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Education in the AI Era: Challenges and Opportunities

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Education in the AI Era: Challenges and Opportunities

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The New York Times

THE SHIFT

The Brilliance and Weirdness of ChatGPT

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

<https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html>

nature

NEWS | 12 January 2023

Abstracts written by ChatGPT fool scientists

Researchers cannot always differentiate between AI-generated and original abstracts.

<https://www.nature.com/articles/d41586-023-00056-7>



Performance of ChatGPT on USMLE: Potential for AI-Assisted Medical Education Using Large Language Models

Tiffany H. Kung, Morgan Cheatham, ChatGPT, Arielle Medenilla, Czarina Sillos, Lorie De Leon, Camille Elepaño, Maria Madriaga, Rimel Aggabao, Giezel Diaz-Candido, James Maningo, Victor Tseng

doi: <https://doi.org/10.1101/2022.12.19.22283643>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.



Abstract

Full Text

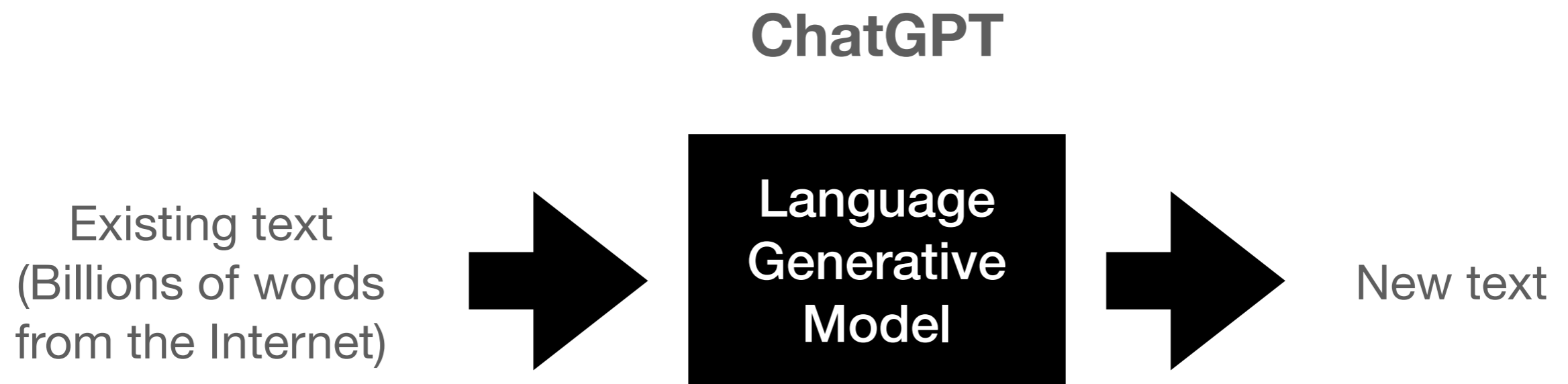
Info/History

Metrics

 Preview PDF

ABSTRACT

We evaluated the performance of a large language model called ChatGPT on the United States Medical Licensing Exam (USMLE), which consists of three exams: Step 1, Step 2CK, and Step 3. ChatGPT performed at or near the passing threshold for all three exams without any specialized training or reinforcement. Additionally, ChatGPT demonstrated a high level of concordance and insight in its explanations. These results suggest that large language models may have the potential to assist with medical education, and potentially, clinical decision-making.



It figures out how to combine words and phrases to make sentences and stories based on prior textual knowledge

