPOND TO G.A.I.



FOUR BIG "NUDGES" IN TEACHING AND LEARNING



What is Cheating with AI?

Using AI to brainstorm ideas for the paper Using AI for spell check and grammar assistance

Using AI to check for plagiarism Using AI to write an outline for the paper Using AI to provide feedback on how to improve the paper

Using AI to paraphrase portions of your writing

Using AI to summarize content being read for the paper

Using AI to answer questions about the content

Using AI to write a rough draft of the paper Using AI to find informational sources for the paper

Using Al for feedback on style and tone Using AI to properly cite and reference sources

Writing the paper yourself with no help from Al

What are acceptable uses of Al when writing a paper? Having AI write your paper and submitting it as your own work



Acceptable

(With credit to Matt Miller for inspiration)



Not Acceptable

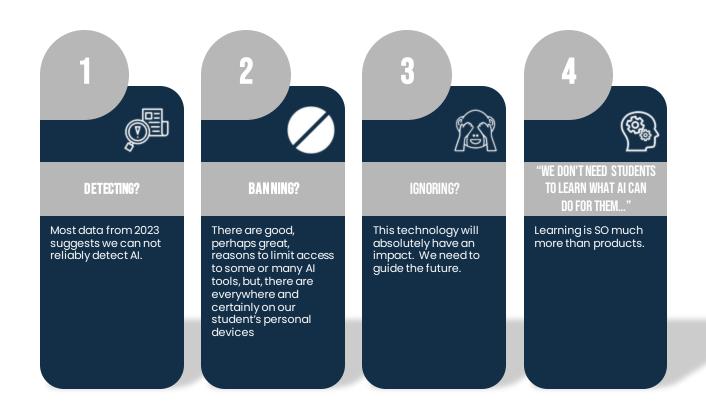
Yes.	Maybe.	No.	
Sure! This is an acceptable use of AI for this assignment, part of the assignment, or learning process.	Eh. Let's talk about this and work together to do this in a way that helps you develop skills.	Sorry, I don't think that works here because X, Y, and Z. Let's do it this way and circle back.	

Green.	Yellow.	Red.	
Sure! This is an acceptable use of AI for this assignment, part of the assignment, or learning process.	Eh. Let's talk about this and work together to do this in a way that helps you develop skills.	Sorry, I don't think that works here because X, Y, and Z. Let's do it this way and circle back.	

Flexible, student-centered learning is more important than ever.



AVOID KNEE-JERK AND "EASY ANSWER" REACTIONS

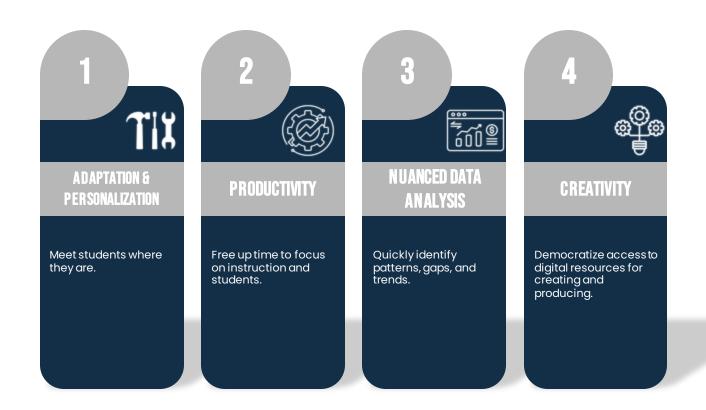


This is a big shift without quick-fix answers.



WHAT CAN AI DO FOR TEACHING?

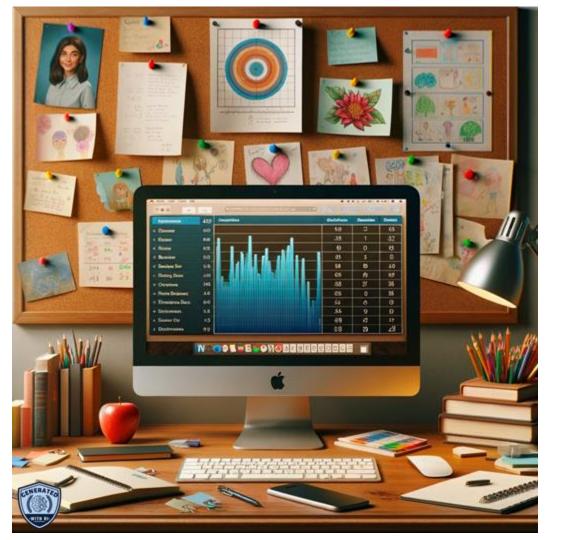
AI EMPOWERS TEACHERS



ADAPTATION AND PERSONALIZATION

- → Remediation and acceleration
- → Individualized learning plans
- → Adaptive tutoring
- → Curated learning resources



