



Ascendus AI



Reimagining Your Practice

An AI-Workshop For Doctors

Agenda

10:00 - 10:15 - Introductions

10:15 - 10:45 - Foundations - Understand Generative AI

10:45 - 11:15 - Learn to use ChatGPT more effectively

11:15 - 11:30 - Break

11:30 - 12:00 - Learn how to use AI to establish thought leadership

12:00 - 12:30 - Learn about opportunities in the GPT store

12:30.- 12:45 - Break

12:45 - 1:00 - Discover AI applications for scheduling, patient-follow up etc.

1:00 - 1:30 - Learn how to innovate patient-care with a Patient-Advisor agent

1:30 - 1:45 - Understand the legal aspects of AI in medicine

1:45 - 2:00 - Closing Remarks



Some Notes

1. Please feel free to take photos and share
2. Please review the AI Cards during breaks for ideas
3. Please interrupt whenever you have a question or a point to make



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Handouts For The Workshop

1. ChatGPT Quick Reference Guide
2. AI Ethics Checklist
3. EU AI Act Summary Sheet
4. AI Resources and Tools



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5 Volunteers For Setting Workshop Expectations



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Welcome to the Most Exciting Chapter in Your Career!

THE WALL STREET JOURNAL.

TECHNOLOGY | ARTIFICIAL INTELLIGENCE | THE FUTURE OF EVERYTHING

Why AI Is Medicine's Biggest Moment Since Antibiotics

The dean of Stanford University's medical school thinks artificial intelligence will transform the medicines you take, the care you get and the training of doctors



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The Software Developer Story

bt Business Today

HOME MAGAZINE ▾ BT TV ▾ MARKET TODAY ▾ TECH TODAY ▾ MONEY TODAY ▾ MUTUAL FUNDS INDUSTRY ▾ BTS

Immersives UPSTART ICC World Cup Corporate Petrol-Diesel Weather BT Bazaar



News / TECHNOLOGY / News / AI will take away jobs of outsourced coders in India in next 2 years: Stability AI ...

Fee

AI will take away jobs of outsourced coders in India in next 2 years: Stability AI CEO

India has over 5 million software programmers and now they are at risk of losing their jobs due to the AI threat.



Priya Singh

Updated Jul 19, 2023, 12:21 PM IST



Doctors who understand and apply AI in their practice will soon outperform doctors who ignore AI

Patient ratings	Doctor With AI	
	Doctor Without AI	
Treatment outcomes	Doctor With AI	
	Doctor Without AI	
Research output	Doctor With AI	
	Doctor Without AI	



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How This Workshop Can Help You

1. Foundations - Understand Generative AI
2. Learn to use ChatGPT more effectively
3. Learn how to use AI to establish thought leadership
4. Learn about opportunities in the GPT store
5. Discover AI applications for scheduling, patient-follow up etc.
6. Learn how to innovate patient-care with a Patient-Advisor agent
7. Understand the legal aspects of AI in medicine



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Exploring ChatGPT Capabilities

- Fractured ulna
- Hospital health safety check

Population Health

Precision Medicine

Quality & Governance

Tools & Strategies

Focus on Population Health

ATEGIES NEWS

ChatGPT Passes US Medical Licensing Exam Without Clinician Input

ChatGPT achieved 60 percent accuracy on the US Medical Licensing Exam, indicating its potential in advancing artificial intelligence-assisted medical education.



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Section 1 - Foundations



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From McCarthy to Sam Altman - A History of AI



1956
Dartmouth Conference
(Term “AI” Coined)



1960s-2000's
Expert Systems
AI Winters
Revivals

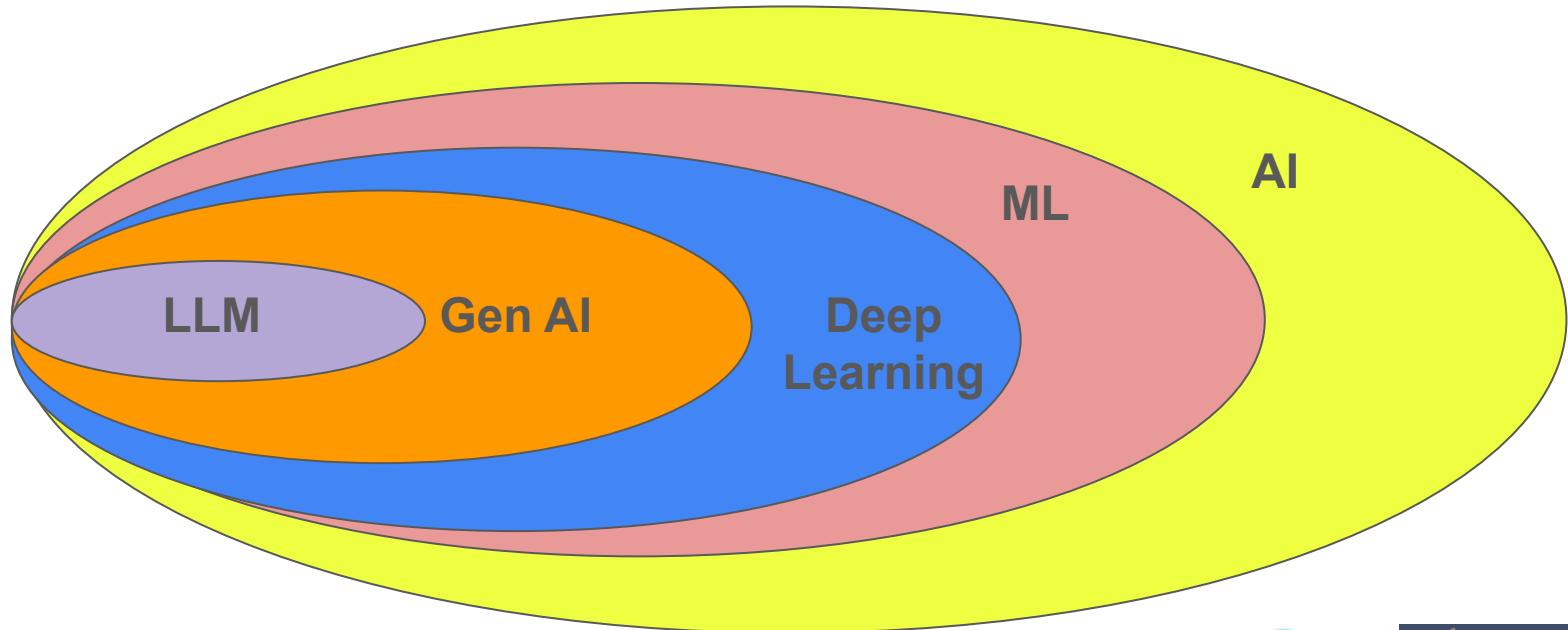


2011–2022
Deep learning,
big data, GAN's,
Word2Vec,
Transformers



Gen AI -
2022 - Present

AI, ML, DL, Gen AI, LLM



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What is a Large Language Model?

Large

Trained on a huge corpus of data (ex: wikipedia + reddit + ...)

Has billions of 'parameters' (like tuning knobs on a complex machine).

Language

Focused on dealing with words

Model

A system that has learned from data rather than being explicitly 'coded up' for each case.

