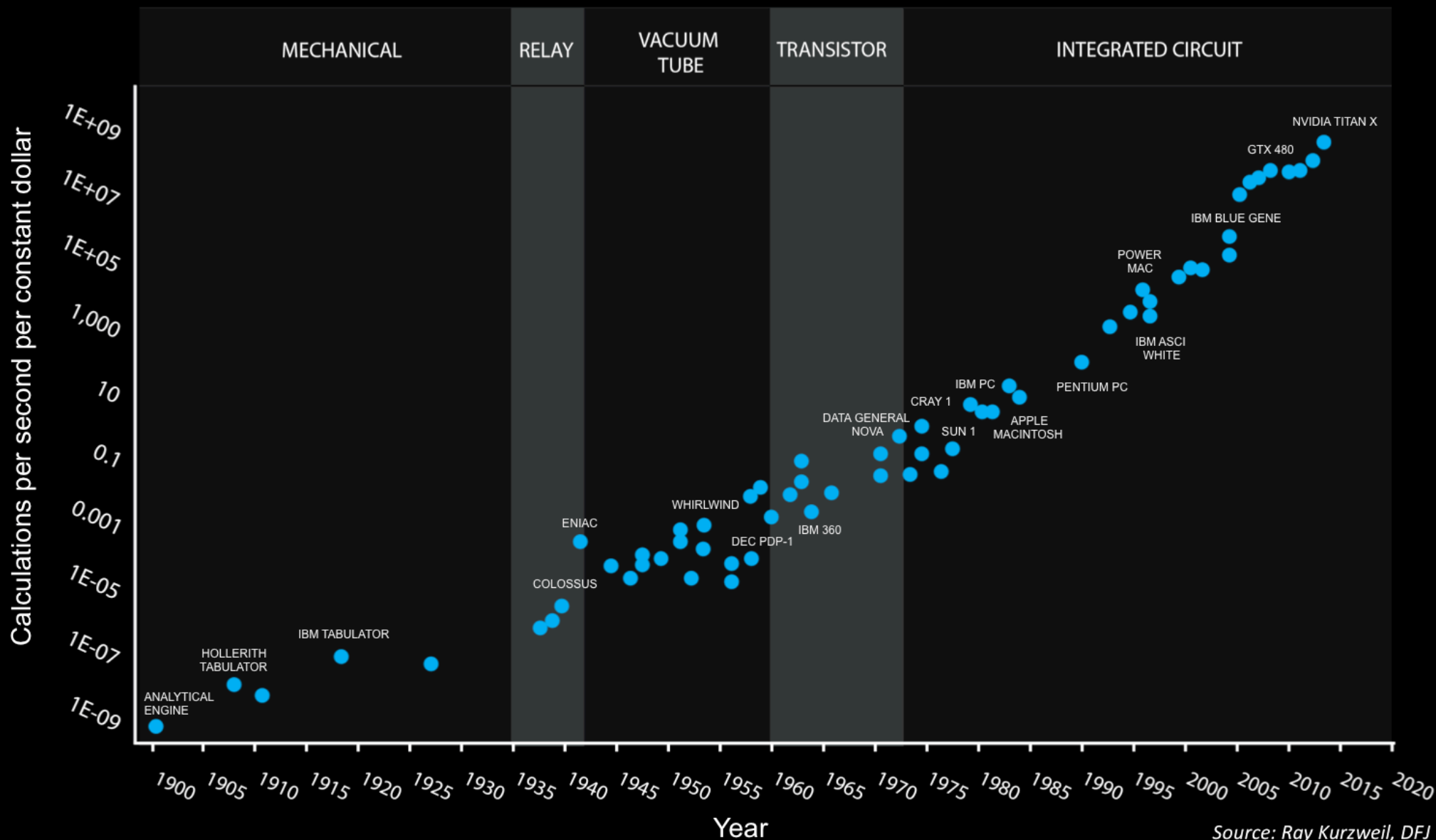


# Generative AI

The Dawn of a New Age

# 120 Years of Moore's Law



Source: Ray Kurzweil, DFJ

November 30, 2022



# ChatGPT Sprints to One Million Users

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



\* one million backers \*\* one million nights booked \*\*\* one million downloads

Source: Company announcements via Business Insider/LinkedIn





the  
decoder

ChatGPT is just a taste of a "monster" GPT-4 says  
Gary Marcus



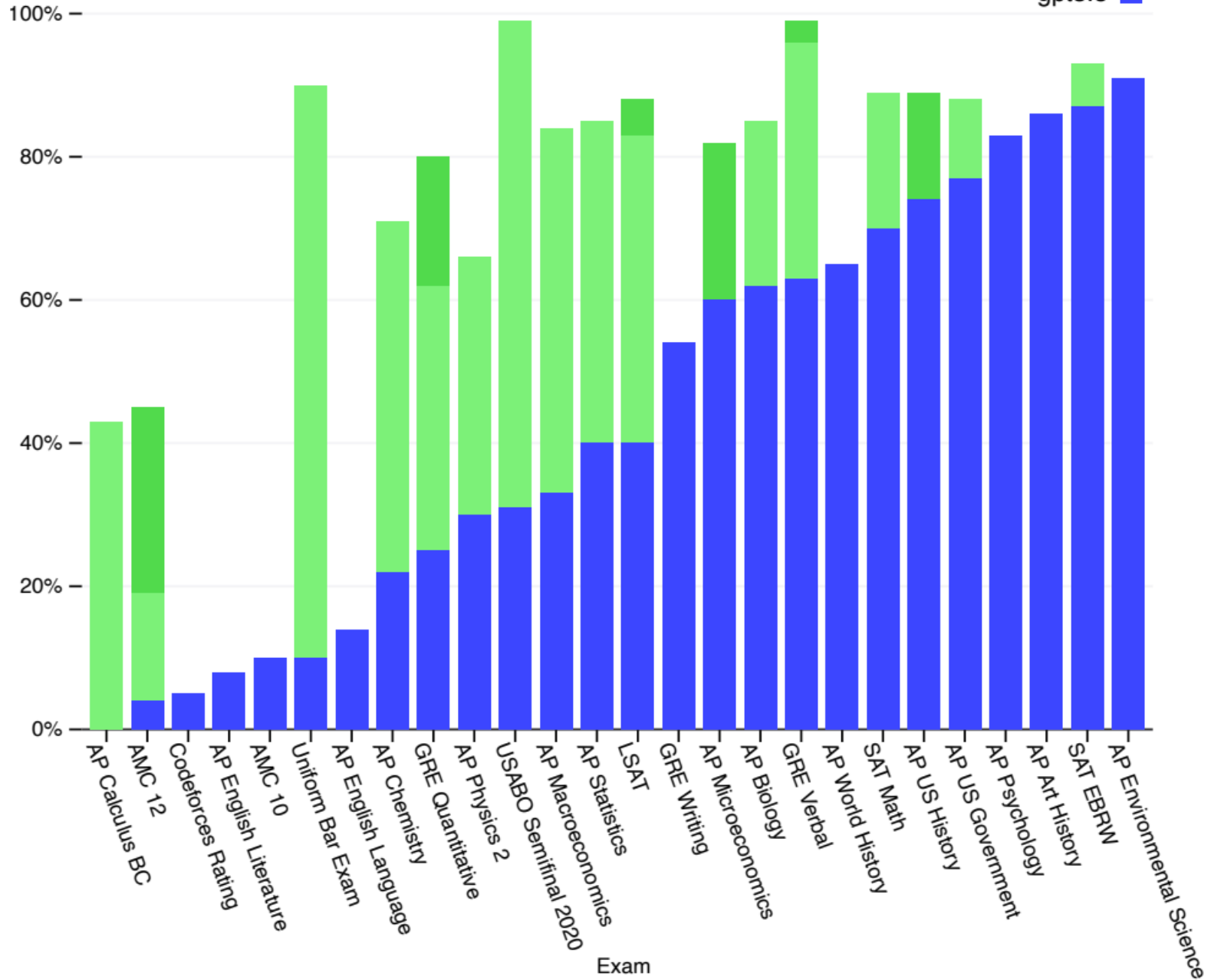
ChatGPT 3: 175 Billion

ChatGPT 4: 100+ Trillion

# Exam results (ordered by GPT-3.5 performance)

Estimated percentile lower bound (among test takers)