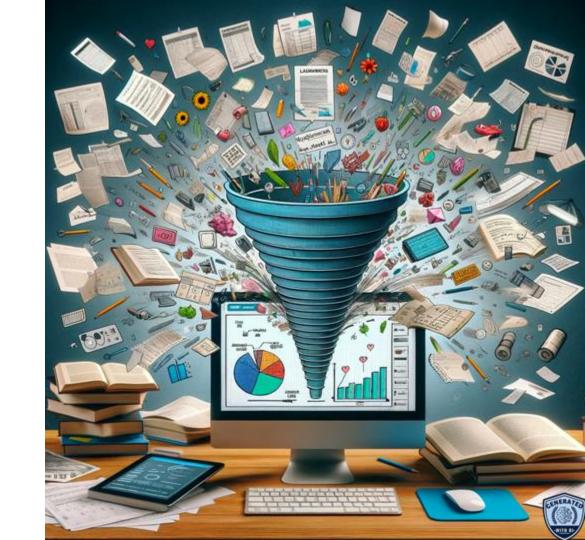


PRODUCTIVITY

- → Parent communications
- → Lesson planning
- → Assessment development
- → Streamline administrative tasks

NUANCED DATA ANALYSIS

- → Insights into student learning patterns
- → Real-time feedback
- → Predictive power
- → Truly actionable data





CREATIVITY

- → Visually rich resources
- → Remove technical expertise as a barrier
- → Dynamic instruction
- → Thought partner

Al tools could help teachers deal with the sometimes overwhelming job in front of them.



BACK HOME IN BIG SKY COUNTRY...



Increased Screen Time Overemphasis On Metrics
Diminished Critical Thinking
Inadequate Problem Solving Skills Impersonal Learning Experiences Decreased Student Motivation
Limited Teacher Autonomy Reduced Physical Activity Technology Access Disparity Limited Social Skills Development
Oversimplification Of Complex Concepts Potential For Misinformation Ineffective For Diverse Learners Dependence On Internet Connectivity

Bias In Algorithms Increased Academic Pressure

Fracerbation Of Digital Divide Decreated Learning Flexibility

Control by Links

The Connectivity

Fracerbation Of Digital Divide Decreated Learning Flexibility

The Control by Links

The Connectivity

The Control by Links

The Contro

POTENTIAL RISKS OF GOING ALL-IN WITH GENERATIVE AI IN EDUCATION

POTENTIAL BENEFITS OF GOING ALL-IN WITH GENERATIVE AI IN EDUCATION

Increased Rath Revolution Enhanced Student Engagement Tostered Student Independence Effective Learning Interventions. Enhanced light Ulteracy Interactive Learning Environments Tailored Educational Content. Culturally Industrial Educations Advanced Research Canabilities Interventions Interactive Learning Environments Tailored Educational Content. Culturally Industrial Educations Advanced Research Canabilities Interventions Interventional Contents Tailored Educational Content Tailored Educational Conte

Advanced Research Capabilities
Automated Administrative Tasks
Data Driven Teaching Strategies

Support For Backer Development Early Identification Of Issues
Enhanced Teacher Productivity Gamifhed Learning Experiences Efficient Curriculum Development

Real Time Performance Feedback
Efficient Resource Allocation facilitated Per Collaboration
Personalized Learning Experiences

Breater Academic Photoscy
Identical English Insulation
Sectional Cognition Insulation
Sectional Control Insulation
Support For Diverse Learners
In Depth Learning Analytics
Support For Special Needs
Improved Learning Analytics
Engowered Creative Thinking
Improved Learning Analytics

Global Learning Opportunities Time Saving For Teachers
Accessible Education For All Consequence of Utiling Lauring Lauring
Scalable Educational Resources
Reduced Educational Inequalities Adaptive Learning Techniques
Control Contro

Customized Learning Paths Reduced Geographical Barriers
Access to Expert Knowledge
Innovative Teaching Methods Continuous Learning Improvement
Advanced Simulation Tools Efficient Grading Systems
Multilingual Education Support

Inequity In Resource Allocation Privacy Concerns
Undermining Teacher Expertise International Privacy Concerns Increased Screen Time Overemphasis On Metrics Diminished Critical Thinking State Protection Solving Skills State For Back Special State Protection State Special Special State Special State Special State Special State Special Special State Special Spe Decreased Student Motivation
Limited Teacher Autonomy Reduced Physical Activity

Lack Of Customized Feedback Reduced Creativity Unreliable Technology Dependence Reduced Parental Involvement that beauty that Dehumanization Of Education Reduced Parental Involvement that beauty that Reduced Human Interaction Technology Access Disparity

Limited Social Skills Development
Oversimplification Of Complex Concepts Potential For Misinformation

One Size Fits All Learning

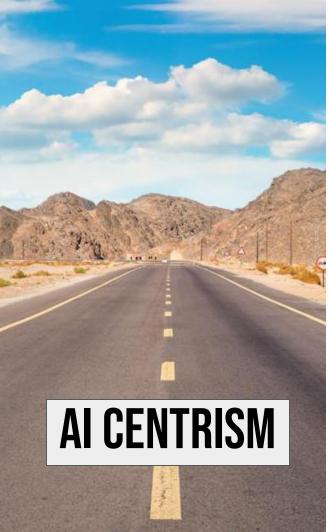
Bias In Algorithms Increased Academic Pressure
Exacerbation of Digital Divide

