

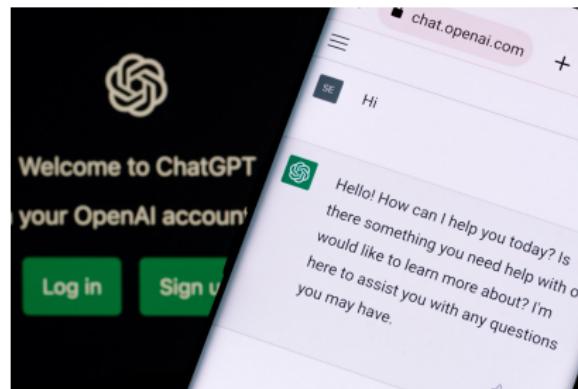
# INTRODUCTION TO CHATGPT

Yogesh Kulkarni

# Overview of ChatGPT

## What is ChatGPT?

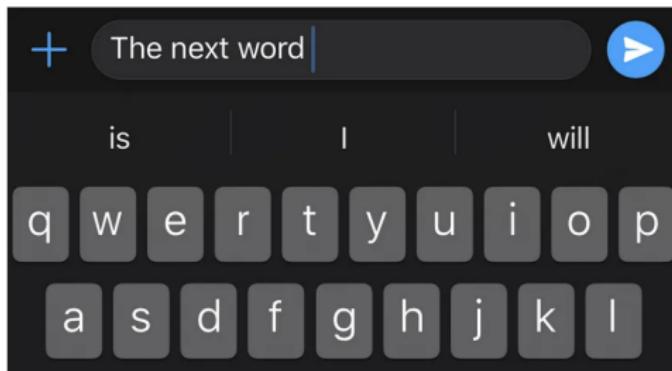
- ▶ A Chatbot
- ▶ A language model, that takes 'prompt' from user and generates a response.
- ▶ Built by OpenAI and released in Nov 2022
- ▶ Got 1m users in 5 days (Insta 2.5 months, Spotify 5m, Facebook 10m, Netflix 3.5yrs)
- ▶ Link: <https://chat.openai.com/chat>
- ▶ Details: <https://openai.com/blog/chatgpt/>



(Ref: OpenAI, creator of ChatGPT, casts spell on Microsoft - The Jakarta Post

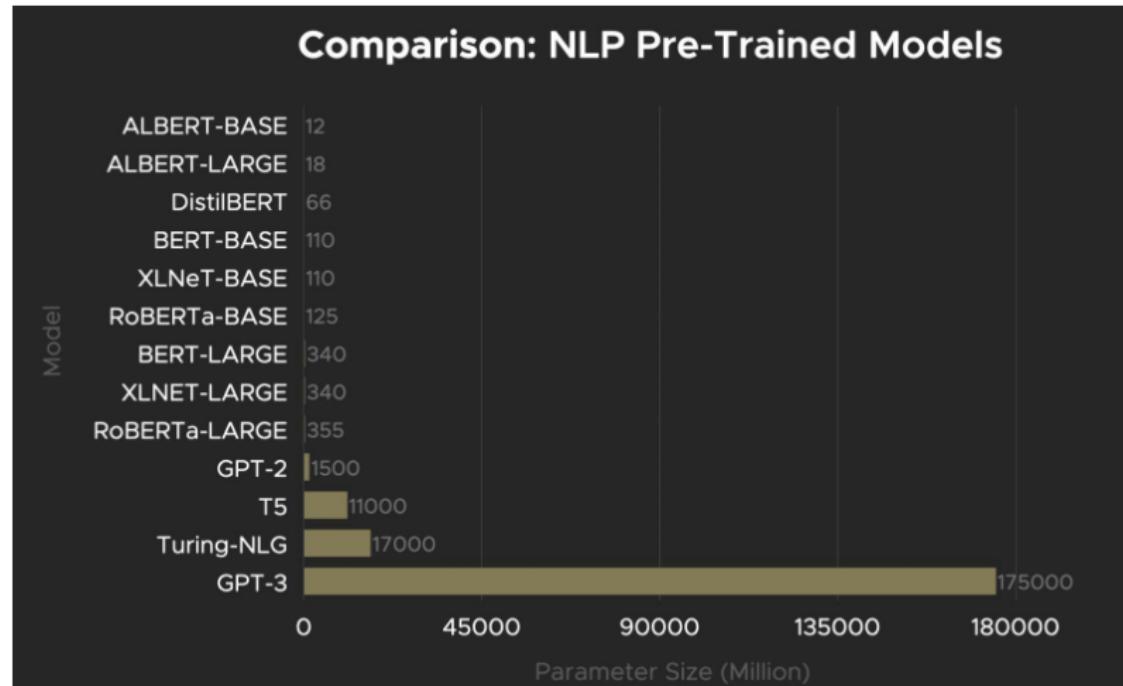
## What is a Language Models?

