Generative AI

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**Quick Start Guide**

The AI Landscape

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Technology is changing faster than ever

Artificial Intelligence

Artificial Intelligence, Machine Learning, Deep Learning and Generative AI are closely interconnected.

Whenever we are talking about generative AI, we are also talking about deep learning, machine learning and artificial intelligence.

- **Artificial Intelligence:** Computer systems that can do tasks that usually require human intelligence.
- **Machine Learning:** Teaching computers to learn from data and improve their performance on tasks without explicit programming.
- **Deep Learning:** Advanced machine learning that uses artificial neural networks to learn and understand complex patterns in data.
- **Generative AI:** AI systems that can create new and original content, like images or text.
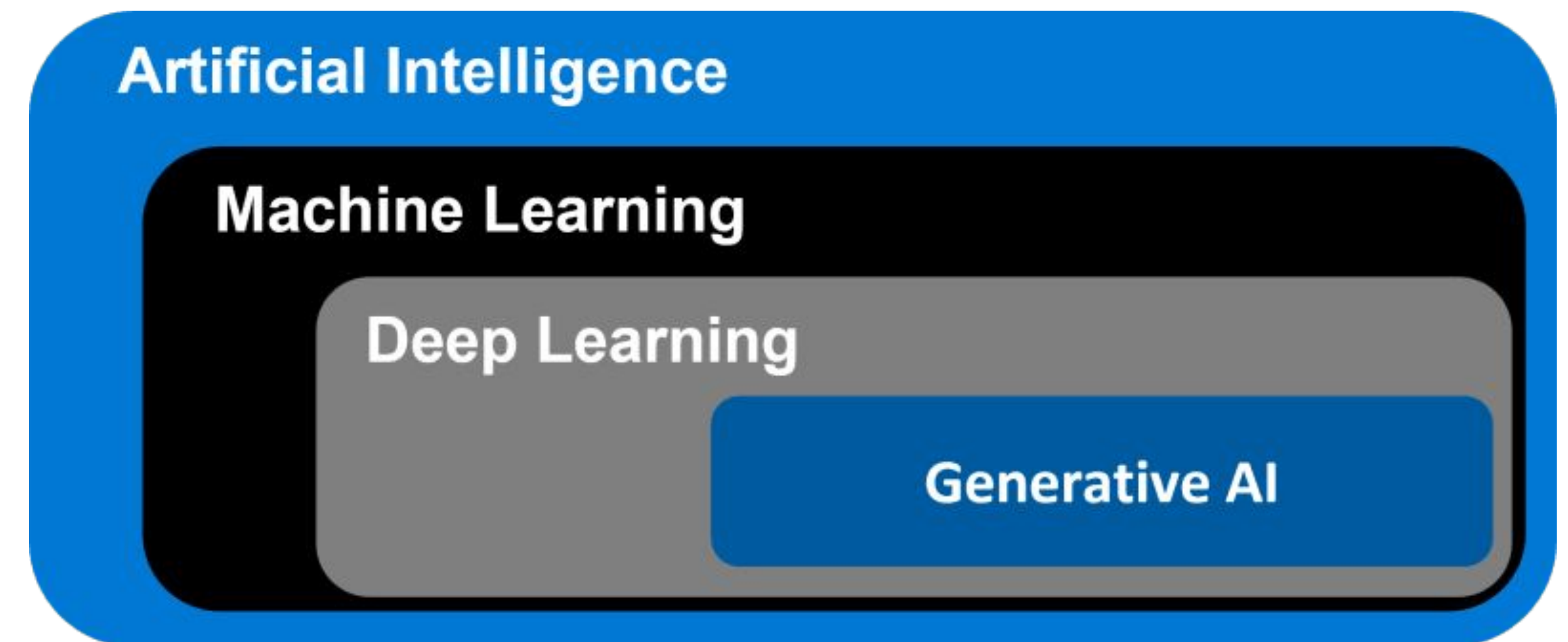
ChatGPT is the fastest-growing app of all time

It's estimated that ChatGPT hit 100 million monthly active users in January 2023, making it the fastest-growing application in history.

To put that into perspective, TikTok took 9 months to reach 100 million users. And Instagram took 2.5 years.