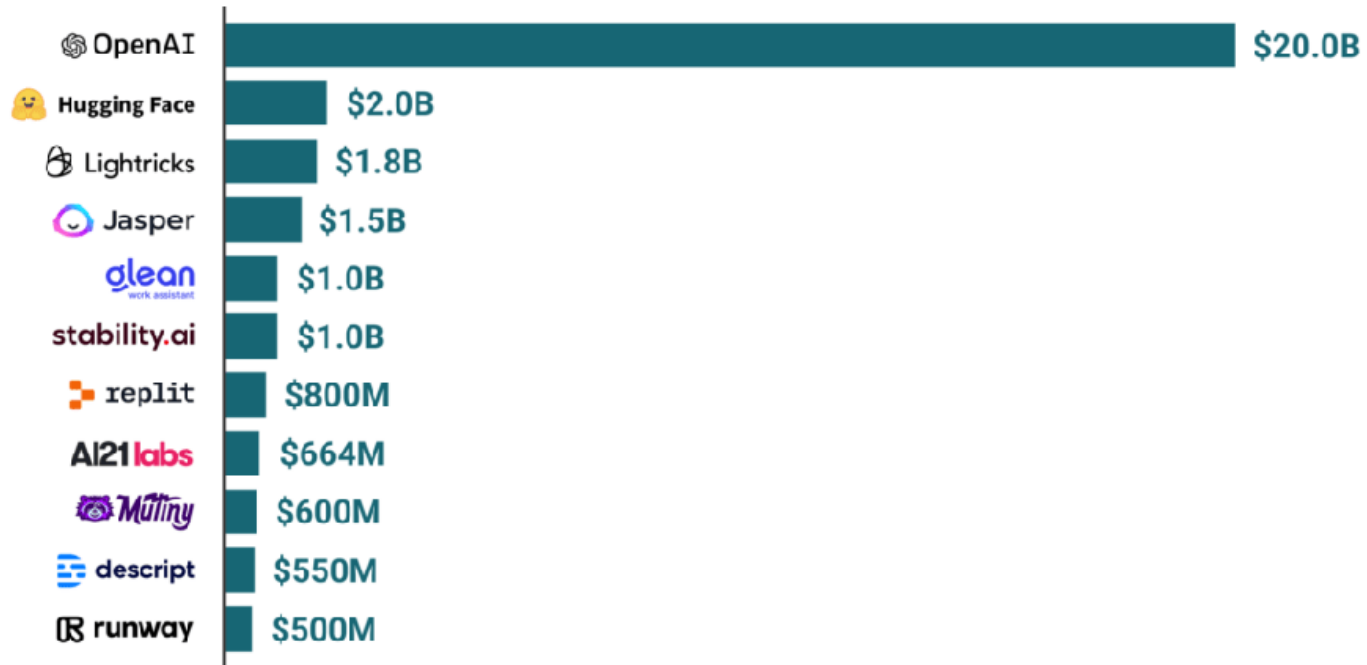
gpt-4  
gpt-4 (no vision)  
gpt3.5



# Forbes

## Most highly valued generative AI companies

Disclosed valuations (as of 2022)



Source: CB Insights

Excludes companies that use generative AI for specific industrial applications such as protein design.

CBINSIGHTS

2023



March 14, 2023



March 21, 2023



May 2, 2023

Inflection

WILL KNIGHT BUSINESS JUN 26, 2023 8:00 AM

# Google DeepMind's CEO Says Its Next Algorithm Will Eclipse ChatGPT

Demis Hassabis says the company is working on a system **called Gemini** that will tap techniques that helped AlphaGo defeat a Go champion in 2016.



PHOTOGRAPH: SAMUEL DE ROMAN/GETTY IMAGES



Announced July 12, 2023



$$7 + 12 + 23 = 42$$

LlaMA 2 July 18, 2023



Reported in Bloomberg July 19, 2023



# BUSINESS INSIDER

August 4, 2023

**Amazon CEO Andy Jassy says 'every single one' of its teams is working on generative AI projects as the company rushes to keep pace with the AI boom**





- PwC – AI could contribute more than \$15 trillion to the global economy by 2030
- the impact of AI adoption could be greater than the inventions of the internet, mobile broadband and the smartphone — combined .



# DATA SCIENCE



 Advanced Data Analysis

← plugin

VW



insurance.csv  
Spreadsheet



You are an insurance industry expert and a data science expert.

I am sharing with you a dataset containing information about people who have purchased health insurance.

I would like you to help me analyze and visualize this data.

I would like to analyze the relationship between BMI and charges.

Let's proceed with our analysis and visualization in a step-by-step way.



Alright, let's begin by loading the data and examining its structure. We'll check the first few rows to get a sense of the information available in the dataset.



Finished working

Show work

The dataset consists of several columns:

1. **age**: The age of the insured.
2. **sex**: The gender of the insured.
3. **bmi**: Body Mass Index (BMI) of the insured. It's a measure used to determine whether a person has a healthy body weight for their height.
4. **children**: The number of children/dependents covered by the insurance.
5. **smoker**: Whether the insured smokes or not.
6. **region**: The beneficiary's residential area in the US.
7. **charges**: Individual medical costs billed by health insurance.

Since you mentioned an interest in analyzing the relationship between BMI and charges, we should start by visualizing this relationship.

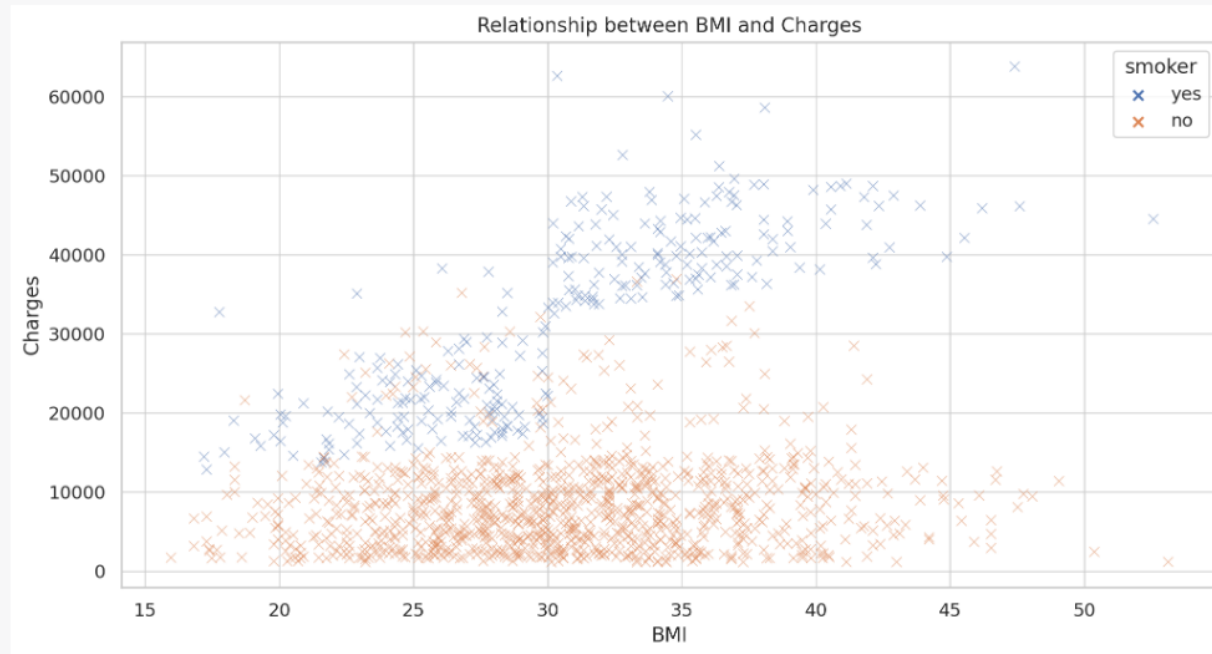
Would you like to proceed with a scatter plot to visually inspect this relationship?