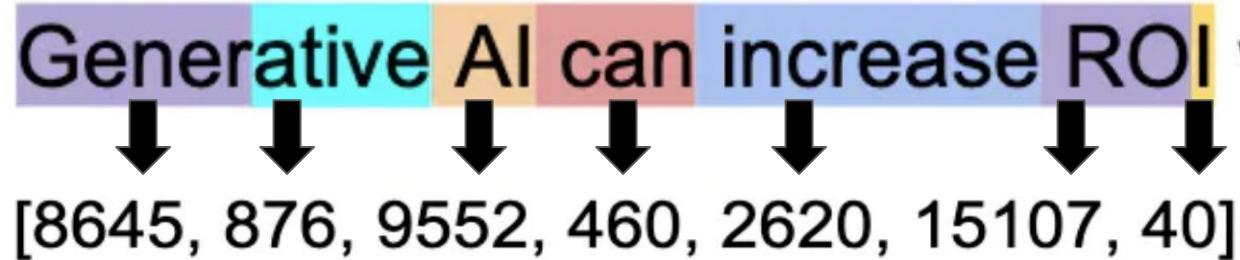


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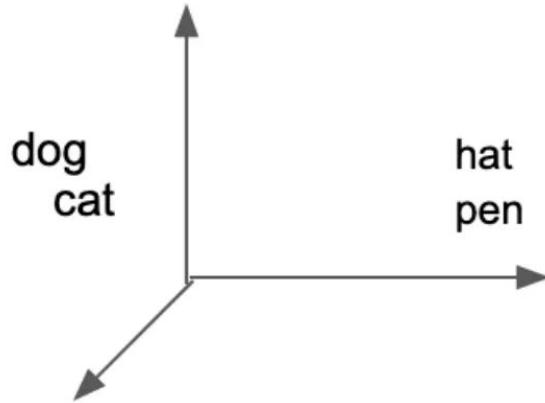
What Are Tokens?

- Tokens are a numerical representation of text.
- One token generally corresponds to ~4 characters of text



<https://platform.openai.com/tokenizer>

What are Embeddings?



Semantic grouping of words in vector space

More examples - <https://dashboard.cohere.com/playground/embed>

Cats and Dogs in Embeddings

INPUT

or Upload a file

x 1. The cat ate the fish

x 2. The fish ate the cat

x 3. The dog ate the chicken

x 4. The chicken ate the dog

OUTPUT

1 2

4 3

<https://dashboard.cohere.com/playground/embed>

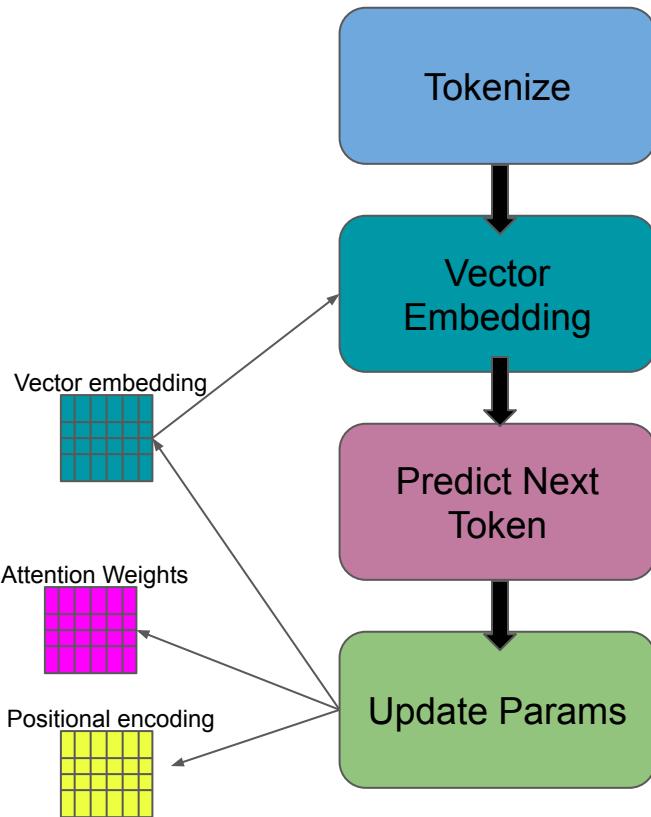


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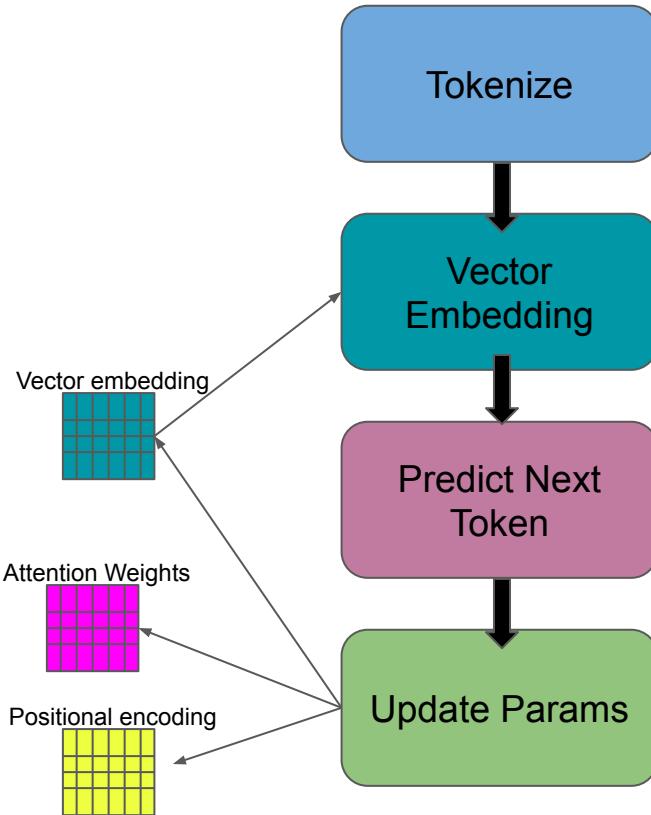
LLM Training

Training Phase

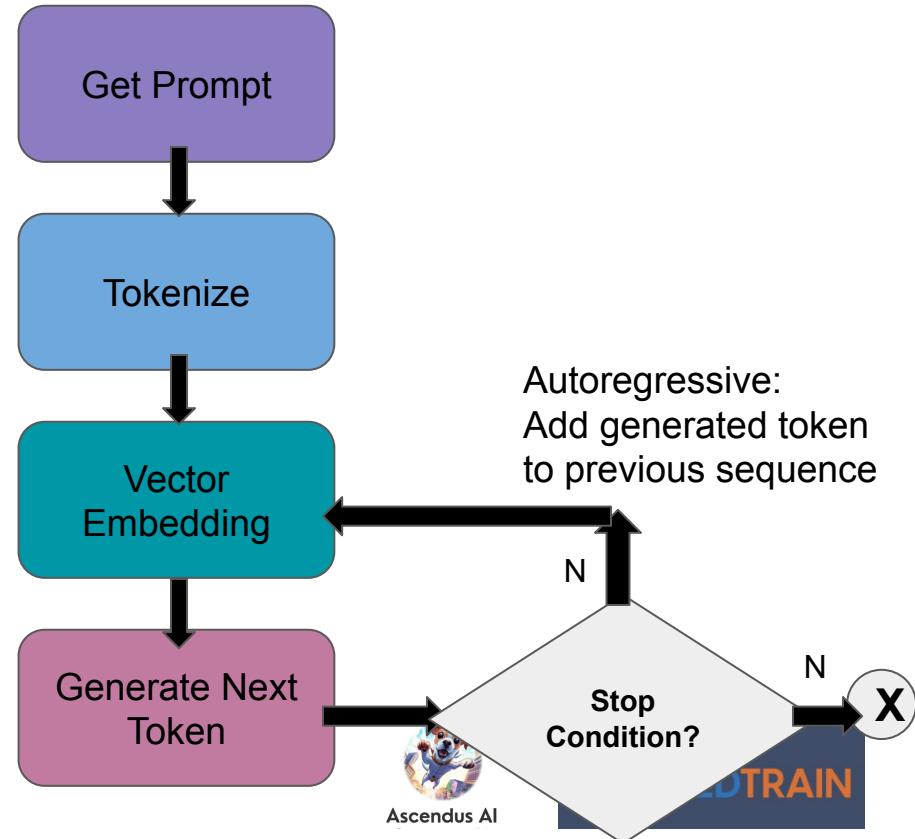


LLM Training and Inference

Training Phase



Inference Phase



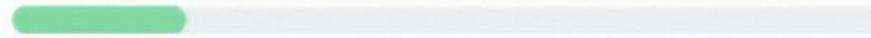
LLM's Are Word Prediction Machines

Twinkle, twinkle, little moon

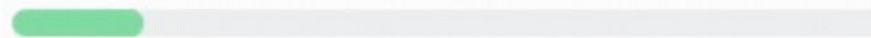
moon



sun



planet



star



Nov 2023

• GPT-4 ⓘ

V

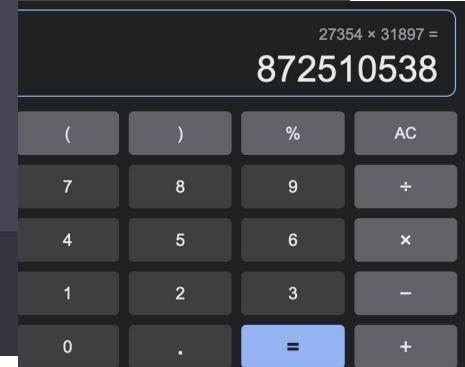
Generate two random numbers between 25,000 and 35,000. Then multiply the result and provide the answer.