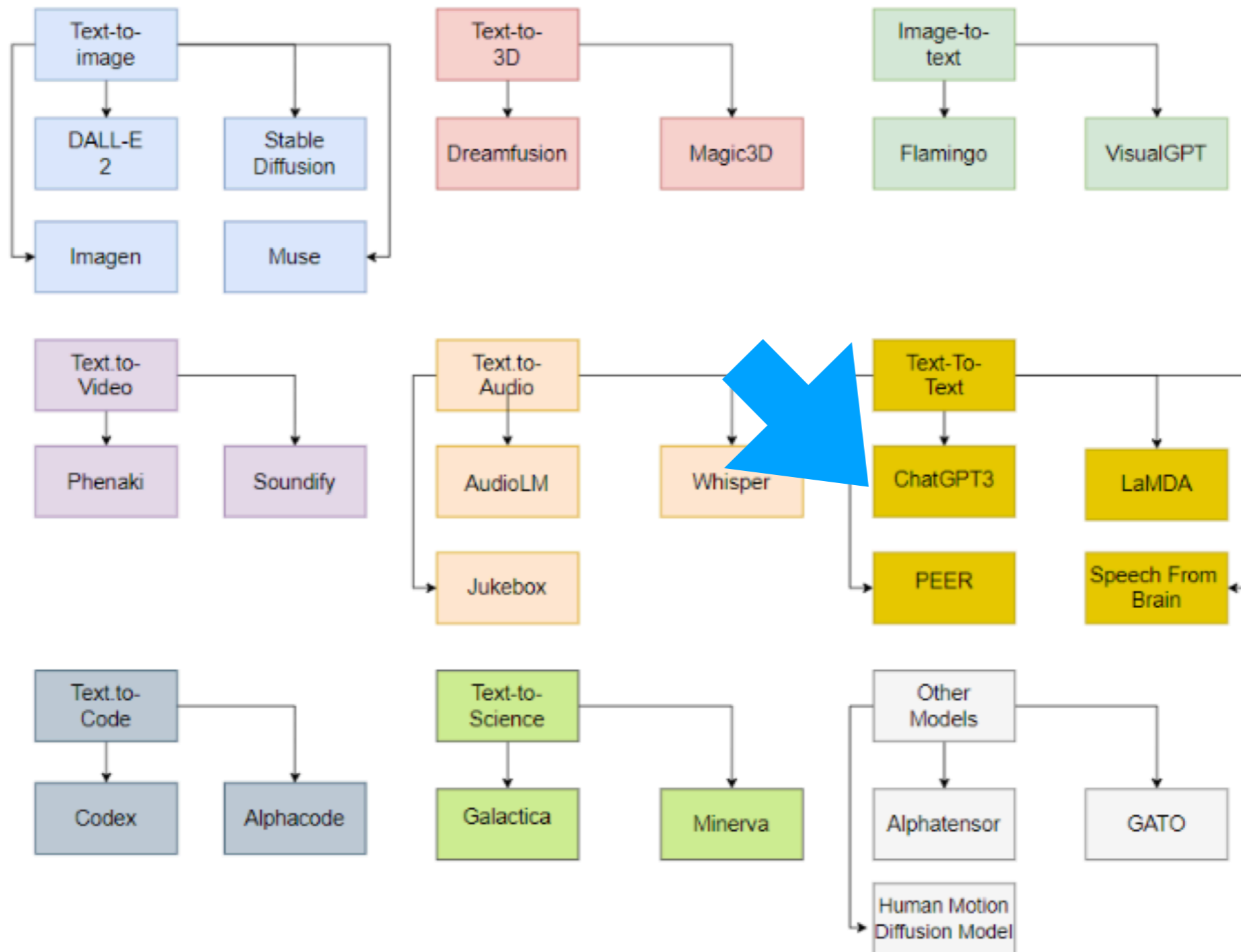


Fig. 1. A taxonomy of the most popular generative AI models that have recently appeared classified according to their input and generated formats.

Gozalo-Brizuela, Roberto and Garrido-Merchan, Eduardo C. (2023). ChatGPT is not all you need. A State of the Art Review of large Generative AI models. arXiv. <https://arxiv.org/abs/2301.04655>

DALL·E: Creating Images from Text

We've trained a neural network called DALL·E that creates images from text captions for a wide range of concepts expressible in natural language.

TEXT PROMPT

an armchair in the shape of an avocado. . . .

AI-GENERATED IMAGES



Edit prompt or view more images ↓

TEXT PROMPT

a store front that has the word 'openai' written on it. . . .