Finished working

Show work



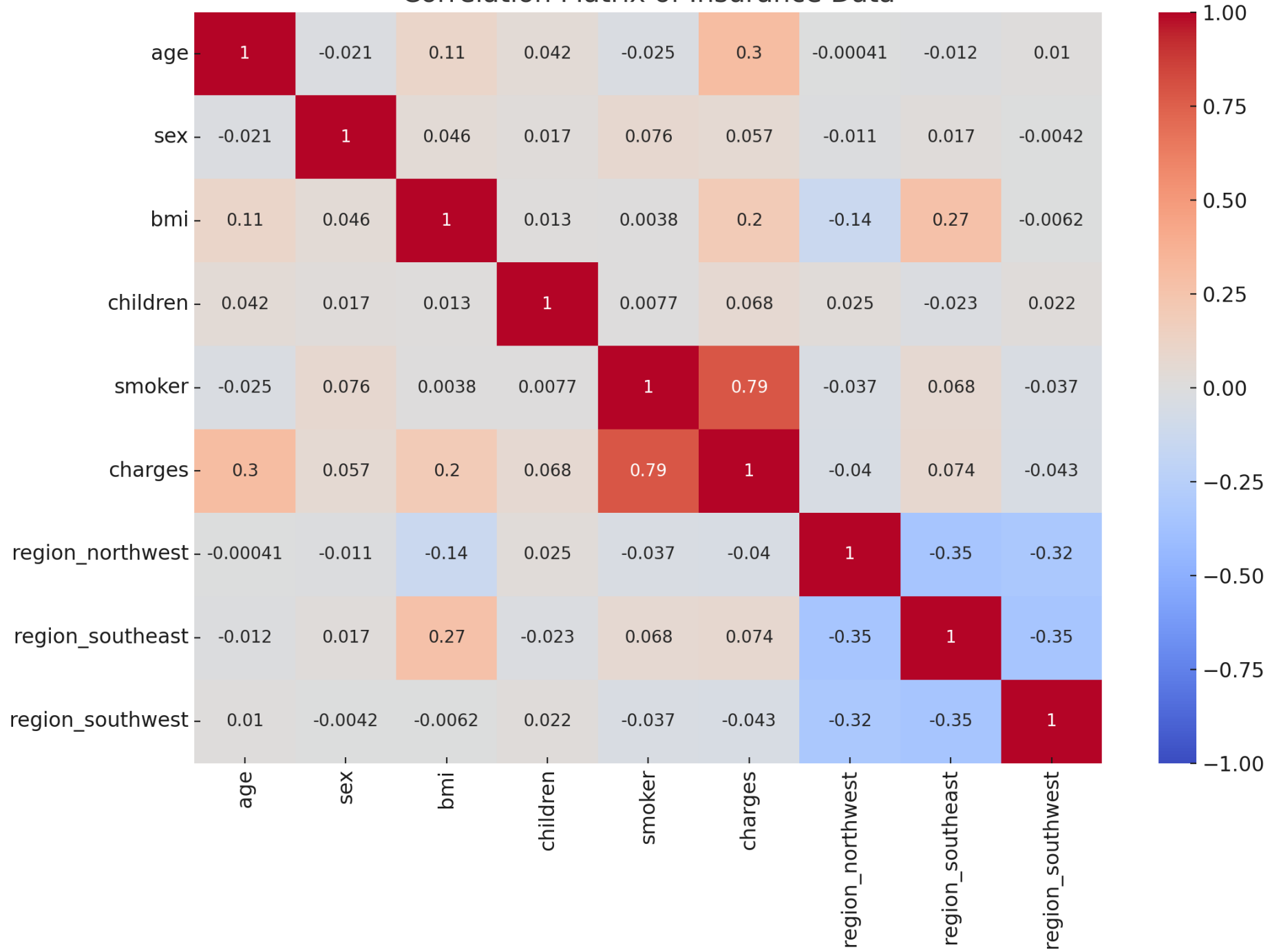
The scatter plot provides a visual representation of the relationship between BMI and insurance charges. Here are a few observations:

1. **General Trend:** There seems to be a positive correlation between BMI and charges, indicating that as BMI increases, the insurance charges also tend to increase.
2. **Smoker vs. Non-Smoker:** The color differentiation based on the 'smoker' attribute reveals that smokers generally have higher charges than non-smokers, even at the same BMI levels. This is especially pronounced for individuals with a higher BMI.
3. **Clusters:** There are distinct clusters visible, especially for smokers. This could indicate specific pricing tiers or other underlying factors.

To quantify the relationship between BMI and charges, we can calculate the correlation coefficient. Would you like to proceed with that?

Regenerate

### Correlation Matrix of Insurance Data






Can you create, and share with me, an interactive html page displaying the BMI vs Charges scatterplot?