- ▶ While typing SMS, have you seen it suggests next word?
- ▶ While typing email, have you seen next few words are suggested?
- ▶ How does it suggest? (suggestions are not random, right?)
- ▶ In the past, for "Lets go for a ... ", if you have typed 'coffee' 15 times, 'movie' say 4 times, then it learns that. Machine/Statistical Learning.
- ▶ Next time, when you type "Lets go for a ", what will be suggested? why?
- ▶ This is called Language Model. Predicting the next word. When done continuously, one after other, it spits sentence, called Generative Model.



Next word prediction using language modeling in keyboards(Mandar Deshpande)

# Large Language Models - Comparison



(Ref: Deus.ai <https://www.deus.ai/post/gpt-3-what-is-all-the-excitement-about>)

# Open AI: Who are these guys?

- ▶ San Francisco-based artificial intelligence company
- ▶ Famous for its well-known DALL-E, generates images from prompts.
- ▶ Initially supported by Elon Musk
- ▶ The CEO is Sam Altman, who previously was president of Y Combinator.
- ▶ Microsoft is a partner and investor.
- ▶ Mission: To ensure that artificial general intelligence benefits all of humanity. Prevent misuse of AI

## OpenAI Founded

The company was founded with the goal of developing and promoting friendly AI in a responsible way, with a focus on transparency and open research.



(Ref: <https://www.slideegg.com/open-ai-chat-gpt>)

## GPTs Trainings

### GPT: Generative Pre-trained Transformers

- ▶ GPT-1 is pre-trained on the BooksCorpus dataset, containing 7000 books amounting to 5GB of data
- ▶ GPT-2 is pre-trained using the WebText dataset which is a more diverse set of internet data containing 8M documents for about 40 GB of data
- ▶ GPT-3 uses an expanded version of the WebText dataset, two internet-based books corpora that are not disclosed and the English-language Wikipedia which constituted 600 GB of data

## GPT3 vs ChatGPT

	GPT-3	ChatGPT
<b>Training Parameters</b>	175 billion	175 Billion RLHF Technique Human conversational text
<b>Designed For</b>	NLP Tasks	Chatbot apps
<b>Content Retention Ability</b>	No	Yes
<b>Use Cases</b>	Creative Writing, Business Writing, Ads, Translation, Summarization, Data Analysis	Customer Service, Data Analysis, Blogging, Copywriting, Coding, Debugging, etc.

(Ref:ChatGPT Explained: Complete A-Z Guide - Kripesh Adwani)

# Applications

# Explain Complex Subjects



What is neuroscience?



Neuroscience is the scientific study of the nervous system, which includes the brain, spinal cord, and peripheral nerves. It is a multidisciplinary field that combines knowledge from biology, chemistry, physics, psychology, and other fields to understand how the nervous system works and how it relates to behavior and cognition. Researchers in neuroscience use a variety of methods, including neuroanatomy, neurophysiology, and neuroimaging, to study the structure and function of the nervous system.