AI-GENERATED IMAGES

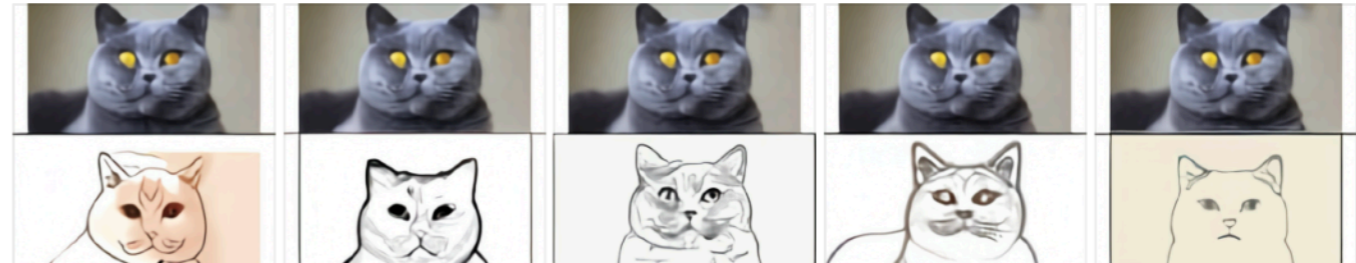


Edit prompt or view more images ↓

TEXT & IMAGE PROMPT

the exact same cat on the top as a sketch on the bottom

AI-GENERATED IMAGES



Edit prompt or view more images ↓

<https://openai.com/blog/dall-e/>

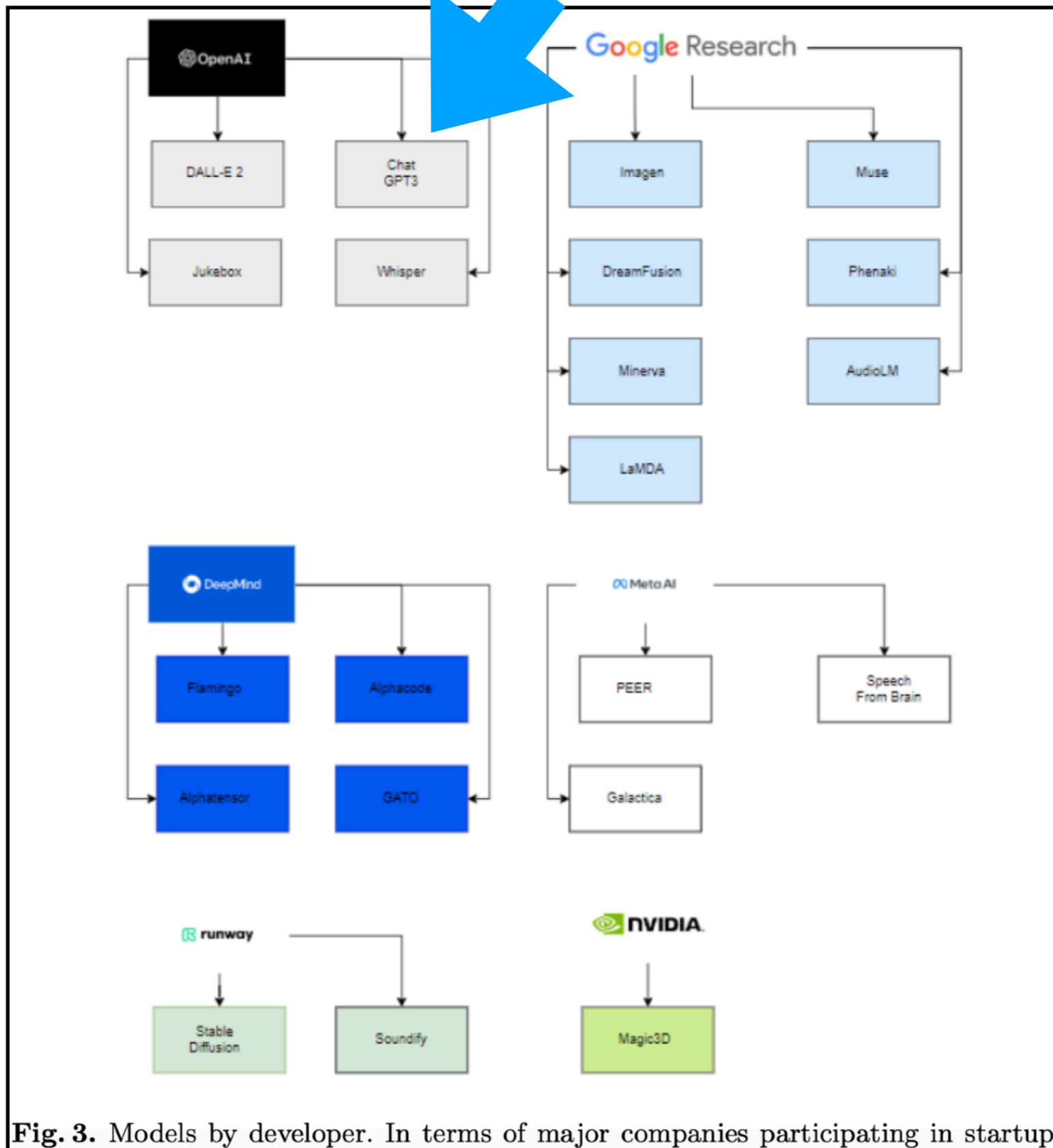


Fig. 3. Models by developer. In terms of major companies participating in startups