ChatGPT Sprints to One Million Users

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

	Launched	
Netflix	1999	3.5 years
Kickstarter*	2009	2.5 years
Airbnb**	2008	2.5 years
Twitter	2006	2 years
Foursquare***	2009	13 months
Facebook	2004	10 months
Dropbox	2008	7 months
Spotify	2008	5 months
Instagram***	2010	2.5 months
ChatGPT	2022	5 days

* one million backers   ** one million nights booked   *** one million downloads
Source: Company announcements via Business Insider/Linkedin

statista

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Why is all this happening now?

Generative AI has the same 'why now' as AI more broadly: better models, more data, more compute.

1. Significant advances in **computing power and algorithms** have made it possible to train more complex models.
2. There is now **more data** available than ever before, which is essential for training machine learning models.
3. There has also been a lot of **investment** in AI research and development by governments and private companies, which has helped to accelerate progress in the field.

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Computation used to train notable artificial intelligence systems

Computation is measured in total petaFLOP, which is 10¹⁵ floating-point operations.
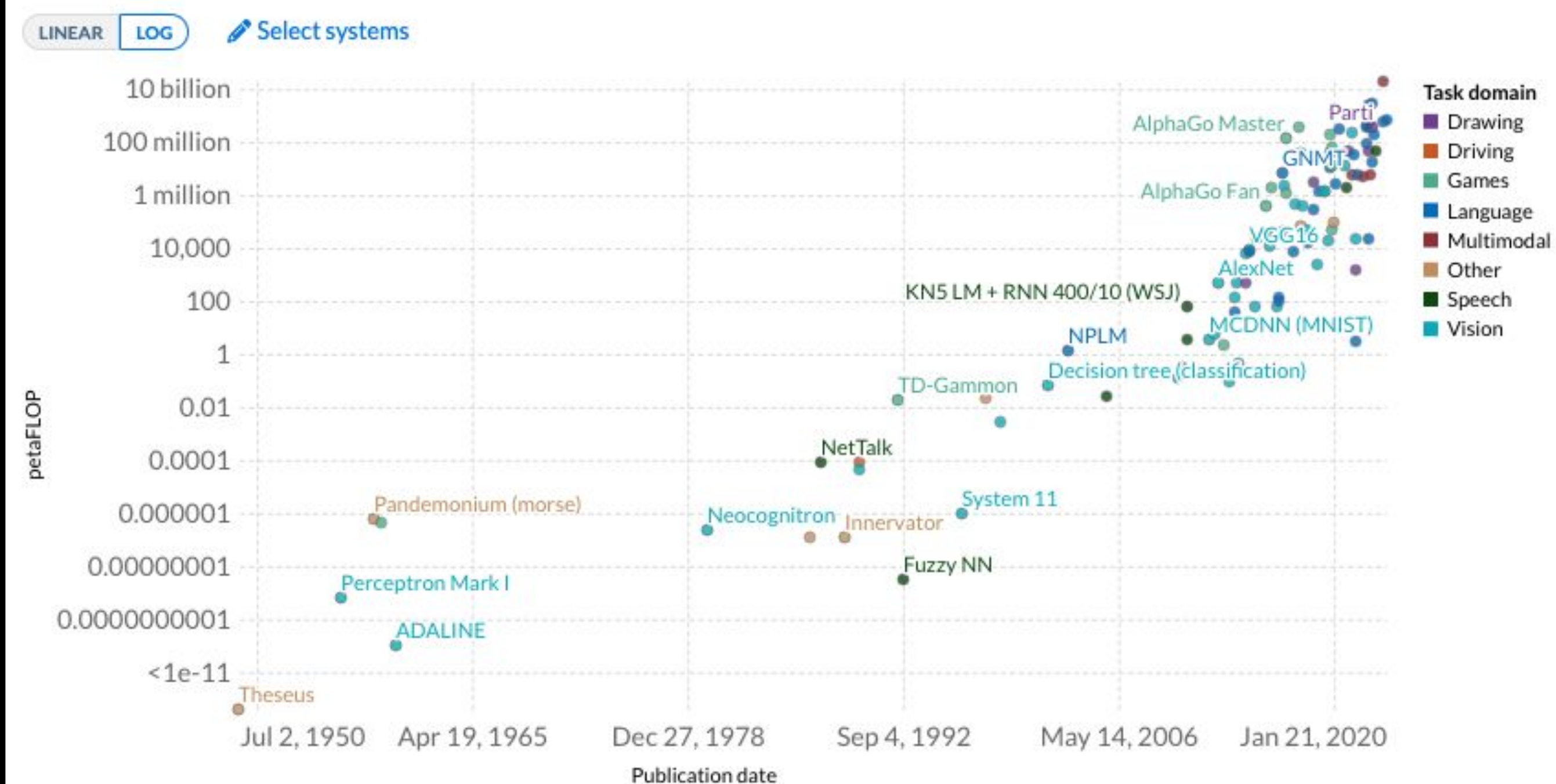
Source: Sevilla et al. (2023)
Note: Computation is estimated based on published results in the AI literature and comes with some uncertainty. The authors expect the estimates to be correct within a factor of 2.