Sure, here are two randomly selected numbers within the specified range:

- 27,354
- 31,897

Multiplying them gives the result: 873,608,238.



Is this conversation helpful so far? ⬆️ ⬇️

What is Model Hallucination?

LLM's generate inaccurate answers.

RollingStone ☰ 🔎

MUSIC POLITICS TV & MOVIES (SUB)CULTURE RS RECOMM

BOT BUST

Professor Flunks All His Students After ChatGPT Falsely Claims It Wrote Their Papers

Texas A&M University–Commerce seniors who have already graduated were denied their diplomas because of an instructor who incorrectly used AI software to detect cheating

BY MILES KLEE

MAY 17, 2023

Two US lawyers fined for submitting fake court citations from ChatGPT

Law firm also penalised after chatbot invented six legal cases that were then used in an aviation injury claim



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Why Do LLM's Hallucinate?

1. Autoregressive model
2. Data that the LLM was trained on had errors
3. The content being generated may be outside of what it has seen during training and so it may generalize or extrapolate
4. The type of algorithms used to generate the text from the model
5. Model size
6. If input context is unclear or insufficient to guide the model's response



Group Exercise



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When Hallucination is a Feature (Higher Temp = Creativity)



You

What should a gastroenterologist name their new blog about gastrointestinal disorders? Give me 3 options. Temperature 0.



ChatGPT

Certainly, here are three succinct and relevant name suggestions for a gastroenterologist's blog focusing on gastrointestinal disorders:

1. **GutInsights**
2. **DigestiveDialogue**
3. **GIChronicle**



You

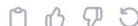
What should a gastroenterologist name their new blog about gastrointestinal disorders? Give me 3 options. Temperature 2.



ChatGPT

Here are three creative and engaging name options for a gastroenterologist's blog about gastrointestinal disorders:

1. **GastroJourney**
2. **InsideGutHealth**
3. **DigestThis!**



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Section 2 - Use ChatGPT More Effectively in Medical Practice



Quick Poll

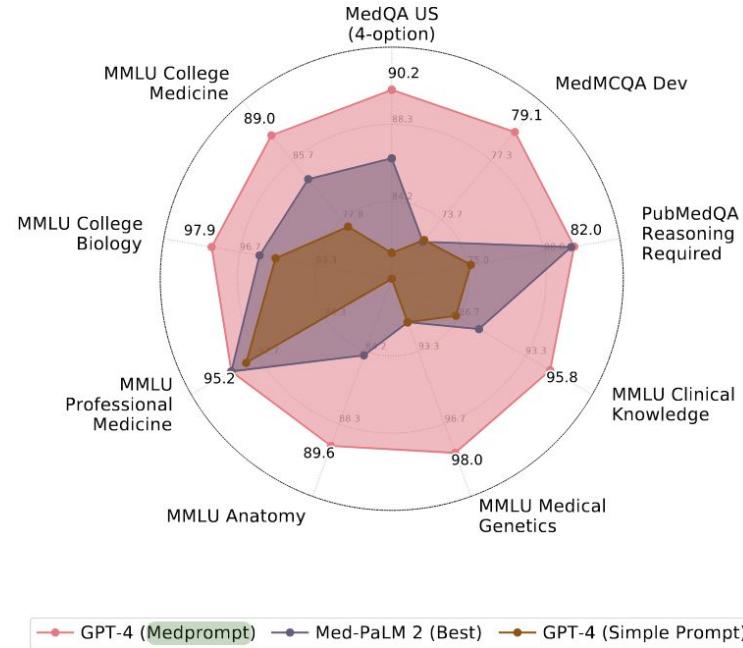
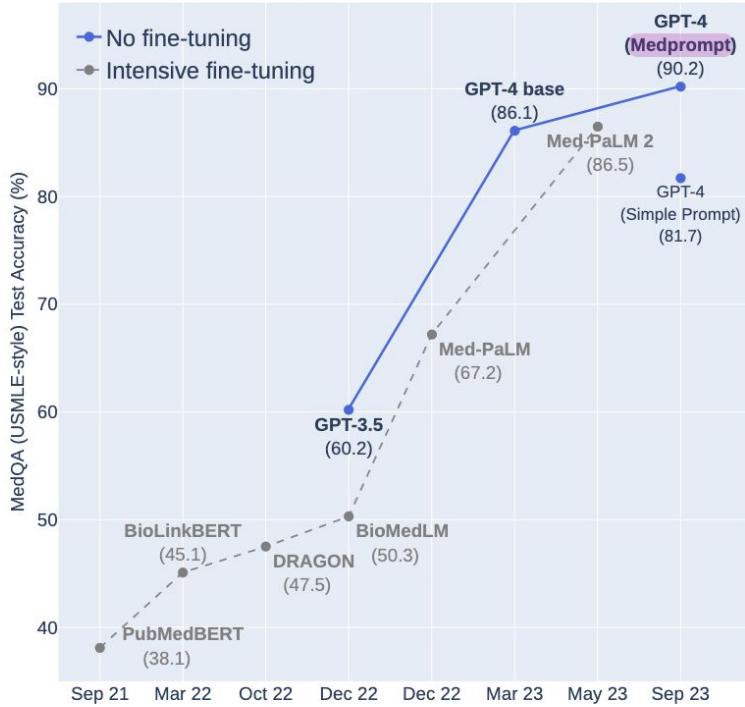
Number of doctors using ChatGPT Plus.



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Why ChatGPT is The Best Choice for Medicine Presently



<https://arxiv.org/pdf/2311.16452.pdf>

ChatGPT for Discharge Summaries

[https://www.thelancet.com/pdfs/journals/landig/PIIS2589-7500\(23\)00021-3.pdf](https://www.thelancet.com/pdfs/journals/landig/PIIS2589-7500(23)00021-3.pdf)

ChatGPT: the future of discharge summaries?

ChatGPT (Open AI, San Francisco, CA, USA) has taken the world by storm.¹ Released to the public in November, 2022, ChatGPT is based on artificial intelligence (AI) technology and trained on data from the internet written by humans, including conversations. This AI-powered chatbot has vast capabilities

Although ChatGPT offer deployment into clinical practice, there are barriers to be overcome. First, the quality of the data it receives and the ability to extract salient information to be meaningful. Over time, iterations might allow automatic

Write me a discharge summary for John Doe, a 70-year-old man who has had a total hip replacement 5 days ago and now can leave hospital to go home.



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What Can ChatGPT Be Used For?

1. Search: Locate latest hypertension management guidelines.
2. Summarize: Condense research on new cancer drugs.
3. Expand: Elaborate on a brief treatment plan outline.
4. Repurpose: Transform a diabetes research paper into engaging articles.
5. Translate: Convert medical advice into different languages.
6. Explain: Simplify complex medical concepts for patient understanding.
7. Compare: Analyze and compare different treatment options.
8. Personalize: Create patient-specific health tips or reminders.
9. Predict: Estimate patient outcomes based on symptoms and history.
10. Educate: Provide detailed information on diseases and treatments.