Gozalo-Brizuela, Roberto and Garrido-Merchan, Eduardo C. (2023). ChatGPT is not all you need. A State of the Art Review of large Generative AI models. arXiv. <https://arxiv.org/abs/2301.04655>

GeekWire

Seattle Public Schools bans ChatGPT; district 'requires original thought and work from students'



After ChatGPT was released on Nov. 30, Los Angeles Unified District blocked students' access to the technology on networks and devices to "protect academic honesty while a risk/benefit assignment is conducted."

wtopnews

DC region schools ban AI tool ChatGPT



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New York City public schools ban access to AI tool that could help students cheat

By Jennifer Korn and Samantha Kelly, CNN

Updated 9:13 AM EST, Fri January 6, 2023

“Due to concerns about negative impacts on student learning, and concerns regarding the safety and accuracy of content, access to ChatGPT is restricted on New York City Public Schools’ networks and devices,” Jenna Lyle, the deputy press secretary for the New York public schools, said in a statement. ‘While the tool may be able to provide quick and easy answers to questions, it does not build critical-thinking and problem-solving skills, which are essential for academic and lifelong success.’”

<https://www.cnn.com/2023/01/05/tech/chatgpt-nyc-school-ban/index.html>



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**MIT
Technology
Review**

**ChatGPT is going to change education, not
destroy it**

NewScientist

**Should schools ban ChatGPT or
embrace the technology instead?**

School districts and universities are banning the ChatGPT AI that writes in a human-like fashion, but some teachers say a better approach may be to incorporate it into the curriculum



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TIME

IDEAS • TECHNOLOGY

Schools Shouldn't Ban Access to ChatGPT

“Yet attempting to teach ‘critical thinking and problem-solving’ skills – while ignoring the real world in which students will deploy those skills—is a fool’s errand. **These students are growing up in an era when technology increasingly is driving human behavior and decision making. Their generation needs to understand how best to utilize it, what are its perils and shortcomings, how to interrogate it and how to use it in an ethical way.**” ...

What’s more, on a practical basis, a ban simply won’t work. Students will still have access to ChatGPT outside of school.”

<https://time.com/6246574/schools-shouldnt-ban-access-to-chatgpt/>



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The New York Times



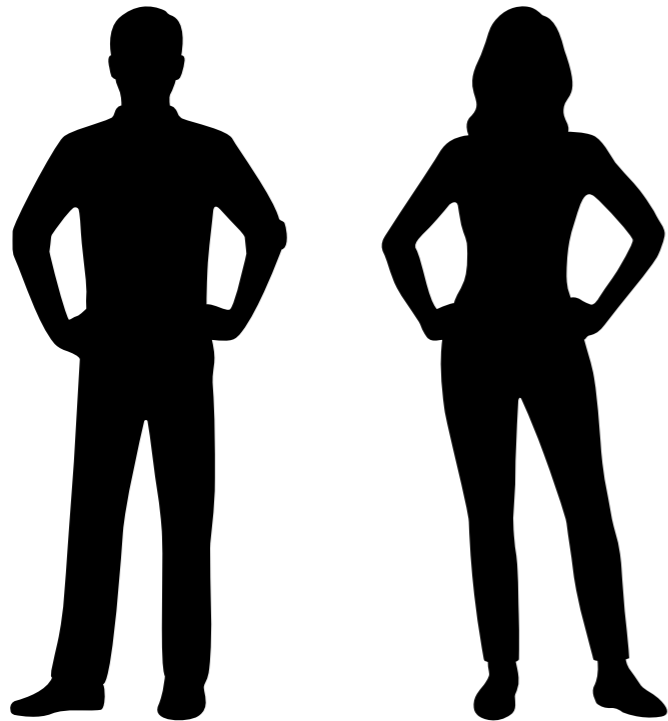
“I believe schools should thoughtfully embrace ChatGPT as a teaching aid — one that could unlock student creativity, offer personalized tutoring, and better prepare students to work alongside A.I. systems as adults...

...schools should treat ChatGPT the way they treat calculators — allowing it for some assignments, but not others, and assuming that unless students are being supervised in person with their devices stashed away, they're probably using one.”