Dependence On Internet Connectivity

Reduced Hands On Learning

Unintended Ethical Issues Cost Barriers For Schools

Over Reliance On Technology



Containing and Development Enhanced Student Engagement
Fostered Student Independence Effective Learning Interventions Enhanced Biolist Literacy Interactive Learning Environments

Advanced Research Capabilities **Automated Administrative Tasks** Data Driven Teaching Strategies

Immediate Overy Resolution Early Identification Of Issues
Enhanced Techniquest Early Identification Of Issues
Enhanced Techniquest Early Identification Of Issues

Real Time Performance Feedback Efficient Resource Allocation Facilitated Peer Callaboration Peer Call

totar Academic Oblivinery
Enhanced Collaboration Tools
Tools enter Educational Parchillers
Support For Diverse Learners

in Depth Learning Analytics

Support For Special Needs

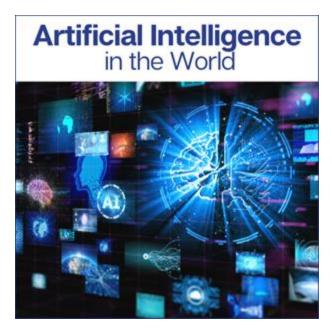
Improved Learning Analytics

Global Learning Opportunities Time Saving for Teachers Accessible Education For All Scalable Educational Resources Learning Techniques

Reduced Educational Inequalities Adaptive Learning Techniques

Customized Learning Paths Reduced Geographical Barriers
Access To Expert Knowledge
Innovative Teaching Methods Continuous Learning Improvement

Advanced Simulation Tools Efficient Grading Systems
Multilingual Education Support



Available Fall 2023



Early Pilot Site Spring 2024



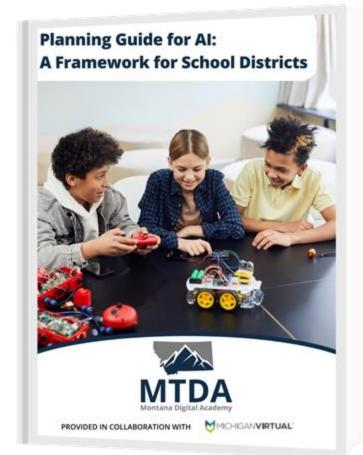


















AI SYMPOSIUM

Al Symposium Registration

Al Symposium Schedule

0

Al Innovation Working Groups

AI INNOVATION SYMPOSIUM

SAVE THE DATE

January 16, 2024

The University of Montana will hold a one-day symposium to explore the challenges and opportunities posed by artificial intelligence. The goal of the symposium is to establish a cohesive, University-wide Al initiative that:

- · Coordinates efforts across departments and disciplines.
- Identifies and implements effective AI solutions to enhance University operations.
- · Adapts the UM curriculum to prepare students for an Al-integrated world.
- . Fosters an environment where AI is a catalyst for innovation in research.

The symposium is open to faculty, staff, and students. Sessions will run from 9 a.m. - 5 p.m.

Al Symposium schedule

Register









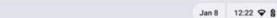














AI EDUCATION LABS







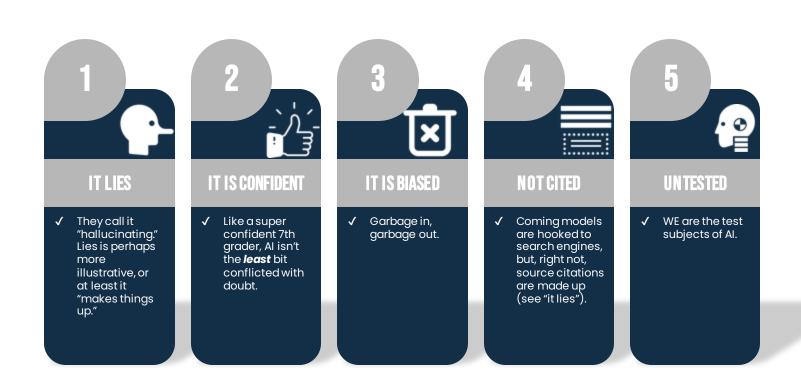
Featuring Al in Education, Proficiency-Based Education, EdReady for Student Transitions, Dual Credit, Online Learning, and Blended Learning



HOMEWORK



FIVE THINGS WE WANT YOU TO KNOW BEFORE YOU PLAY WITH AI



"GENERATIVE" ARTIFICIAL INTELLIGENCE

Implications for Education

JASON NEIFFER, ED.D.

Executive Director

MIKE AGOSTINELLI, ED.S.

Assistant Director/Curriculum Director

CAITLIN BYERS

Student Support/Content Specialist