Finished working

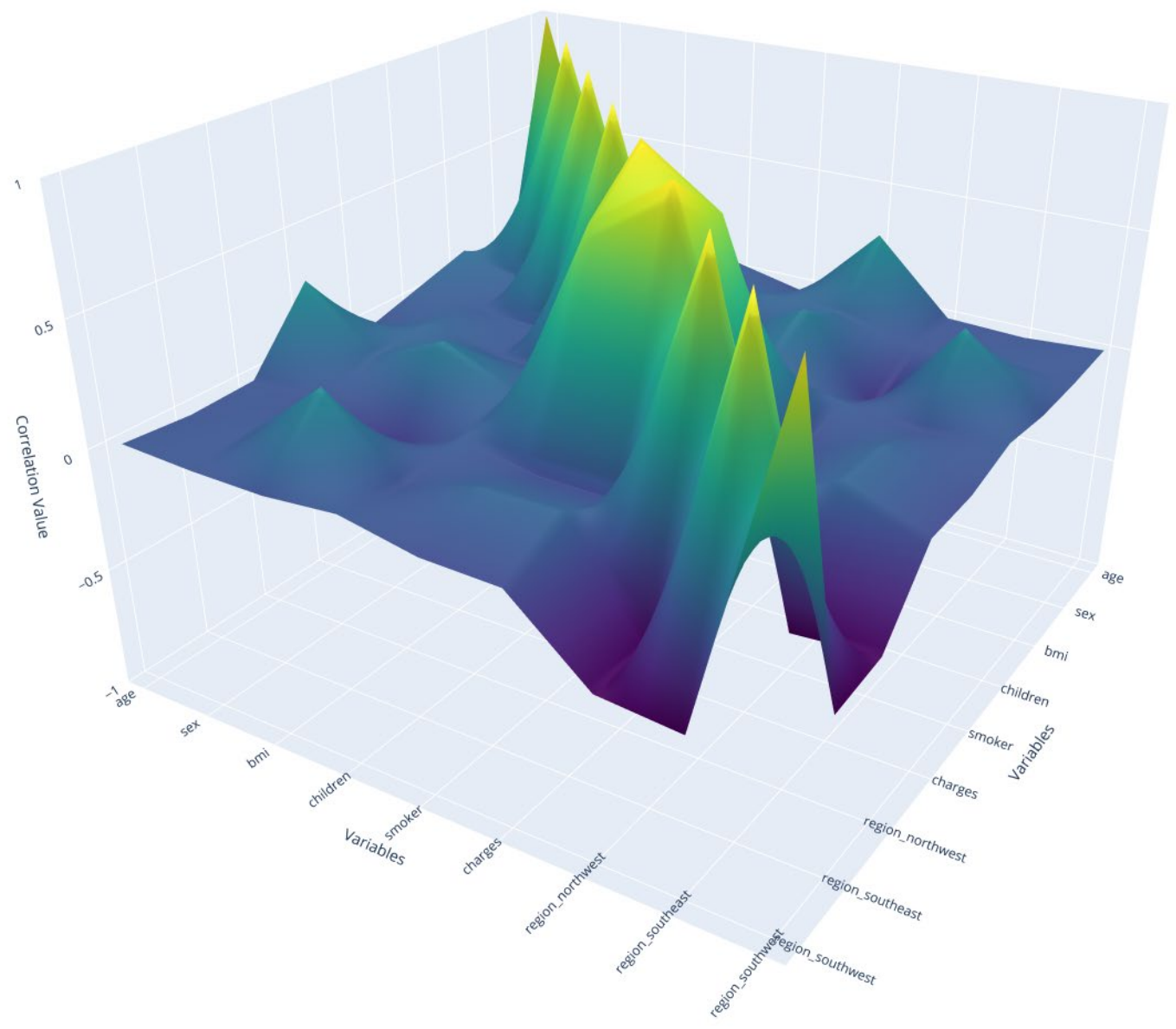
Show work 



I've created an interactive HTML page displaying the scatterplot of BMI vs. Charges. You can hover over the data points to see additional information such as age, sex, number of children, and region.

You can [download the interactive HTML page here](#).

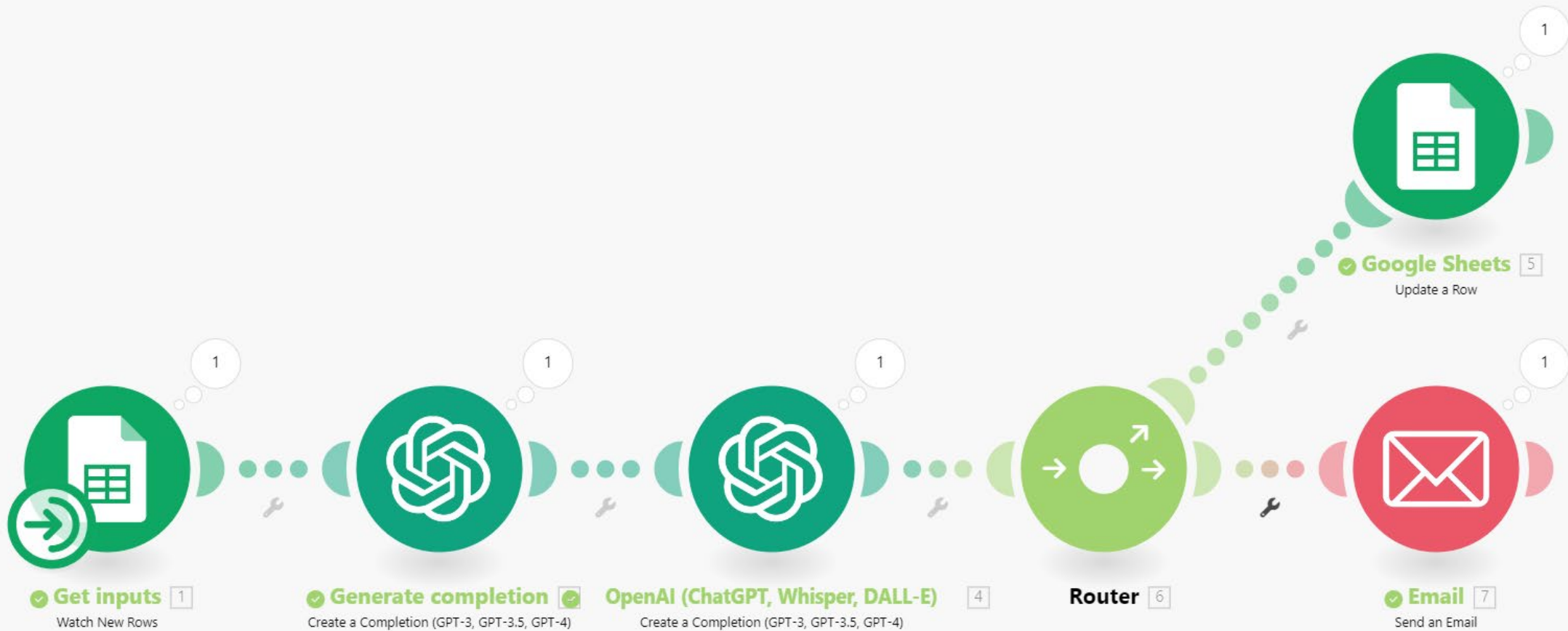
Once downloaded, you can open the file in any web browser to view and interact with the plot. Let me know if you need any further assistance!





# Workflows and Agents





The topic of the day is: Flowers. The outline is:

I. Introduction

A. Definition of Flowers

B. Significance of Flowers

II. History of Flowers

A. Ancient Use of Flowers

B. Evolution of Flower Cultivation

III. Types of Flowers

A. Wildflowers

B. Cultivated Flowers

IV. Uses of Flowers

A. Ornamental

B. Medicinal

C. Culinary

V. Symbol.

The essay is: Flowers are a beautiful and versatile part of nature. They come in a variety of shapes, sizes, and colors, and have been used for centuries for a variety of purposes. Flowers have a long and varied history, and have been used for both ornamental and medicinal purposes.

Flowers have been used since ancient times, with some of the earliest recorded uses of flowers being in ancient Egypt. Flowers were used to decorate tombs and were used in religious ceremonies. Over time, the cultivation of flowers became more widespread, and flowers were used for a variety of purposes.

Today, there are two main types of flowers: wildflowers and cultivated flowers. Wildflowers are those that grow naturally in the wild, while cultivated flowers are those that are grown by humans in gardens or greenhouses. Both types of flowers can be used for a variety of purposes.

Flowers are often used for ornamental purposes. They can be used to decorate homes, gardens, and other spaces. They can also be used to create bouquets and other arrangements. Flowers can also be used for medicinal purposes, as some flowers have healing properties. Finally, flowers can be used in cooking, as some flowers are edible and can be used to add flavor and color to dishes.

Flowers also have a symbolic meaning. Different flowers can represent different things, such as love, friendship, and beauty. They can also be used to express emotions and feelings.

In conclusion, flowers are a beautiful and versatile part of nature. They have a long and varied history, and can be used for a variety of purposes. They can be used for ornamental, medicinal, and culinary purposes, and also have a symbolic meaning.



Concerns

Languge learning model  
with superhume perssuive abyralitjes  
perseasive lanoguace abllities





**You**

I will be giving a presentation on Generative AI to the National Association of Insurance Commissioners (NAIC) in a few weeks. A topic I would like to touch on is the possibility that LLMs may attain superhuman persuasive abilities. How might such abilities affect the interests of the NAIC?





## ChatGPT

The prospect of Language Learning Models (LLMs) like GPT-4 attaining superhuman persuasive abilities presents several implications and potential impacts for the National Association of Insurance Commissioners (NAIC):

1. **Regulatory Challenges:** LLMs with superior persuasive skills could pose significant challenges in terms of regulation. For instance, they might be used to craft extremely convincing marketing materials or policy documents, which could mislead consumers or skew the market in favor of certain insurers. The NAIC would need to develop new guidelines and regulations to ensure transparency and fairness in the use of such AI technologies in insurance communications.
2. **Consumer Protection Concerns:** Superhuman persuasive abilities in AI could potentially manipulate consumer decisions, raising ethical concerns. The NAIC would be tasked with safeguarding consumer interests by ensuring that AI interactions are clearly disclosed and that consumers are not misled by AI-generated recommendations or advice.
3. **Market Competition and Innovation:** While such AI capabilities might drive innovation and efficiency in insurance services, they could also disrupt market competition. Smaller insurers without access to advanced AI might struggle to compete, leading to market consolidation. The NAIC would need to monitor these dynamics to maintain a healthy, competitive insurance market.

vw**You**

I would like to show a more detailed example of superhuman persuasive capabilities. Consider two car insurance companies: State Farm and Allstate. Suppose I am an employee in Allstate and would like an LLM to help me convince customers that Allstate is better than State Farm when it comes to car insurance. What might I say to prospective customers?