(Ref: Top 10 Chat GPT Use Cases - Simplilearn)

# Get Custom Marketing Strategy



How should i promote my youtube videos on social media?



Promoting your YouTube videos on social media can be a great way to increase views and engagement. Here are a few strategies you can use:

1. Share your videos on your personal social media accounts. This includes your Facebook, Twitter, Instagram, and other accounts where you have a following. Encourage your friends, family and followers to share the video with their own networks.
2. Join relevant communities and groups on social media. For example, if you're making cooking videos, join Facebook groups and Reddit communities dedicated to cooking. Share your videos with the group and engage with the community.
3. Use social media ads. Platforms like Facebook, Instagram, and Twitter allow you to create targeted ads that promote your videos



(Ref: Top 10 Chat GPT Use Cases - Simplilearn)

## Write Articles



Write an article on machine learning in 500 words



Machine learning is a rapidly growing field that is transforming the way we live and work. It is a branch of artificial intelligence that allows computers to learn from data, without being explicitly programmed. Machine learning is changing the way we interact with technology and has the potential to revolutionize many industries, including healthcare, finance, transportation, and more.

The basic idea behind machine learning is that computers can learn from data, without being explicitly programmed. This is done by feeding a computer large amounts of data and allowing it to find patterns and make predictions. There are three main types of machine learning: supervised learning, unsupervised learning, and reinforcement learning.

Supervised learning is the most common type of machine learning. It involves training a computer on a labeled dataset, where the desired output is ■

# Summarize Book



summarize the book Gullivers travels



Gulliver's Travels is a satirical novel written by Jonathan Swift in 1726. The book tells the story of Lemuel Gulliver, a ship's surgeon who becomes shipwrecked and ends up on a series of strange and fantastical islands. The novel is divided into four parts, each of which tells the story of Gulliver's travels to a different island.

In Part 1, Gulliver washes up on the island of Lilliput, where he encounters a race of tiny people who are locked in a bitter war with their neighboring island of Blefuscus. Gulliver becomes embroiled in the politics of the island and ultimately helps the Lilliputians defeat the Blefuscudians.

In Part 2, Gulliver travels to the island of Brobdingnag, where he encounters a race of giants. He is initially treated kindly by ■

## Usage In Industries?

- ▶ Generating automated responses to frequently asked questions
- ▶ Can help improve customer service as well as train technicians
- ▶ Helping write professional and effective emails, quotes, and proposals;
- ▶ Generating marketing and advertising content
- ▶ Providing technical assistance, such as troubleshooting
- ▶ Helping generate training material for employees.

(Ref: ChatGPT Could Be the 'Write' Choice for HVACR Contractors - Joanna R. Turpin)

## Possible applications

- ▶ Multi-Language Support: ChatGPT's ability to translate languages can be combined with Arduino to create multi-language support for devices. This feature makes it possible for users from different countries to interact with the device in their language. For example, you can create a device that provides information about local tourist attractions and supports multiple languages.
- ▶ Home Automation: One unique application of this combination is in the field of home automation. With ChatGPT's ability to understand and respond to natural language and the versatility of the Arduino platform, it's possible to create a fully voice-controlled smart home system.

(Ref: ChatGPT for Arduino - MoonPreneur)

# Are these Answers Correct?



How can I balance my hydronic heating system?