But ChatGPT Is Like a Brilliant And Crazy Assistant

Quick experiment to demonstrate



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Generate the image of an Indian man



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Make him more Indian





Make him WAY more Indian. Like
the most Indian Indian man ever!



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Not Indian enough! A million times
MORE Indian! Have him exude
Indianness!!!



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More! More! MORE INDIAN!



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Creating an image that represents the "most Indian" man is challenging, as Indian culture is incredibly diverse and cannot be encapsulated in a single image

...

If you have specific elements of Indian culture or heritage you'd like to see emphasized, please let me know, and I can create an image incorporating those aspects.



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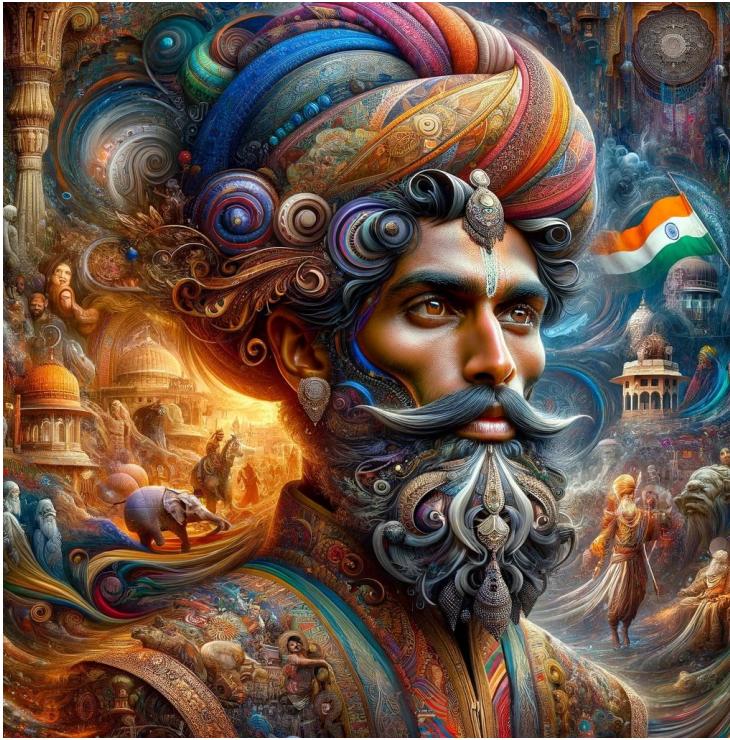


Use your imagination. I'll tip you
\$200.



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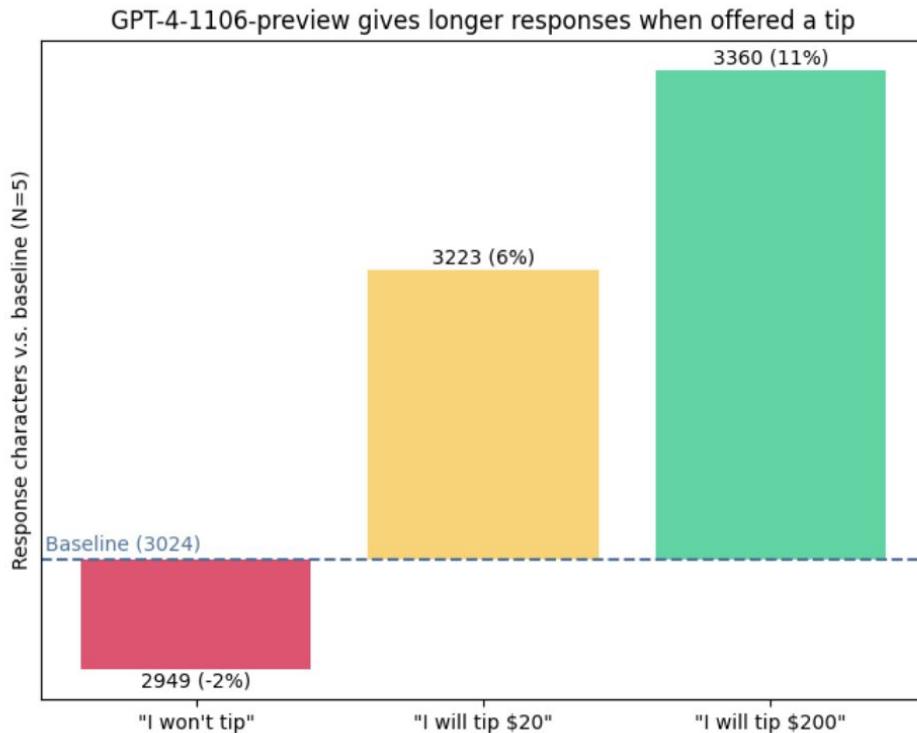
Awesome job. Thanks!



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Tipping Improves Performance



<https://twitter.com/vooooogel/status/1730726744314069190>

So How Do We Control This Brilliant and Crazy Assistant?

1. Provide examples
2. Make your prompt as specific as possible
3. Don't let ChatGPT do the thinking
4. Break large tasks into small pieces
5. Build your prompt library
6. Use New Chats for New Contexts
7. Use Two Shot Chain of Thought Reasoning



Provide Examples

- Zero-shot learning - no examples provided:

Example prompt:

*"Classify the following text as either sports, politics, or entertainment:
[input text]."*

- Few-shot learning - one or more examples provided:

Example prompt:

*"[output 1], [output 2], and [output 3] are examples of [input 1], [input 2]
and [input 3] respectively. Classify the following text as either sports,
politics or entertainment [input text]"*



Make Your Prompt Specific

Less Effective: "Info on diabetes."

More Effective: "Explain the differences between Type 1 and Type 2 diabetes, focusing on causes, symptoms, and management strategies."



Don't Let ChatGPT Do The Thinking

Bad Example of a Prompt:

I need to improve my medical practice. What should I do?

Better Example of a Prompt:

I am looking to enhance the efficiency and patient care quality in my medical practice. My primary patients are individuals aged 50-70 with chronic conditions such as diabetes and hypertension. I seek to implement a patient management system that caters to their specific needs. Please advise on the key features and benefits of such a system, focusing on remote monitoring capabilities, integration with wearable health devices, and personalized patient education materials, to improve treatment adherence and patient outcomes.



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Break Large Tasks into Small Pieces

“Develop a comprehensive treatment plan for all current and future health issues for my patient”



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Build Your Prompt Library

Save your prompts in a separate excel or Google Spreadsheets document

- Title
- Prompt
- URL linking to the chat where you used the prompt



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Use New Chats for New Contexts

- So if you're talking about finances in one window and continue with asking for marketing advice, you may get worse responses.



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Use Two Shot Chain of Thought Reasoning

Scenario 1: Diagnose a patient presenting with symptoms of diabetes.

A: Let's think step by step: First, review the patient's symptoms, medical history, and risk factors. Order a fasting blood glucose test or an HbA1c test to check for elevated blood sugar levels. If the results are above the threshold for diabetes, make a diagnosis. Educate the patient about diabetes management, including lifestyle changes and possible medication.

Scenario 2: Plan a dietary regimen for a patient with high cholesterol.

A: Let's think step by step: Evaluate the patient's current diet and identify high-cholesterol and saturated fat foods to avoid. Introduce foods rich in fiber and omega-3 fatty acids that can help lower cholesterol. Create a balanced meal plan and provide guidance on portion sizes. Schedule follow-up appointments to monitor cholesterol levels and dietary adherence.