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Langulivoi



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15



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maullation

Language Learning model  
with superhuman lanuce,  
sueriun perseessive abilities.



Administration

OCTOBER 30, 2023

# Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence



▶ BRIEFING ROOM ▶ PRESIDENTIAL ACTIONS



Policy paper

# The Bletchley Declaration by Countries Attending the AI Safety Summit, 1-2 November 2023

Published 1 November 2023







# BlueSea Frontier

Compute Cluster





# OpenAI Upgrades ChatGPT: The AI Chatbot Can Now “See, Hear and Speak”

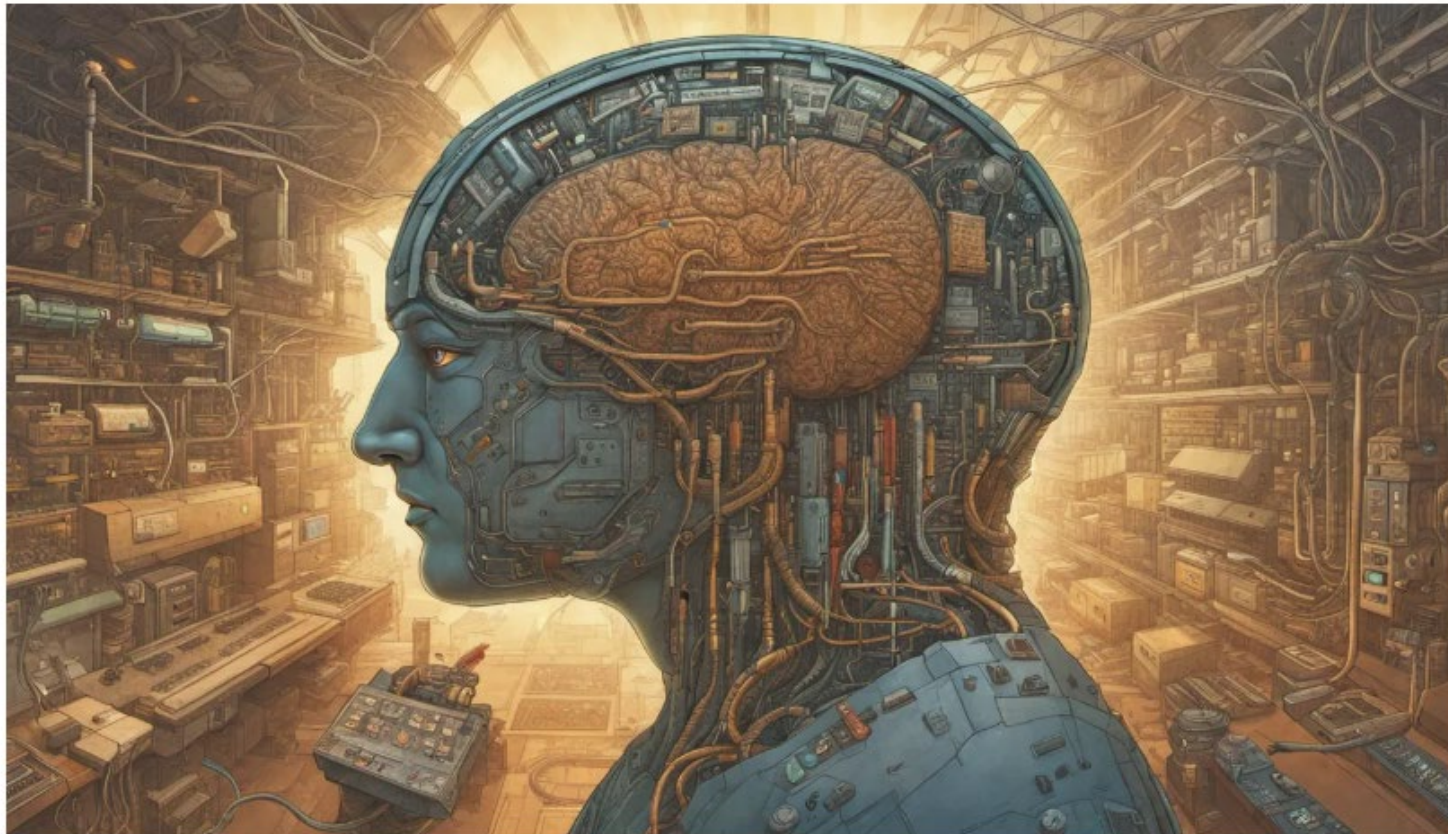
ChatGPT gains voice chat and can discuss images in a major upgrade from OpenAI as the company looks to dominate the industry.



By [Jose Antonio Lanz](#)