<https://www.nytimes.com/2023/01/12/technology/chatgpt-schools-teachers.html>

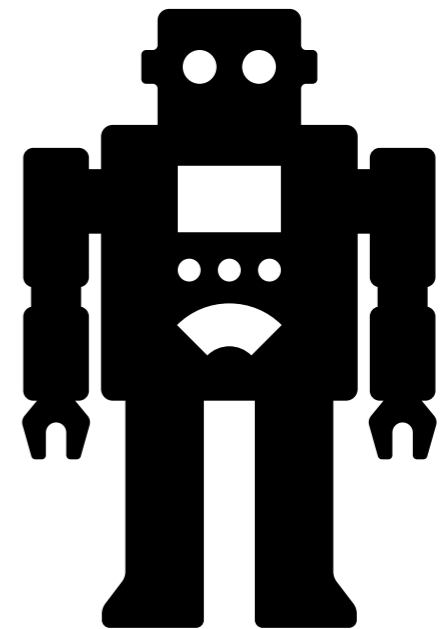
**Don't ban it. Teach how
to use it.**





Professors and students

Collaboration



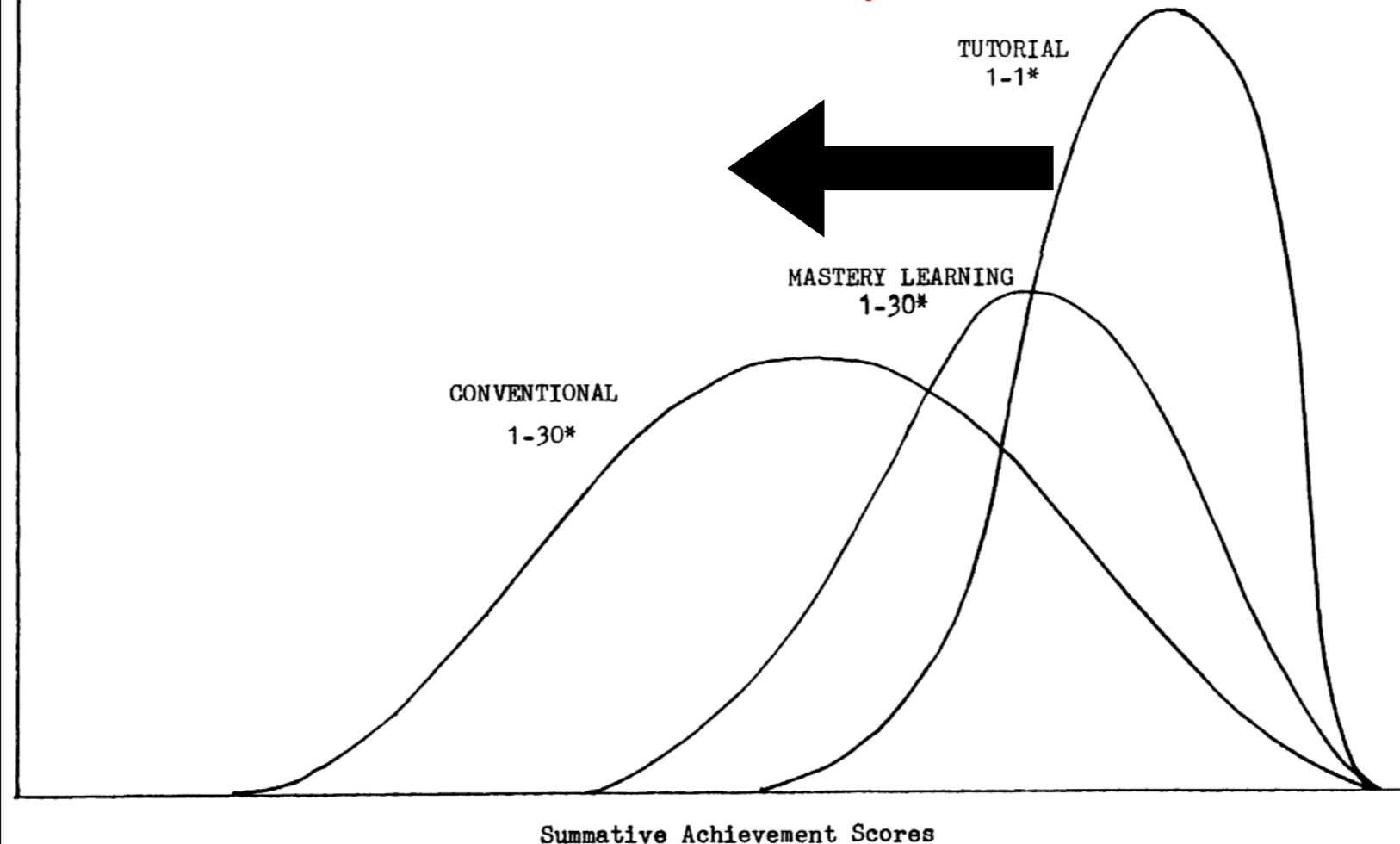
AI
(ChatGPT in particular)

The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring

BENJAMIN S. BLOOM
University of Chicago and Northwestern University

FIGURE 1. Achievement distribution for students under conventional, mastery learning, and tutorial instruction.