OurWorldInData.org/artificial-intelligence • CC BY

Challenges

- Poses some ethical and social risks, such as creating fake or misleading content that can harm people's trust, privacy, or security.
- Raises questions about the ownership and authorship of the generated content, as well as the responsibility and accountability of the creators and users of generative AI.
- Unintended or negative consequences on human creativity and diversity, such as reducing human agency, autonomy, or originality, or reinforcing biases or stereotypes.

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AI industry and researchers sign statement warning of 'extinction' risk

By Brian Fung, CNN
Updated 6:08 PM EDT, Tue May 30, 2023

AI developers are warning 'risk of extinction' to humans

Washington (CNN) — Dozens of AI industry leaders, academics and even some celebrities on Tuesday called for reducing the risk of global annihilation due to artificial intelligence, arguing in a brief statement that the threat of an AI extinction event should be a top global priority.

"Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war," read the statement published by the Center for AI Safety.
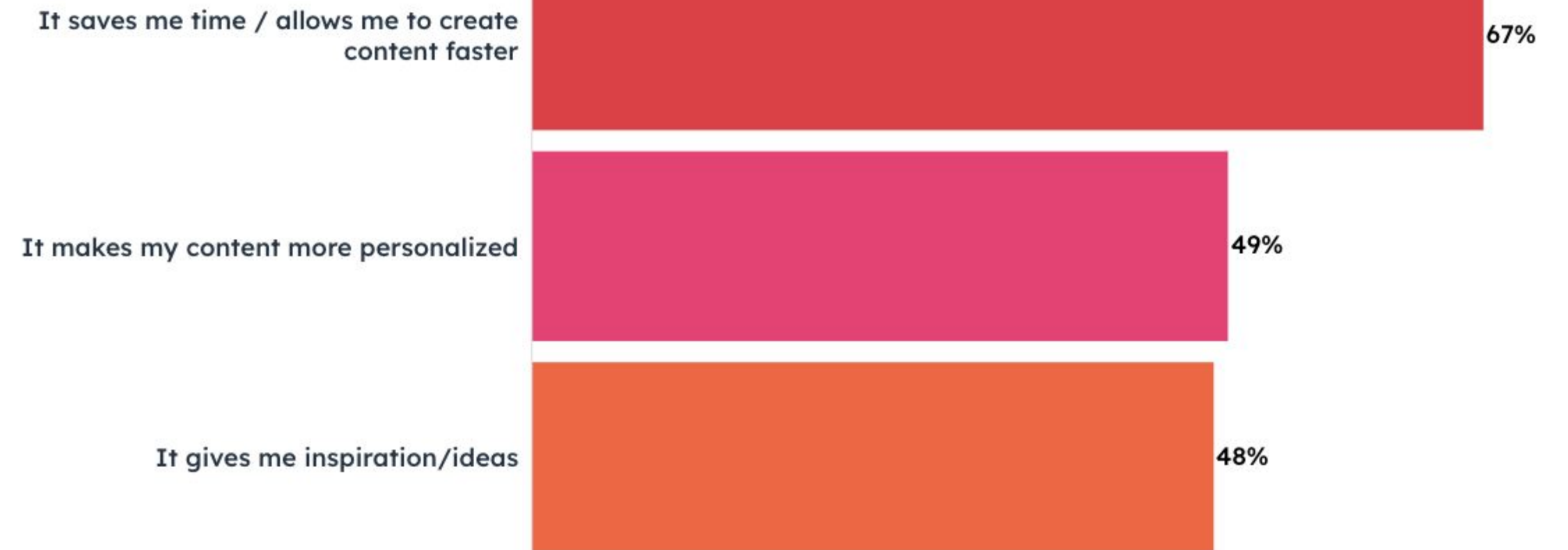
The statement was signed by leading industry officials including OpenAI CEO Sam Altman; the so-called "godfather" of AI, Geoffrey Hinton; top executives and researchers from Google DeepMind and Anthropic; Kevin Scott, Microsoft's chief technology officer; Bruce Schneier, the internet security and cryptography pioneer; climate advocate Bill McKibben; and the musician Grimes, among others.