Balancing a hydronic heating system involves adjusting the flow rates of hot water to each radiator or heating element in your home to ensure even heating throughout the space. Here are the steps you can take to balance your hydronic heating system:

1. Identify all the radiators and heating elements in your home that are connected to the hydronic heating system.
2. Turn on the heating system and allow it to reach a stable operating temperature.
3. Starting with the first radiator or heating element closest to the boiler, partially close the flow valve and fully open the return valve. This will reduce the flow of hot water to the radiator.
4. Use a thermometer to measure the temperature of the water entering and exiting the radiator. The difference in temperature should be around 20 degrees Fahrenheit.
5. If the temperature difference is higher or lower than 20 degrees, adjust the flow valve until the temperature difference is around 20 degrees.
6. Repeat steps 3 to 5 for each radiator or heating element in your home, working your way outwards from the boiler.
7. Once all radiators and heating elements have been balanced, check the temperature in each room to ensure even heating.
8. Make any necessary adjustments to the flow valves to achieve even heating throughout your home.



It's important to note that balancing a hydronic heating system can be a complex process, and you may want to consider hiring a professional HVAC technician to ensure it is done correctly.

(Thanks to Natalie for the question!!)

# Are these Answers Correct?



How to respond to a customer who thinks a dirt separator for a closed loop heating system is too expensive?



If a customer thinks a dirt separator for a closed loop heating system is too expensive, here's how you can respond:

1. Explain the benefits: Start by explaining the benefits of a dirt separator, such as improved system efficiency, reduced maintenance costs, and longer equipment life. Emphasize that the initial cost of a dirt separator will be offset by these long-term benefits.
2. Compare the cost: Provide a comparison of the cost of a dirt separator to other components of the heating system. Explain that while the initial cost of a dirt separator may be higher, it is a crucial component that will help protect other expensive components, such as boilers, pumps, and valves.
3. Highlight potential issues: Explain that without a dirt separator, the heating system may experience issues such as reduced heat transfer efficiency, clogging of pipes and valves, and increased energy consumption, which can lead to higher utility bills.
4. Offer options: If the customer is still hesitant, offer options that may reduce the cost of the dirt separator, such as purchasing a more affordable model or offering financing options to spread out the cost.
5. Provide a warranty: Lastly, assure the customer that the dirt separator comes with a warranty and that they will be able to enjoy the benefits of a fully functional and efficient heating system for years to come.

Remember, it's important to be empathetic and understanding of the customer's concerns and offer options that work for them.

(Thanks to Natalie for the question!!)

## Conclusions

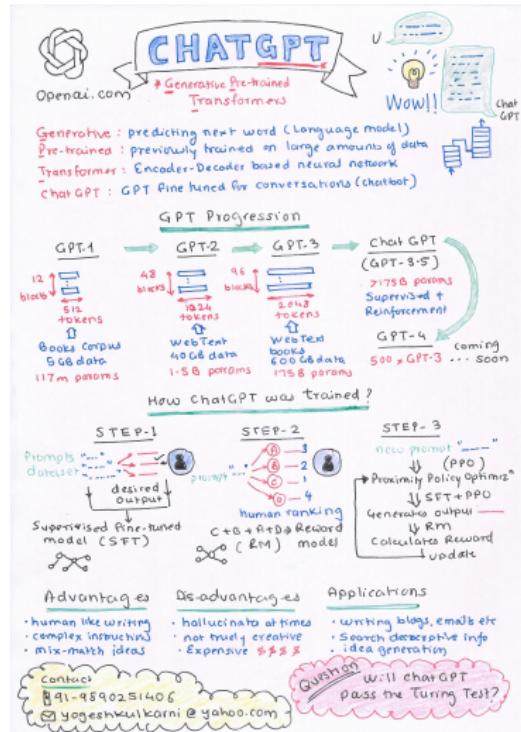
## Advantages

- ▶ Conversational Abilities
- ▶ Solving Complex Problems
- ▶ Retaining Previous Information
- ▶ Will replace mundane language tasks, How to articles, homeworks, etc

## Dis-advantages

- ▶ Sensitive to Input Phrasing
- ▶ Cannot replace humans for innovation, for which data does not exist already
- ▶ Keeps “hallucinating”: Tends to write plausible but incorrect content with confidence
- ▶ May not get language structure right all the time, e.g try getting ghazal written

# My Sketchnote



(Ref: <https://medium.com/technology-hits/overview-of-chatgpt-95f4b43645c0>)

## The After-shocks

## ChatGPT vs Google: Who is better?



Google: almost latest data, gives source, not trainable, looks more accurate

ChatGPT: a bit old data, no source, trainable, hallucinates

(Ref: ChatGPT Explained: Complete A-Z Guide - Kripesh Adwani)

# Will ChatGPT Kill Jobs?



Repetitive, boring and standard, language based jobs, for sure. Need to be more creative, experiential to stand against ChatGPT.