📅 Sep 25, 2023

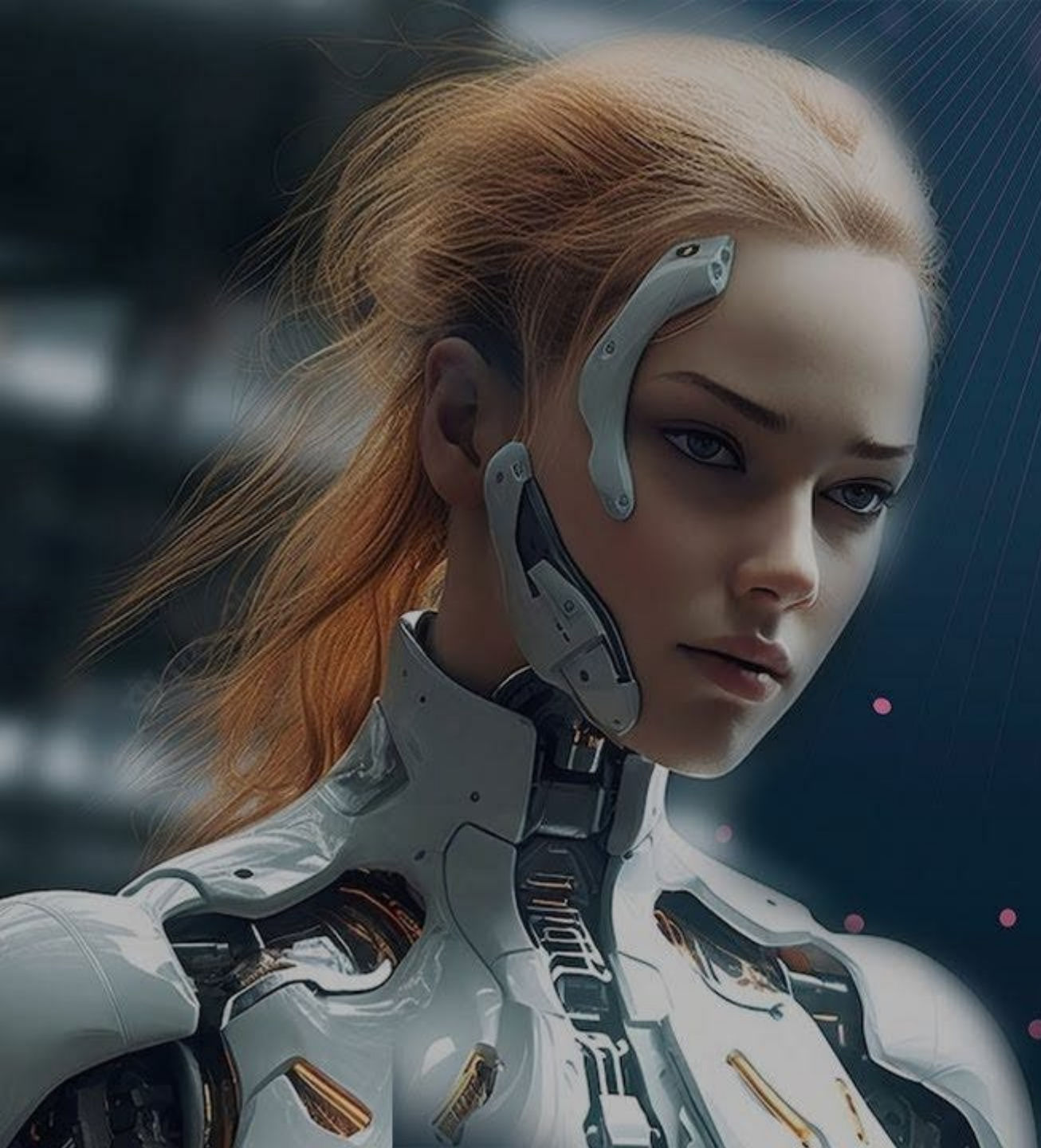
🕒 4 min read





Grok





Google

LAUNCHES  
NEW AI

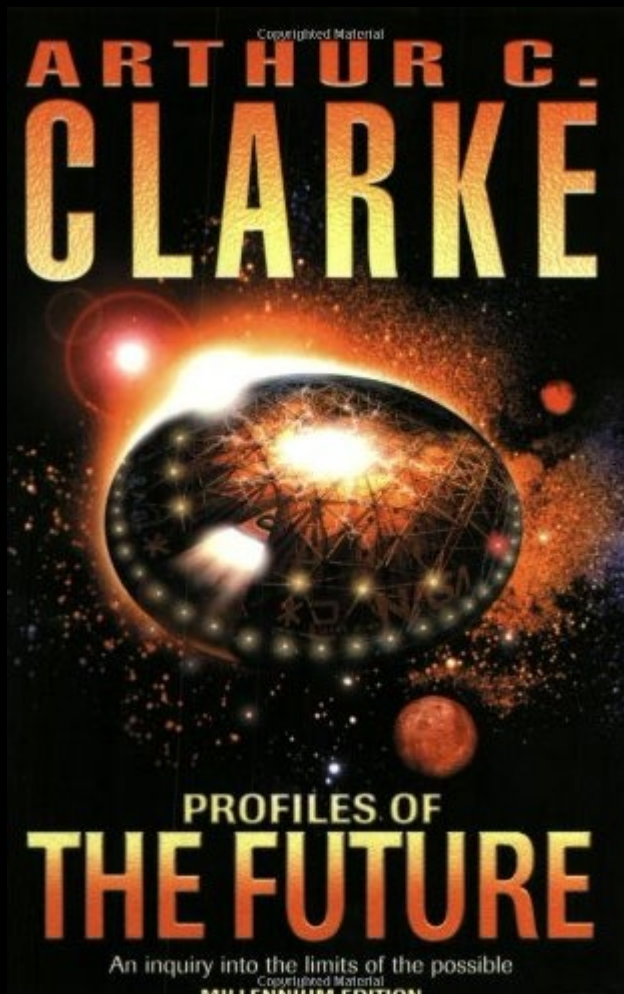
 Gemini



 OpenAI  
**CHATGPT-5**







Hazards of prophecy: the failure of imagination



# Circa 1946

Inventors of the ENIAC and UNIVAC Computers



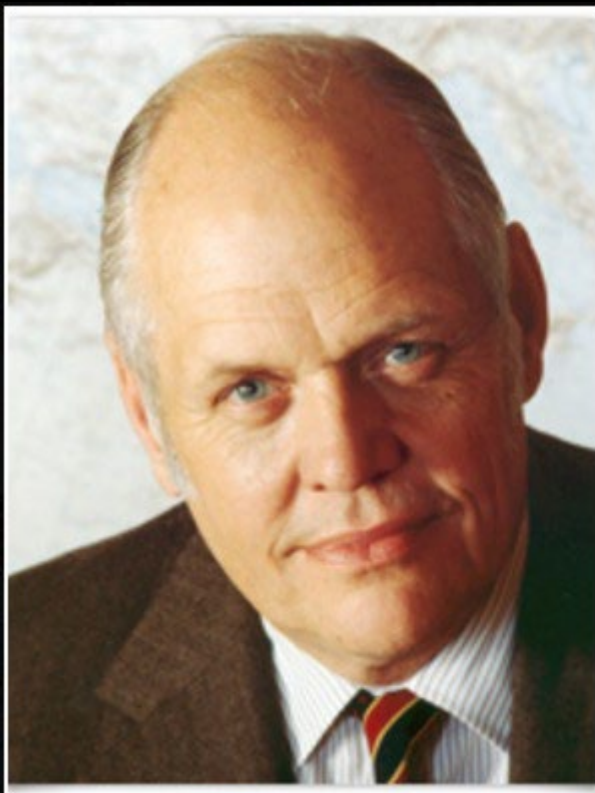
J. Presper Eckert



john mauchly

...by the year 2000, there would be at most only a few dozen electronic digital computers in the world.

CIRCA 1974



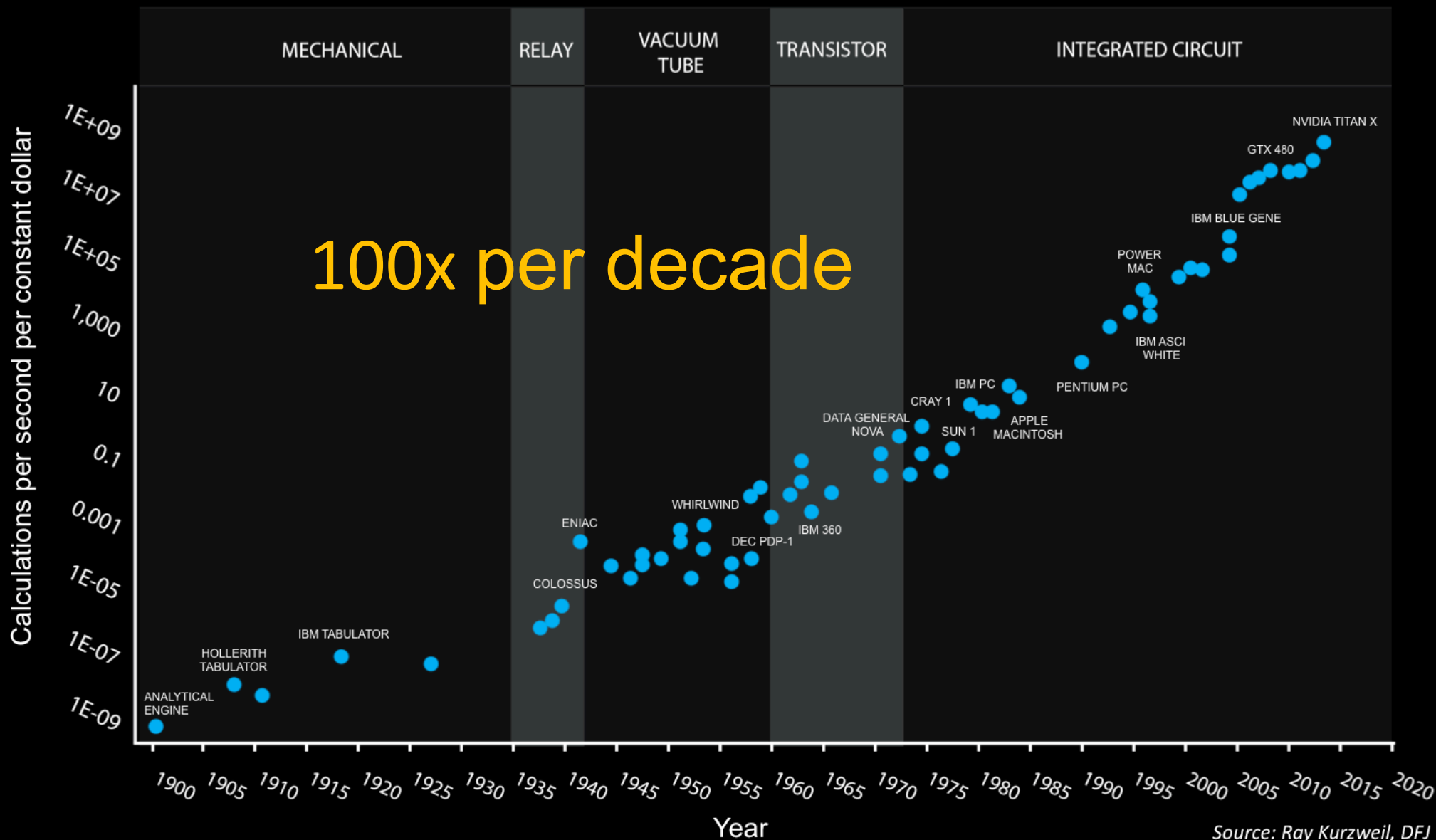
There is no reason for any individual  
to have a computer in their home.