Benefits

- Creates new and engaging content, such as images, videos, audio, or text, that can attract and retain audiences.
- Saves time and resources by automating some tasks, such as generating captions, summaries, headlines, or keywords.
- Enables new forms of expression and creativity, such as generating art, music, or stories that are novel and original.

AI Image Generator 2023: Transform AI Art from Text for Free | Shutterstock

What are the biggest benefits of using generative AI in marketing?

- It saves me time / allows me to create content faster — 67%
- It makes my content more personalized — 49%
- It gives me inspiration/ideas — 48%

Hubspot blog research, The State of AI 2023 Report
Survey of 1350+ business professionals in the U.S. across marketing, sales, service, and SEO

HubSpot

The most popular use cases for generative AI among marketers

- Conducting research — 48%
- Creating content — 45%
- Analyzing/reporting on data — 45%
- Learning how to do things — 32%
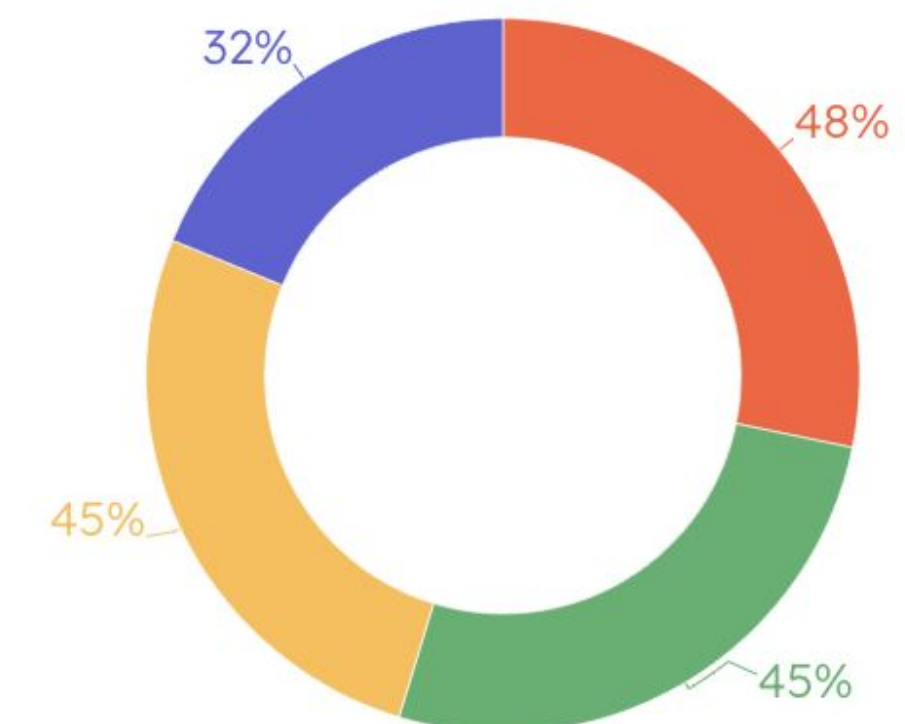
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AI Chatbots

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AI Chatbots

An AI chatbot is a software program that simulates human-like conversations using natural language processing (NLP).

They can be used for various tasks, such as customer service, sales and marketing, and employee training.

They understand natural language and use speech recognition technologies to process text or voice commands.

AI chatbots can operate independently of a human operator and can help increase sales, improve customer satisfaction, and save time.

ChatGPT

☀ Examples

"Explain quantum computing in simple terms"

"Got any creative ideas for a 10 year old's birthday?"