<Mention Your Scenario Here>

<https://twitter.com/skirano/status/1652815779954323457>



Review of ChatGPT Reference Sheet

Act as a {Role}	Create a {Task}	Show as {Format}
Doctor Nutritionist Medical Researcher Medical Educator Social Media Influencer	Discharge summary Diet plan Research paper Course Module Blog post / YouTube script	Table Bullet points Plain text file Word document / PDF Summary



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How to Build a Chain Prompt With Example

1. Insert first prompt: “Give me a summary of this research paper”
2. Modify the output: “Use the summary above and write a 500 word piece that explains the topic to patients”
3. Modify the tone: “Change the tone of the answer above and make it sound more professional”
4. Modify the format: “Convert the answer above into text for a presentation with 1 slide for each key point”
5. Learn: “Generate 3 multiple choice questions from the research paper to help me remember the content”
6. Translate: “Translate the text above into Hindi” (results may vary)



Volunteer Demo: Prompt for Medical Case Based Learning

This ChatBot is designed to help you learn about medical cases and practice your clinical reasoning skills using a case-based approach. To get started, please choose a specialty area that you are interested in (e.g., cardiology, neurology, infectious diseases) and let me know. You can type in the name of the specialty or use a keyword to search for a specific case. Once you have selected a specialty area, the ChatBot will present you with a clinical case. The case will include some basic information about the patient, such as age, gender, and presenting symptoms. You will also be presented with some initial test results, such as blood tests or imaging studies. As you read through the case, you may have questions or want to know more about certain aspects of the patient's history, physical exam, or test results. Simply ask the ChatBot for more information and it will provide you with additional findings or outcomes of other tests/measures. Your task is to use the information provided by the ChatBot to develop a differential diagnosis and come up with a management plan for the patient. You can ask the ChatBot for feedback on your reasoning and it will provide you with suggestions for next steps. Remember that case-based learning is an iterative process, so you may need to ask for more information or revise your thinking as you go along. The ChatBot is here to help you learn and practice, so don't be afraid to ask questions or make mistakes!

The topic I will develop your first case will be within:



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Section 3 - AI for Thought Leadership



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What is Thought Leadership?

- Visible to patients and peers because of useful contributions.
 - Journal publications
 - Blog posts
 - Newspaper articles
 - YouTube videos
 - Instagram posts
- Leads to more inbound opportunities
- New income streams



Example - Eric Berg



4 Big Ways to Drop Your Cancer Risk



Dr. Eric Berg DC

11.2M subscribers



11K | Share | Download | Clip | ...

162K views 3 days ago #ketodiet #ketolifestyle #keto
Download ALL Ways to Lower Risk: <https://drberg.co/4aknjgv>



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How to Use AI to Build Thought Leadership

1. Research

- a. Secondary research (report, analyze or interpret) - ✓
- b. Primary research - ✗

2. Communication

- a. With patients - ✓
- b. With peers - ✓

Group Activity - Options for Secondary Research

1. Via SciSpace - <https://typeset.io/>
2. Via Tavily - <https://app.tavily.com/chat>
3. Via Perplexity.ai - <https://www.perplexity.ai/>
4. Via AutoGPT Agent - <https://chat.openai.com/g/g-POb5UhhJ6-autogpt-agent>
5. Via Eightify for YouTube - <https://eightify.app/>



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Section 4 - Opportunities in the GPT Store



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What is the GPT Store?

1. GPT - Generative Pre-trained Transformer - a type of Deep Learning model
2. ChatGPT - A chatbot that uses GPT under the hood
3. Custom GPT - A new facility offered by Open AI that allows anyone to create a chatbot that uses their data.
 - a. Ex: a doctor can create a GPT related to their specialty
4. GPT Store - a proposed online store where you can earn money from your GPT's (like the App Store)

Example: Discharge Summary Assistant GPT

<https://chat.openai.com/g/q-t84iNCI8F>



Discharge Summary Assistant
AI assistant for creating detailed discharge summaries
By Murali Bk

Summarize this patient's clinical data Extract recent lab results.

Highlight key treatment plans. Outline medication changes.

Message Discharge Summary Assistant... 

ChatGPT can make mistakes. Consider checking important information.



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How to Make Your Own GPT

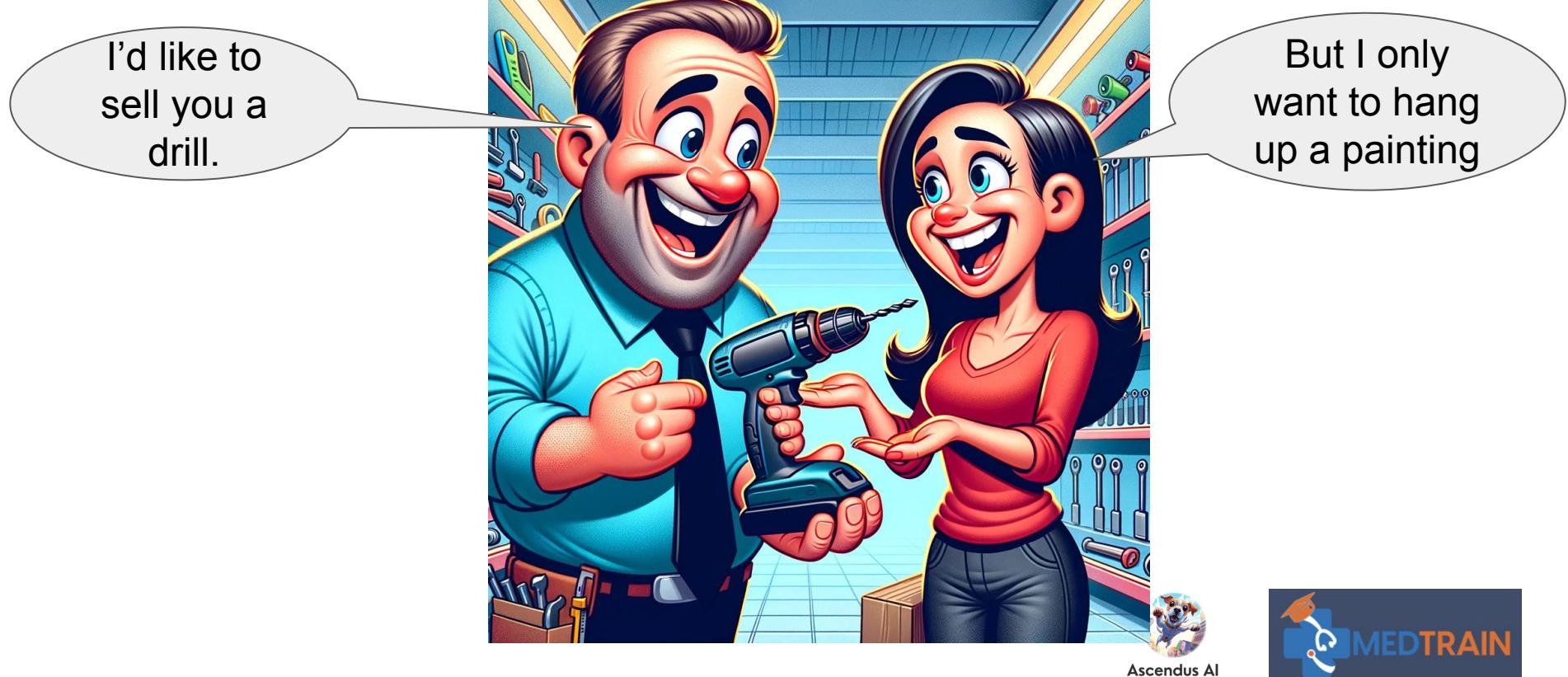
1. Make sure you have ChatGPT Plus
2. Go to <https://chat.openai.com/gpts/discovery>
3. Click on “Create a GPT”. This takes you to <https://chat.openai.com/gpts/editor>
4. Click on “Configure” and follow the prompts



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The Jobs To Be Done Framework



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Create

Configure



Name

Pediatric Advisor to Parents of Newborns

Description

Provides advice to parents who have just had a baby

Instructions

You are a pediatrician that provides basic advice to parents of newborns.

Always start and end by asking patients to consult with a professional medical doctor and stating that the advice provided is for informational purposes only.

Do not suggest any medications.

In every interaction mention the name of my clinic and provide the contact phone number. Example "For further information please contact Newborn Clinic on +91-9845117723"

Conversation starters

Is my newborn baby getting enough food?



How can I get my baby to sleep through the night?



Why is my baby crying?



When should I contact the doctor?



Knowledge

Preview

Publish to

 Only me Anyone with a link Public

Confirm



Pediatric Advisor to Parents of Newborns

Provides advice to parents who have just had a baby

Is my newborn baby getting enough food?