— *Ken Olsen* —

AZ QUOTES

President of DEC

# 120 Years of Moore's Law



Source: Ray Kurzweil, DFJ



Cray I (1975-1982)

Power Consumption = 10 homes

\$55 million (2023 dollars)

$\times 1000 \approx$



iPhone 5  
(2012)

November 30, 2022: ChatGPT – 175 billion Parameters

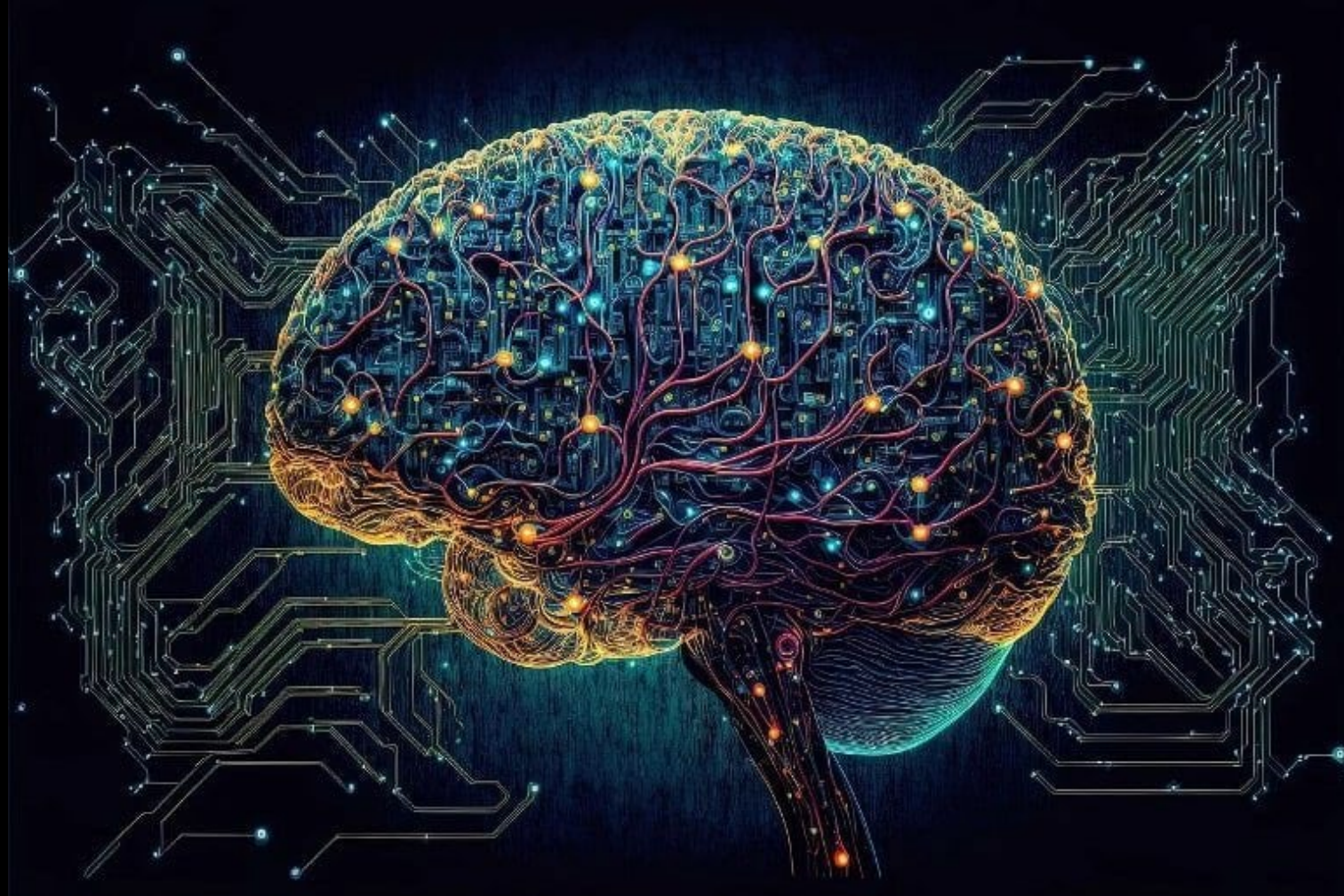
March 14, 2023: ChatGPT 4 – 100+ trillion Parameters

x 570

time < 1 year



# strong scaling hypothesis



one million times more powerful than ChatGPT  
within 10 years



Nvidia's GPUs had boosted AI processing performance  
by a factor of no less than one million in the last 10  
years.

In the next 10 years Nvidia is going to do it again!  
– Jensen Huang CEO Nvidia

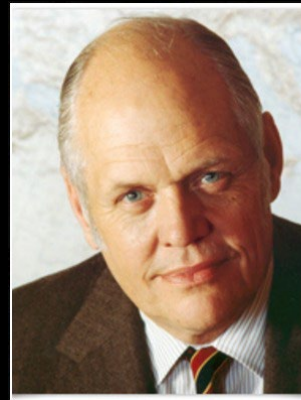
30 Moore Years = 100 x 100 x 100



J. Presper  
Eckert



john  
mauchly



There is no reason for any individual  
to have a computer in their home.

— Ken Olsen —

AZ QUOTES



iPhone 5  
(2012)

30 Moore Years = 10 Nvidia Years



From an evolutionary standpoint, the human brain is ill-equipped to comprehend large numbers and exponential growth

The problem is that the frontiers of AI are intimately associated with both of these



2016

Generative Adversarial Text to Image Synthesis

Scott Reed, Zeynep Akata, Xincheng Yan, Lajanugen Logeswaran,  
Bernt Schiele, Honglak Lee