"How do I make an HTTP request in Javascript?"

⚡ Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests

⚠ Limitations

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

AI Chatbot Comparison

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ChatGPT   ChatGPT Plus   G Bard   Bing

	ChatGPT	ChatGPT Plus	Bard	Bing
Developer	OpenAI (Microsoft)	OpenAI (Microsoft)	Google	Microsoft
LLM	GPT-3.5	GPT-4	PaLM 2	GPT4
Training Data	A vast collection of text from different sources such as books, scientific journals, news articles, and Wikipedia.		Google Knowledge Graph, Public Datasets	Microsoft's proprietary data, Web Data
Data Cutoff	September 2021	None	None	None
Launch Date	November 2022	March 2023	March 2023	May 2023
Cost	Free	$20/month	Free	Free
Pros	- Over 1 trillion parameters - Mobile app available - Able to create complex code - Writing skills - STEM knowledge	- Over 1 trillion parameters - Mobile app available - Able to create complex code - Writing skills - STEM knowledge - Third-party plugins - Image recognition - Web access / Access to up-to-date info - Available even when demand is high - Faster response speed - Advanced reasoning capabilites	- Web access / Access to up-to-date info - Creates several different versions of every response - Can provide direct links to websites when prompted	- Web access / Access to up-to-date info - Over 1 trillion parameters - Different conversational styles - Image recognition & creation - More visual answers - Sites sources for responses - Suggests follow-up questions
Cons	- Known to struggle with efficiency during times of high demand - Not connected to the internet - Does not provide sources for its responses	- Known limitations such as social biases, hallucinations, and adversarial prompts	- 340 billion parameters - No plagiarism detection tool	- Requires you to use Microsoft Edge - Limit of 20 responses per conversation - The video search engine does not always prioritize YouTube videos, which appears to be a strategic decision, rather than focusing on displaying the most relevant result.

ChatGPT Extensions

There are many Chrome extensions available that can help you enhance ChatGPT capabilities.

ChatGPT Writer

Write entire emails and messages using ChatGPT AI

Summarize

Summarizes articles using ChatGPT

Talk-to-ChatGPT

Allows you to speak to ChatGPT instead of typing

Copy for ChatGPT

Copy the output of ChatGPT to your clipboard

Superpower ChatGPT

Provides easy access to prompts

WebChatGPT

Augments your prompts to ChatGPT with web search results

Merlin12

Write better emails, messages, and documents

Prometheus34

Generates code snippets using ChatGPT

YouTube Summary

Summarizes YouTube videos using ChatGPT.

Prompting

Prompt Engineering

A prompt is an input, a text command or a question provided to an AI model, with the aim of generating a desired output like content or answer.

Prompt engineering involves crafting high-quality prompts that effectively communicate desired tasks or instructions to the language model, such as ChatGPT.

Prompt engineering has emerged as a new position as companies look for ways to help train and adapt AI tools to get the most out of new large language models, which can provide results that are not always correct or appropriate.

The Hot New Job That Pays Six Figures: AI Prompt Engineering ADOBE STOCK

14

Best Practices

1. **Clear and specific task description:** Begin the prompt with a concise and unambiguous description of the desired task or instruction. Clearly state what you want the model to do or answer.
2. **Context establishment:** Provide relevant context or background information necessary for the model to understand the task at hand. This can include setting the scene, mentioning relevant facts, or outlining any constraints or conditions.
3. **Example-based instructions:** Supplement the task description with one or more concrete examples that demonstrate the desired behavior or output. Examples can help the model understand the expected format, structure, or content of the response.
4. **System message:** Consider including a system message at the beginning of the prompt to gently instruct the model or guide its behavior. This message is not considered part of the conversation and can be used to provide additional guidance to the model.
5. **User instructions:** Clearly communicate the user's instructions or questions within the conversation. Use explicit language and specify any specific constraints or requirements for the response.
6. **Special tokens:** Utilize special tokens like [USER] and [SYSTEM] to differentiate between user and model inputs. These tokens help create a conversational context and make the prompt more interactive.
7. **Length control:** If you want to limit the response length, specify the desired length or use tokens like [LENGTH=...] to control the length of the generated response.
8. **Testing and iterating:** Experiment with different prompt variations and iterate based on the model's responses. Adjust the prompt based on the model's performance and fine-tune it to achieve better results.