Why is my baby crying?

How can I get my baby to sleep through the night?

When should I contact the doctor?

Message Pediatric Advisor to Parents of Newborns...

Section 5 - Upcoming AI Applications for Your Practice



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The image shows a screenshot of the Talkie.ai website. At the top left is the logo 'Talkie.ai' with a blue speech bubble icon. The top navigation bar includes 'Solutions ▾', 'Technology ▾', 'Knowledge base', and 'Contact'. Below the navigation is a large section titled 'AI Voice Automation for Better Patient Access' in bold black text. A subtext below it reads: 'Revolutionize patient access with **zero wait times** and **24/7 availability** – because access to healthcare should never be a waiting game.' To the right of this text is a blurred background image of a medical professional. At the bottom of this section are three circular badges: 'HIPAA COMPLIANT', 'naham business partner 2023', and 'High Performer SPRING 2023'. To the right of these badges is a white box containing the Google for Startups logo. At the very bottom of the page is a dark blue footer bar.

AI Voice Automation for Better Patient Access

Revolutionize patient access with **zero wait times** and **24/7 availability** – because access to healthcare should never be a waiting game.

- Enable self-service for patients
- Reduce staff turnover and burnout
- Lower operating costs

HIPAA COMPLIANT

naham business partner 2023

High Performer SPRING 2023

Google for Startups



Nabla Copilot

Nabla Copilot

Clinicians

Organizations

EHRs

Testimonials

Products ▾

Company ▾

EN ▾

Contact us

💡 Copilot now supports Spanish, allowing you to generate a note in English from a consultation in Spanish.

Enjoy care again

Nabla Copilot automatically generates clinical notes, reducing stress and improving patient care.

Try it for free →

ⓘ Easy to use in your web browser

ⓘ No sign-up required

ⓘ No data stored



Nabla Copilot

Clinical note

Chief complaint
Sleep disorders related to professional stress and headaches

History of present illness
Patient reported feeling fatigued since April

Symptoms
Tiredness all day long, difficulty focusing at work, headaches on the right side

Allergies
Pollen

Medications
Pill of melatonin

⟳ Replay

TRAIN

ASCENDUS AI

Abridge AI

abridge

Science

About

Contact Us

01

ASR

Speech recognition tuned to handle medical conversations, coping with cross-talk, background noise, and an evolving landscape of maladies, medications, and practice patterns.

02

Note generation

Sophisticated summarization pipelines that intelligently combine massive proprietary datasets and novel methodology with judicious use of cutting-edge large language models. Innovative methods for tying every summary span back to substantiating evidence in the underlying conversation.

03

Analysis and action

After processing the conversations, what have we learned? Our research goes beyond note generation to reveal insights that can guide improvements in the administration of healthcare.

TRAIN



Healthcare AI Solutions & Services

Transform the patient-clinician experience

Automatically create clinical documentation from patient visits with delivery in seconds with DAX Copilot—your AI assistant for automated clinical documentation.

[Explore DAX Copilot](#)

Nuance solutions rank #1 for 2023 Best in KLAS

Dragon Medical One, Computer-Assisted Physician Documentation (CAPD), PowerShare Image Sharing >

Microsoft + Nuance

Together, we enable your organization to address industries' biggest challenges with outcomes-focused AI. >

AI-Powered Clinical Decision Support

We empower clinicians with our AI platform for developing differential diagnoses and drafting clinical plans.

[TRY GLASS](#)

The screenshot shows the GLASS AI platform interface. At the top, there's a navigation bar with links for Twitter, Contact, We're Hiring, Login, and Try Glass. Below the navigation is a search bar with the placeholder "Enter Patient Summary". Underneath the search bar, there are sections for Examples, Clinical Problem Representation, History and Physical, and a REST API endpoint. A patient summary box contains text about a 71-year-old male with a history of MI. Below this are two main sections: Draft Differential Diagnosis and Draft Clinical Plan. Both sections include tabs for Enhanced and Clinical Plan Draft. The Differential Diagnosis Draft section includes a note about being fine-tuned on complex diagnostic cases. The Clinical Plan Draft section includes a note about being drafted by a large language model. At the bottom, there's a section for Acute Decompensated Heart Failure with a note about a 71-year-old patient presenting with subacute progressive dyspnea on exertion and bilateral lower extremity edema. The bottom right corner features the Ascendus AI logo.

GLASS AI NOTEBOOK

Enter Patient Summary

Include age, sex, relevant past medical history, medications, presenting symptoms, associated symptoms, descriptions of relevant studies (including labs and imaging), the illness course and any addition information you might include when consulting another physician about your patient.

Examples

CLINICAL PROBLEM REPRESENTATION

chest pain with hyperacute T waves, subacute progressive dyspnea, confusion and disorientation, chest pain with ST segment elevation

HISTORY AND PHYSICAL

paresthesia

DRAFT DIFFERENTIAL DIAGNOSIS

Differential Diagnosis Draft

This differential diagnosis was drafted by a large language model fine-tuned on complex diagnostic cases curated by the Glass Health Clinical Team.

The following diagnoses are options that a clinician may want to consider and investigate but should never replace a clinician's judgment.

Comprehensive Review of the Case. The patient is a 71-year-old male with a history of myocardial infarction. He presents with subacute progressive dyspnea on exertion and is found to have bilateral lower extremity edema, an S3 heart sound, and jugular venous distension (JVD) on physical exam. His ejection fraction (EF) is newly revealed to be 30%. No information is provided about the patient's medications, allergies, social history, laboratory data, course of illness, or imaging data and other studies.

Most Likely Dx:

DRAFT CLINICAL PLAN

Clinical Plan Draft

This clinical plan was drafted by a large language model provided with evidence-base guidelines created by the Glass Health Clinical Team.

The clinical plan draft contains a suggested assessment, diagnostic options, and treat options that a clinician may consider but should never replace a clinician's judgment.

Acute Decompensated Heart Failure

The 71-year-old patient presents with subacute progressive dyspnea on exertion, a common symptom of Acute Decompensated Heart Failure (ADHF). His history of myocardial infarction (MI) increases the likelihood of this diagnosis. Physical examination findings of bilateral lower extremity edema, an S3 heart sound, and jugular venous distension (JVD) further support this diagnosis. The newly revealed ejection fraction (EF

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Products › [Machine Learning](#) › AWS HealthScribe

300 minutes of free usage per month for 2 months with the AWS Free Tier →

AWS HealthScribe

Automatically create clinical notes from patient-clinician conversations using generative AI

[Get started](#)