2023

prompt: A Purple Anemone Flower

# AI-Generated Art Personifies Countries as Different Women Across the Globe

## What If Countries Were People?

Imagined by Midjourney AI



HungryMinded · Follow

Published in Seeds For The Future · 14 min read · Jul 2

2023



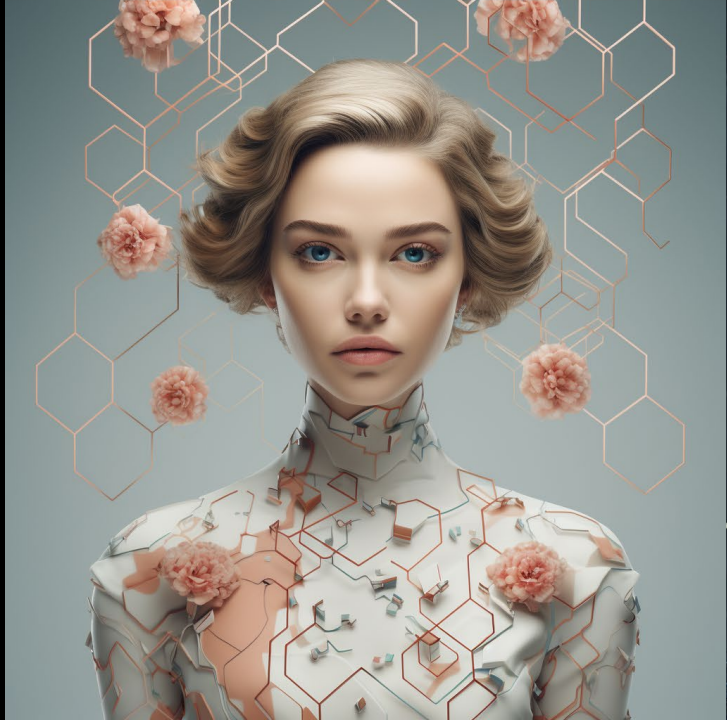








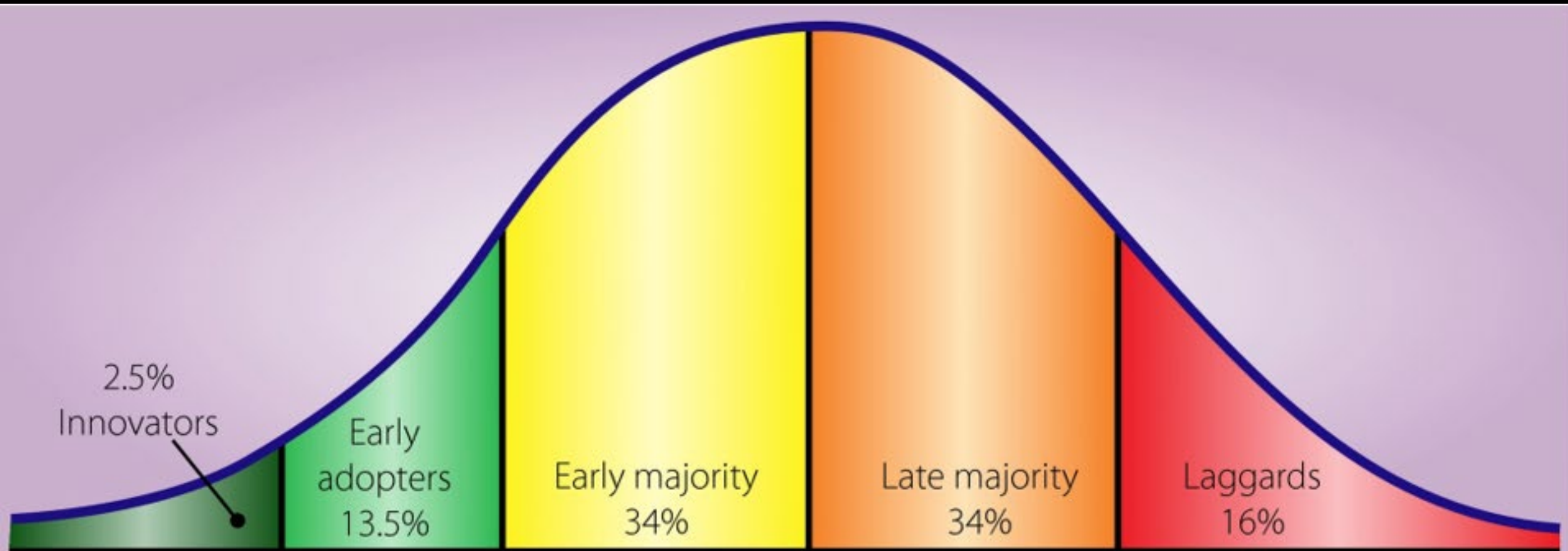






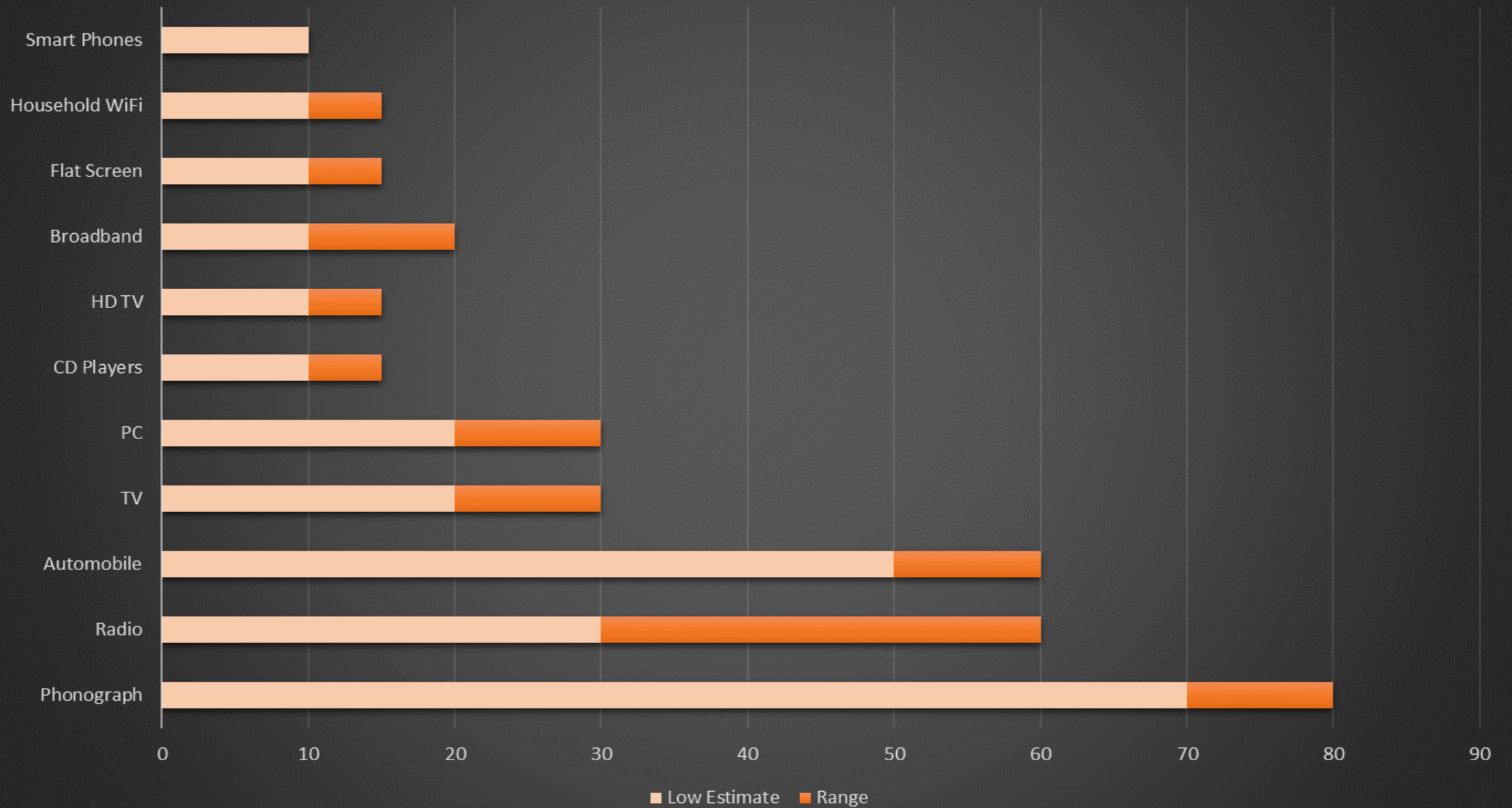


# Technology Adoption





# Years to Widespread Adoption



All truth passes through three stages.

1. It is ridiculed.
2. It is violently opposed.
3. It is accepted as being self-evident.

– *Arthur Schopenhauer*