(Ref:ChatGPT Explained: Complete A-Z Guide - Kripesh Adwani)

# New Job Roles?

Prompt Engineer: Preparing input to AI effectively to get the desired answer.  
Will need to AI works in the background plus domain knowledge. Give context, examples etc to prime the model to give short specific answers than the usual page-long ones (davinci GPT3 in this case)

The screenshot shows the ChatGPT playground interface. At the top, there's a navigation bar with tabs for "Playground", "Q&A" (which is selected), "Save", "View code", "Share", and an ellipsis. The main area is a conversation window where the AI has responded to several questions. On the right side, there are various configuration options for the AI's response:

- Mode:** Set to "text-davinci-003".
- Temperature:** Set to 0.
- Maximum length:** Set to 100.
- Stop sequences:** An input field with placeholder text "Enter sequence and press Tab".
- Top P:** Set to 1.
- Frequency penalty:** Set to 0.
- Presence penalty:** Set to 0.

Below the configuration, there are two small icons: a yellow thumbs-up and a red thumbs-down, each with a count of 7.

Conversation history:

- I am a highly intelligent question answering bot. If you ask me a question that is rooted in truth, I will give you the answer. If you ask me a question that is nonsense, trickery, or has no clear answer, I will respond with "Unknown".
- Q: What is human life expectancy in the United States?  
A: Human life expectancy in the United States is 78 years.
- Q: Who was president of the United States in 1955?  
A: Dwight D. Eisenhower was president of the United States in 1955.
- Q: Which party did he belong to?  
A: He belonged to the Republican Party.
- Q: What is the square root of banana?  
A: Unknown
- Q: How does a telescope work?  
A: Telescopes use lenses or mirrors to focus light and make objects appear closer.
- Q: Where were the 1992 Olympics held?  
A: The 1992 Olympics were held in Barcelona, Spain.

(Ref: Advanced ChatGPT Guide - How to build your own Chat GPT Site - Drian Twarog)

# The Hype



**Elon Musk**  @elonmusk · Dec 4

Replies to [@sama](#)

**ChatGPT** is scary good. We are not far from dangerously strong AI.



**François Chollet**  @fchollet · 8h

With apps like Midjourney, Lensa, and **ChatGPT**, the age of consumer AI has finally arrived.



**@jh@sigmoid.social (Mastodon)** @jeremyphoward · 9h

I remember well when Google was first released. I felt confident that it would become a critical tool that we'd all rely on.

I haven't felt that way again, until now: **ChatGPT**.

In just a few days I've gotten so much out of it.

(Ref: ChatGPT - Intro & Potential Impact Sudalai Rajkumar, SRK)

Finally, from horses mouth!!



**Sam Altman**  @sama · 10 dic. ...  
ChatGPT is incredibly limited, but good enough at some things to create a misleading impression of greatness.  
  
it's a mistake to be relying on it for anything important right now. it's a preview of progress; we have lots of work to do on robustness and truthfulness.

877    3.856    27,5 mil    

(Ref: ChatGPT: training process, advantages, and limitations - By Sergio Soage, Machine Learning Engineer at Aivo)

## References

- ▶ Let's build GPT: from scratch, in code, spelled out: Andrej Karpathy
- ▶ ChatGPT and Reinforcement Learning - CodeEmporium

Thanks ...

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