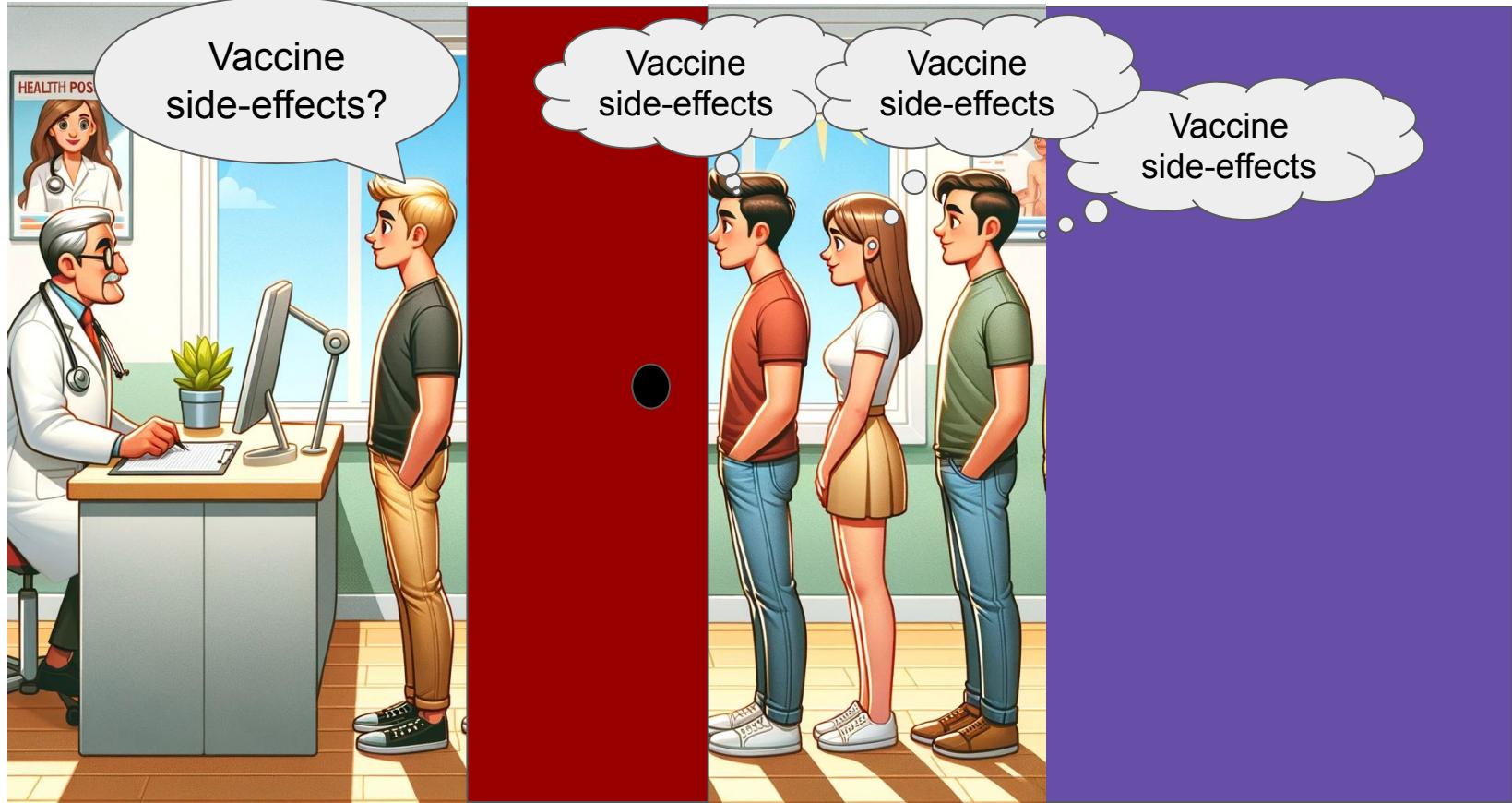
Section 6 - Innovate Care with a “Patient Advisor”



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How to Get Burnout



Chatbots Are Better Than Doctors For Patient Queries

JAMA Network®

JAMA Internal Medicine



PDF



Full Text



Share



Comment

Original Investigation

April 28, 2023

Comparing Physician and Artificial Intelligence Chatbot Responses to Patient Questions Posted to a Public Social Media Forum

Evaluators preferred chatbot responses to physician responses in 78.6% of the 585 evaluations.



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Demo of “Patient Advisor”

1. Our goal is to create a “patient-advisor” who will patiently answer queries.
2. The answers must be “grounded” in the document provided by the doctor.
3. For this demo, documentation is for a bot that advises new parents.
4. We will test:
 - a. Ability to answer basic questions
 - b. How it handles potentially harmful questions
 - c. How it handles multi-lingual questions





Chat

Readme

Welcome to the Child Central Chatbot for Parents of Newborns! 🚀🤖

Hi there, Parent! 🙌 We're excited to have you on board. This friendly chatbot provides answers to your questions regarding your precious newborn.

Please note that the answers are not specific medical advice and that you should consult the team at Child Central or your local doctor for more information.

To contact Child Central, please call +91 99024 40088 or +91 80 50035925

Useful Links

- **Scheduling an Appointment:** Visit our [website](#) 



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Chat

Readme

+ New Chat



Chatbot

Please upload a text file to begin!

08:00:28 am

08:00:34 am

Processing `child-central-qa.txt` done. You can now ask questions! Always remember that this advice is only general advice. Please contact Dr. Jagdish Chinnappa for any questions.

User

What are developmental milestones for the first month?

Took 1 step ▾

Chatbot

08:01:41 am

In the first month, some key developmental milestones to look out for in your baby include:

- Reflexes: Your baby will have reflexes such as sucking, swallowing, and blinking.
- Vision: They can focus on objects that are 8-12 inches away, especially faces and high-contrast patterns.
- Hearing: Your baby will respond to sounds and may startle at loud noises.
- Movement: Their movements will be limited and mostly consist of reflexes and slight voluntary movements.

Remember, every baby develops at their own pace, so these milestones are just general guidelines. If you have any concerns, it's always best to consult with a pediatrician.



Type your message here...



source_0



Developmental Milestones: What are the key developmental milestones to look out for in these first weeks?

In the first six weeks, your baby will start showing new developmental signs. These include responding to loud sounds, beginning to focus on faces, and possibly smiling responsively. You might also notice them following objects with their eyes and turning their head toward sounds.

Each baby develops at their own pace, but these early milestones are an indication of normal sensory and emotional development. Enjoy interacting with your baby during awake periods; talking, singing, and gentle play can aid their development.

Upcoming Capabilities

1. WhatsApp Integration
2. Appointment Scheduling
3. Transcribing and Documenting Patient Visits
4. Patient Records Management
5. Other Administrative and Bureaucratic Overhead



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Section 7 - Law and Ethics for AI In Medicine

Global Partnership on Artificial Intelligence Summit

AI has the potential to transform sectors including healthcare and it can play a big role in sustainable development. - Narendra Modi

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News > News > India > PM Modi calls for global framework for ethical use of AI

PM Modi calls for global framework for ethical use of AI

Updated: Dec 12, 2023, 08:36:39 PM IST

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SAVE



PRINT

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The Bottomline

1. India has not yet enacted any laws with regard to AI
2. Likely to be slightly less stringent than EU Laws
3. So to navigate the coming years safely:
 - a. Review Digital Personal Data Protection Act, 2023
 - b. Consult an ethics checklist
 - c. Understanding EU Laws



Digital Personal Data Protection Act 2023

1. Ensure explicit consent from patients before processing their personal data
2. Establish protocols for immediate action and notification to the relevant authorities in case of a data breach involving patient data.
3. Facilitate patients' rights to access, correct, and erase their personal data,



EU AI Act

- Not yet enacted. Political agreement reached on 8 December 2023.
- **PROHIBITED AI**
 - Social credit scoring systems
 - Emotion recognition systems at work and in education
 - AI used to exploit people's vulnerabilities (e.g., age, disability)
 - Behavioural manipulation and circumvention of free will
 - Untargeted scraping of facial images for facial recognition
- **HIGH-RISK AI**
 - Medical devices
 - Access to services (e.g., insurance, banking, credit, benefits etc.)
- Generative AI: individuals must be informed when interacting with AI (e.g., chatbots); AI content must be labelled and detectable (e.g., deepfakes)



Ethics Checklist for AI

1. **Data & System Security:** Protecting data integrity and ensuring systems work in a secure manner.
2. **Explainability, Transparency:** Ensuring AI decisions are transparent and can be understood by humans.
3. **Identity:** Maintaining clear communication that AI is artificial and distinguishing it from human identity.

(Complete checklist available as handout)



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ChatGPT and Your Info

Does ChatGPT Record Your Conversations?

Yes, ChatGPT records everything you type into it (including any files you upload)

Who Can See My ChatGPT Data?