About two standard deviations above the average of the control class (the average tutored student was above 98% of the students in the control class!)



*Teacher-student ratio

June/July 1984

Bloom, B. S. (1984). The 2 Sigma Problem: The Search for Methods of Group Instruction as Effective as One-to-One Tutoring. *Educational Researcher*, 13(6), 4–16. <https://doi.org/10.2307/1175554>


Examples

- “Explain the Doppler effect, using language an eighth grader could understand”
- “Convince me that animal testing should be banned” (debate sparring partner).
- Challenge ChatGPT’s reasoning in its answers (teach rhetoric).
- Have a dialogue with ChatGPT to write a computer program (explain particular functions, talk about possible solutions, etc.)



What are we doing at Southern?

Presentations and forums with faculty about the challenges and opportunities of AI in education (mostly focused on ChatGPT)



**PROFESSIONAL DEVELOPMENT
2022-2023**

CENTER FOR TEACHING EXCELLENCE AND BIBLICAL FOUNDATIONS OF FAITH AND LEARNING

LEARNING IN ARTIFICIAL INTELLIGENCE (AI) TIMES **January 25th, 2023
TECH BYTES**


Harvey Alvarez
Technology is essential and useful in all areas of human life today. It has made life easy and comfortable by making communication and transport faster and easier. It has made education accessible to all and has improved all areas of life, including healthcare services. However, with the advance of technology, other areas of life have been compromised, forcing us to rethink how we do things and teach our students in the education field.


Robert Ordonez
Recently, developers created an Artificial Intelligence platform called ChatGPT. ChatGPT is a natural language processing tool driven by AI technology that allows you to have human-like conversations and much more with a chatbot. The language model can answer questions and assist you with tasks such as composing emails, essays, and code, which raises the question of whether you are ready to deal with this in your classrooms.


Gus Martin
Come and learn more about this technology and engage in a group discussion of practical things we can do to deal with this new reality.




**PROFESSIONAL DEVELOPMENT
2022-2023**

CENTER FOR TEACHING EXCELLENCE AND BIBLICAL FOUNDATIONS OF FAITH AND LEARNING

ECLASS AND ARTIFICIAL INTELLIGENCE **February 22nd, 2023
TECHBYTES**


Greg Merchant
Since the transition to eClass 4.0 this past winter break, some things have changed the way they look, where they are, how they work, or simply are no longer available. At the same time, new technologies are now becoming available for our consideration as modern educators. Online Campus invites you to come to learn about what those changes are in eClass and engage in a conversation regarding the impact AI technologies will have in the field of education.


Harvey Alvarez


Robert Ordonez

Encourage AI use among students

- [chatPDF.com](https://chatpdf.com) and chatpdf.ai (conversation with PDFs)
- Consensus (summarizes: what does the research say about...?)
- R Discovery (it gets you the Top 3 papers to read every day without you searching for the day-in day-out)
- SCISPACE (Do hours worth of reading and understanding in minutes. Ask follow-up questions and get instant answers)
- Tutorai.me (creates a tutor for any topic)

Encourage AI use among faculty

- educationcopilot and CourseAI (create unit planners in seconds)
- Conker (generate quizzes about any topic in seconds)



III. AI Policy

I expect you to use AI (ChatGPT and image generation tools, at a minimum), in this class. In fact, some assignments will require it. Learning to use AI is an emerging skill, and I provide tutorials in Canvas about how to use them. I am happy to meet and help with these tools during office hours or after class.

Be aware of the limits of ChatGPT:

- If you provide minimum effort prompts, you will get low quality results. You will need to refine your prompts in order to get good outcomes. This will take work.
- Don't trust anything it says. If it gives you a number or fact, assume it is wrong unless you either know the answer or can check in with another source. You will be responsible for any errors or omissions provided by the tool. It works best for topics you understand.
- AI is a tool, but one that you need to acknowledge using. Please include a paragraph at the end of any assignment that uses AI explaining what you used the AI for and what prompts you used to get the results. Failure to do so is in violation of academic honesty policies.
- Be thoughtful about when this tool is useful. Don't use it if it isn't appropriate for the case or circumstance.



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