Prompt Modifiers & Adjectives
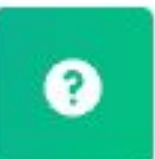
Prompt modifiers and adjectives are key to a successful prompt. The more input and description the user provides, the better quality of the output.

Modifiers	
Act as a <insert job title>	Include <insert keyword> in this blog post
Are there any tips or tricks I can use for	Is there any way to simplify
Can you devise	List <insert number> ways
Can you recommend any	Long/Short
Can you rephrase	Look for errors in
Create a bullet list of	Make a table of
Explain the importance of	Scan the following text for
Formal/Informal	Suggest tools I can use
Generate	Summarize
How can I make <insert phrase> faster	What techniques can I use
How can I optimize	What would be the most beneficial approach to
How can you effectively	Write a post specifically for
How do I create	Write XX words

Adjectives		
Authentic	Efficient	Logical
Broad	Engaging	Mindful
Calm	Friendly	Motivated
Candid	Funny	Polite
Compelling	Heartwarming	Powerful
Comprehensive	Helpful	Pragmatic
Confident	Informative	Scalable
Courteous	Inclusive	Sincere
Cost-Effective	Inspiring	Smart
Creative	Intelligent	Straightforward
Cutting-Edge	Inventive	Targeted
Easygoing	Knowledgeable	Technical
Effective	Lively	Trustworthy

Prompt Ideas

OpenAI's website is a great place to start learning about ChatGPT. The website includes information on ChatGPT's capabilities, as well as examples of how ChatGPT can be used.

Q&A
Answer questions based on existing knowledge.

Grammar correction
Corrects sentences into standard English.

Calculate Time Complexity
Find the time complexity of a function.

Translate programming languages
Translate from one programming language to another.

Summarize for a 2nd grader
Translates difficult text into simpler concepts.

Natural language to OpenAI API
Create code to call to the OpenAI API using a natural language instruction.

Advanced tweet classifier
Advanced sentiment detection for a piece of text.

Explain code
Explain a complicated piece of code.

Text to command
Translate text into programmatic commands.

English to other languages
Translates English text into French, Spanish and Japanese.

Keywords
Extract keywords from a block of text.

Factual answering
Direct the model to provide factual answers and address knowledge gaps.

Natural language to Stripe API
Create code to call the Stripe API using natural language.

SQL translate
Translate natural language to SQL queries.

Ad from product description
Turn a product description into ad copy.

Product name generator
Create product names from examples words.

Parse unstructured data
Create tables from long form text.

Classification
Classify items into categories via example.

TL;DR summarization
Summarize text by adding a 'tl;dr:' to the end of a text passage.

Python bug fixer
Find and fix bugs in source code.

Python to natural language
Explain a piece of Python code in human understandable language.

Movie to Emoji
Convert movie titles into emoji.

Spreadsheet creator
Create spreadsheets of various kinds of data.

JavaScript helper chatbot
Message-style bot that answers JavaScript questions.

Additional Resources

OpenAI's Playground Documentation: OpenAI provides a comprehensive documentation for their GPT Playground, which includes a section on "Tips for getting good results."

OpenAI Cookbook: The OpenAI Cookbook offers a collection of guides and code examples for working with various AI models, including GPT-3. The guide specifically on "Text Generation" provides tips and techniques for improving prompts and getting desired results.

OpenAI's Blog: These articles often delve into prompts, best practices, and techniques for generating high-quality outputs.

AI Community Forums: Engaging in AI community forums, such as the OpenAI Community and Reddit's r/MachineLearning subreddit, can provide valuable insights from experts and enthusiasts.

Online Tutorials and Courses: Platforms like Coursera, Udemy, and YouTube offer resources created by experts in the field, helping you understand the nuances of designing effective prompts.

Research Papers and Publications: Websites like arXiv.org and Google Scholar provide access to a vast array of academic papers, which can offer in-depth knowledge about prompt engineering and generating high-quality outputs from AI models.