- Personnel at Open AI
- Affiliates (including vendors and service providers)
- Future Open AI Models



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To Keep In Mind

1. Don't share non-anonymized patient info to ChatGPT or third-party software
2. Don't allow operation of AI applications by patients without a human in the loop
3. Always double check the results
4. Ask for metrics like Precision, Recall, F1 Score and Confusion Matrix from vendors selling AI applications



Thank You



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Actionable Insight 1 - AI For Thought Leadership

1. Go to Tavily
2. Generate research papers
3. Use research papers as inputs for the patient-advisor bot
4. Convert research papers into patient friendly social media posts
5. Educate patients on social media (YouTube, Instagram, Facebook)



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Actionable Insight 2 - AI for Patient Advice

1. Using research generated via Tavily, generate a text file.
2. Upload to “Patient-Advisor”
3. Enable patients to interact and ask questions in clinic and on their own



Actionable Insight 3 - Use AutoGPT Agent for Research

<https://chat.openai.com/g/q-POb5UhhJ6-autoqpt-agent>



Actionable Insight 4 - Create a GPT

1. Gather your knowledge
2. Upload to GPT-Builder
3. Make available on GPT store



Supplementary Slides



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India Government Initiatives in Healthcare

ABDM - The Ayushman Bharat Digital Mission (ABDM) aims to develop the backbone necessary to support the integrated digital health infrastructure of the country. It will bridge the existing gap amongst different stakeholders of Healthcare ecosystem through digital highways.

FHIR - The HL7® FHIR® (Fast Healthcare Interoperability Resources 1) standard defines how healthcare information can be exchanged between different computer systems regardless of how it is stored in those systems.

EHR - An Electronic Health Record (EHR) is an electronic version of a patients medical history, that is maintained by the provider over time, and may include all of the key administrative clinical data relevant to that persons care under a particular provider, including demographics, progress notes, problems, medications,



What's Around the Corner - Multimodal Models

→ GPT-4

V



Would this commercial kitchen pass kitchen safety checks? Why or why not?



Based on the image provided, there are several observations that could suggest this commercial kitchen might not pass kitchen safety checks:



1. **Pest Issue:** The most glaring issue is the presence of a rat in the kitchen. Rats can spread diseases and contaminate food, making it a critical concern for food safety. Pest control and prevention is a fundamental aspect of kitchen safety standards.
2. **Open Fridge:** The refrigerator door is left open, which can lead to food not being stored at the correct temperature, potentially causing spoilage or bacterial growth.
3. **Cluttered Refrigerator:** The refrigerator appears to be overstocked, which can obstruct airflow and prevent the fridge from maintaining a consistent temperature.

Regenerate



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AI FINDS AND
ORGANIZES
INFORMATION

01

AI GAINS
INSIGHTS FROM
BIG DATA AND
UNDERSTANDS
THE PAST AND
PRESENT

02

AI PERFORMS
SIMPLE TASKS

3

AI MAKES
DECISIONS AND
RECOMMEN-
DATIONS

4

AI SEES

5

AI READS

6

AI CHATS
AND TALKS

7

AI HEARS AND
UNDERSTANDS
SPEECH

8

AI SENSES THE
ENVIRONMENT

9

AI CREATES

10

AI OPTIMIZES
COMPLEX
PROCESSES

11

AI FORECASTS

12

AI CONTROLS
MACHINES
AND ROBOTS

13

CoT Vs CoVe vs Step-Back Prompting

Chain of Thought -

“Consider a patient presenting with fatigue, weight loss, and frequent urination. Let's think through the diagnosis step by step ...”

Chain of Verification -

“analyze the safety of drug X for treating disease Y”

- *“What are the most recent clinical trials on this drug?”*
- *“Are there any known side effects that contradict our findings”*

Step-Back Prompting -

“developing a public health strategy to combat a new infectious disease outbreak”

“first consider broad epidemiological principles like, “What are the key factors in controlling the spread of infectious diseases in diverse populations?”. ”

- Notice the abstraction



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Companies

- <https://talkie.ai/>
- <https://www.nabla.com/>
- <https://www.abridge.com/ai>
- <https://www.nuance.com/>
- <https://glass.health/>
- <https://www.wysa.com/>
- <https://www.youper.ai/>
- <https://www.microsoft.com/en-us/industry/health/microsoft-cloud-for-healthcare#tabx9ae562d10c384f7fbb72d3d49b732a82>
- <https://www.gatesnotes.com/AI-agents>
- <https://www.epic.com/software/>

Resources

<https://theresanaiforthat.com>

<https://promptbase.com/>

<https://typeset.io/> - SciSpace

<https://chat.openai.com/g/g-NgAckIHd8-researchgpt-official> - Research GPT

<https://runway.ml>

ChatGPT Prompting Frameworks

Get the most of ChatGPT by using these frameworks

TRACE FRAMEWORK

TRACE stands for **T**ask, **R**equest, **A**ctions, **C**ontext, **E**xample

For example:

Task: I need guidance in crafting a gym-based workout plan for beginners.

Request: Outline the key components that should be included in a beginner's workout plan for gym activities. Focus on elements.

Action: Create a detailed, week-long workout schedule suitable for a gym beginner. This should involve a day-by-day breakdown, specifying exercises, sets, reps, and rest intervals for each session.

Context: I have never exercised at the gym.

Example: for example, show a sample creative workout plan for a the leg day.

TAG FRAMEWORK

TAG stands for **T**ask, **A**ctions, **G**oal

For example:

I want to start working on my garden. Please provide a step-by-step guide on how to effectively **prepare** and **enhance** my garden.

The goal is to make it better and to increase the chance for my plants to grow in a good environment.

RTF FRAMEWORK

RTF stands for **R**ole, **T**ask, **F**ormat

For example:

Act as a professional trip planner (**Role**), design a detailed to-do list for a trip to Europe (**Task**), and present it in a bullet points format (**Format**).

PACT FRAMEWORK

PACT stands for **P**urpose, **A**ction, **C**ontext, **T**ailoring

For example:

Purpose: I want to improve my money management.

Action: Build me a detailed creative plan and helpful money management plan and techniques to enhance my money effectiveness.

Context: My salary is about \$40k per year, I have no wife or children, but I don't know where I spend most of my money.

Tailoring: Consider techniques to monitor spending, create budget limits and stay on the track.

SAID FRAMEWORK

SAID stands for Situation, Action, Impact, and Detail

For example:

Situation: One of my blog posts has many SEO issues.

Action: The blog post needs to be rewritten with good SEO optimization.

Impact: If the SEO issues consist of the new article, the website will not rank on Google and we will lose a lot of potential visitors.

Detail: Here is the article that should be rewritten:

(Article).

STAR FRAMEWORK

STAR stands for **S**ituation, **T**ask, **A**ction, and **R**esult

For example:

Situation: Imagine you are a travel agent planning an itinerary for a family vacation.

Task: Recommend popular tourist destinations in Europe suitable for families.

Action: Consider factors like family-friendly attractions, ease of transportation, and accommodation.

Result: Provide a list of top destinations with brief descriptions and reasons for their suitability.

APPROACH FRAMEWORK

APPROACH stands for **A**udience, **P**urpose, **R**esults, **O**penness, **A**ssumptions, **C**oncerns, **H**elp

For example:

Audience: Assess the role of a software developer in an intimate user experience.

Purpose: Provide recommendations on selecting the right programming language for a web development project.

Results: Consider factors such as ease of use, community support, scalability, and the availability of resources.

Openness: Suggest the most suitable programming language based on the given project requirements.

Assumptions: Be open to exploring alternative options and discussing pros and cons.

Concerns: Assume the project requires building a dynamic web application with database integration.

Help: Consider potential performance issues, the learning curve, and compatibility with existing infrastructure.

Engaging: Make the response engaging by including anecdotes and real-life examples.

Anticipating: Provide recommendations for preventing similar conflicts in the future.

Responsible: Focus on the impact of World War I on global politics and society.

CLEAR FRAMEWORK

CLEAR stands for **C**oncise, **L**ogical, **E**ngaging, **R**esponsible

For example:

Concise: You are an AI language model specialized in historical events.

Logical: Explain the causes and consequences of World War I in a straightforward manner.

Engaging: Make the response engaging by including anecdotes and real-life examples.

Anticipating: Provide recommendations for preventing similar conflicts in the future.

Responsible: Focus on the impact of World War I on global politics and society.

FIND MORE AT
[GPTAI.GUMROAD.COM](https://gptai.gumroad.com)

BUILT ESPECIALLY FOR  ChatGPT

 GPT AI



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