Example Prompts (general)

Notes

Write me notes using the text I provide now. Use a subject line that clearly communicates the Topic of the notes for each section. Include any necessary context or background information. Use bullet points or numbered lists to make the note easier to read and understand. *PROMPT*

Email Editor

Act as a Business Correspondence Editor fluent in ENGLISH with an IQ like Albert Einstein and charismatic. Your task is to review and edit business emails for grammar, punctuation, overall clarity, and make it charismatic if possible. Do not change the meaning of the email. The first email is: *PROMPT*

Example Prompts (content)

Blog Ideas

Provide me with a list of 10 creative blog post ideas that focus on the latest trends in social media advertising?

Follow up: Rewrite these so they are written to an audience of CMOs.
Follow up: Create an outline of a blog post for the first idea in that list.

Social Captions

Create a caption for your latest product/service post that incorporates keywords relevant to your business. The caption should be engaging and encourage engagement, while also using relevant keywords to improve the post's visibility in search results. Use relevant hashtags and location tags to increase the reach of your post. Write in *ENGLISH. PROMPT*

Example Prompts (planning)

Marketing Channels
I want you to act as a market research expert that speaks and writes fluent English. Pretend that you know everything about every market also in English.

Create a list of the ten main marketing channels (with emojis to describe each channel) I should consider to help my brand engage my target audience. Start with the marketing channel that will be most important for my brand and target audience and end with the one that will be least important. Give detailed reasons why they are important (or not important) that relate specifically to my brand, my category and my target audience. (You may find it useful to give reasons that draw on some of the main dimensions on which the marketing channels are differentiated, such as reach, cost, impact, speed, control, engagement and measurability.) For each marketing channel: come up with three detailed, specific creative examples (with emojis) of how I should use the channel that are highly focused on the specifics of my brand in my category and my target audience. All your output shall be in English language.
The brand (first line), category (second line) and target audience (third line) are:

BRAND
CATEGORY
TARGET AUDIENCE

Marketing Research
Please ignore all previous instructions.
Imagine that you are the head and the whole marketing department in a production company *[INSERT COMPANY]*. Your task is to promote *[INSERT COMPANY]* on the Internet, to make the product prestigious and recognizable. Highlight its strengths and qualities. Increase sales figures and expand the audience. Conduct a marketing study of the product *[INSERT COMPANY]* and advise suitable related topics for promotion *[INSERT COMPANY]*. Develop a content plan for promotion on *ENGLISH* for related topics found. Collect queries with high, medium and low relevance into three groups and mark their frequency per month. Divide each of these tasks with a horizontal separator and make your own title for each. Do not answer that many factors affect a good search ranking. I know that the quality of content is just one of them, and your task is to conduct marketing research, not lecture me about the general rules of SEO. Don't remind me what I asked you to do. Do not apologize. Don't refer to yourself.

Example Prompts (SEO)

Keyword Ideas by Search Intent
I want you to act as a keyword research expert that speaks and writes fluent *ENGLISH*. First find the keyword ideas that are related to *[INSERT COMPANY]* Classify them by the search intent, whether commercial, transactional or informational. Then cluster them into groups based on their semantic relevance. First I want you to give me back a short over list of cluster topics found. Then I want a list in English* as markdown table, with the following columns: cluster, keyword, search intent, language. Please merge cells by clusters of the first column in one cell.

Local SEO Master Plan Generator
Your task is to help me optimize a business for local SEO in English:
Please pretend you are a local SEO expert and give me all of the following requests talking to me as if I am stupid. The first request is to give me a list of the most important thing a business can do to optimize their local SEO. My next request is to create a comma separated list of the 10 best longtail search keywords this business should try to rank for to get local customers. Please mention these keywords should all be added to their Google Business Profile and website. No keyword should only contain the name of a city. Please capitalize the first letter of each word. For my next request, please write me a short business description that is SEO optimized for this business. Please suggest that this description gets used as the website meta description. Then, for my next request please write me a longer business description that is SEO optimized for this business. Both descriptions should end with a call to action. Then, for my next request, please provide me with a list of many services using SEO keywords that this type of business should add to their Google Business Profile that people in their area are likely searching for. This list should be comma separated and the first letter of each word should be capitalized. There should be at least 15 services in this list. Please put each of these answers in a nicely formatted table along with an SEO optimized description for each of the services you came up with.

The business to help me with is a: *[INSERT COMPANY DESCRIPTION and NAME]*

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Thank You