

Smarter Healing – How Al is Reshaping Health Care

And practical tips on how to use it.

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Disclosures

- No disclosures to note.
- Presentation was created in collaboration with
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What is Artificial Intelligence?

• Artificial intelligence (AI) is the simulation of human intelligence processes by machines, such as learning, reasoning, and self-correction. AI systems can analyze data, identify patterns, and make decisions with increasing autonomy.



What does that mean?

- Machine Learning
 - Algorithms and statistical models to perform tasks
- Neural Networks
 - A serious of algorithms that mimic thinking
- Deep Learning
 - Using layers of Neural Networks in large data sets
- Natural Language Processer
 - Enable computers to understand, interpret and generate language

- Computer Vision
 - Ability to interpret and make decisions based on visual input
- Robotics
 - Field assimilating AI to carry out actions
- Expert Systems
 - Al acting as an expert
- Knowledge Representation
 - Al learning from itself

Language and image recognition capabilities of AI systems have improved rapidly





Data source: Kielo et al. (2021) - Dynahonch: Rethinking Sondmarking in NLP

DurWorldin Data-org - Research and data to make progress against the world's largest problems.

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Types of AI in Healthcare

- **1. Generative AI** AI models that can create new content such as text, images, or audio by learning from existing data Used for automating content creation and personalization in healthcare.
- 2. Machine Learning Algorithms that learn from data to make predictions or decisions without being explicitly programmed.

 Applied in healthcare for disease diagnosis, treatment optimization, and patient risk assessment.
- 3. Natural Language Processing AI that can understand, interpret, and generate human language. Enables chatbots, medical language processing, and structured data extraction from clinical notes.
- 4. Agentics refers to a platform that enables users to create and interact with autonomous agents using neural interface technology.

Al's Benefits in Healthcare

- Automated & Assisted Diagnosis and Treatment
- Real-time Patient Prioritization and Triage
- Pregnancy Management
- Health Assistants and Personal Trainers

- Data Mining and Analytic
- Drug Discovery
- Drug Design
- Pandemic Detection
- Vaccine Development

a tient Care **APPLICATIONS** P Research and **HEALTHCARE** Development.

- Error Free Diagnostic results
- Intelligent Symptom Analysis
- Predictive and Early diagnostic!
- Radiology Assistant
- Diagnosis via Medical Imaging

- Surgical Robots
- Personalized medications
 & care
- Clinical Trials
- Alternative Diagnosis Prescription auditing

Nonclinical Applications



Concerns Around AI in Healthcare

1 Bias and Fairness

Al algorithms can perpetuate or amplify existing biases in healthcare, potentially leading to disparities in access and treatment. **2** Privacy and Data Security

The vast amounts of patient data required for AI systems raise significant concerns about data privacy and security, requiring robust safeguards.

Relationship with Patients, Accountability, and Trust

Healthcare professionals and patients may struggle to understand and trust the "black box" nature of AI decision-making, highlighting the need for transparency and accountability.

Guiding Principles Around Use of Al

Patient at the Center

How will the technology bring us closer to our patients and allow us more focused time on patient care.

Promote Transparency

Clear communication strategies that showcase the responsible and ethical use of AI, building trust with the community.

Educate patients and the public about how AI is being used in healthcare, emphasizing the benefits while addressing concerns around bias, privacy, and accountability.

Human in the Loop

Partner the AI with our team members:

- Understand the benefits
- > Tune the tools for accuracy and improved quality
- Monitor responsible use

Own the Output

Have ethical ownership of the output of Al. Considerations of plagiarism and reference expertise should always be considered.

Uses of AI in Healthcare



Electronic Health Record Houses and Analyzes Data



Personalized Medicine

Genetic analysis and treatment planning
Comparisons with other patients



AI Assisted Surgery

Time stamping
Deviation alerts
Instrument/Supply count





Virtual Health Assistants

Appointment management
Prescription Refills
Transitions of Care



Predictive Analytics

Predict sepsis, admissions, hospice, and even mortality



Clinical Decision Support

Amalgamation of data Incidental Findings



Remote Patient Monitoring

Pressure Ulcers, Fall risks, Vitals



Al Analysis of Pathology

Looking at pixels



Healthcare Operations Optimization

Predict patient flow, resource needs, supplies,



Mental Health Applications

Al powered assessments and therapy??



Drug Discovery

Target ID, Molecular screening, drug design, clinical trials



Epidemiologic Surveillance

Process data for public health records, social media, and other sources to identify and predict public health



Genomics

Read human genome and compare to mutations



Biometrics

Using human observations to predict disease

Use Cases of Al In Healthcare



Ambient Documentation

Generative AI note capture from ambient listening. Creates a providers note allowing providers more time with patients.

West is leading the industry with partnership of Microsoft Nuance.

Generative Patient Messages

Suggested patient message creation in response to increase interaction and contact with patients through patient portal.

Computer Assisted Coding

Revenue Cycle focused functionality to provide insights and recommendation to complex coding requirements

Device Management Al

This software will be used for MRI Scans for post processing of the images. The AI will have the ability to completed the 3D rendering and post processing, in half of the time it takes a technologist to complete manually. to complex coding requirements

Radiologist Virtual Assistant

Al that will be used by Radiologists to help assist in their day-to-day activities, increasing their proficiency throughout the day. The software uses Al to learn the habits of the provider and predicts their "next move."

Use of AI Improved Diagnostics



Mammography

Artificial intelligence that uses machine learning with AI to identify possible breast cancer and identify it for the Mammographer. Studies show this technology has been able to identify breast cancer 3-5 years before a radiologist early. It has allowed our providers to get care to our patients sooner and increased the rate of remission.



Stroke Detection

This mobile app is used by our stroke providers to assist with immediate intervention. The Software uses AI to identify potential bleeds on a patient's brain scan, so the Neurointerventional can quickly look at the area identified by AI to decide if an intervention is needed. Since implementing this software, our providers have been able to shorten their decision time, making the needed intervention started on the patient in less time..

Agentics: The next Frontier



Automated Call Center

Generative AI conversation automation for scheduling, patient questions, future Prescription Refills and Care Gaps. Operating 24/7. Allows our PSRs to spend more time with patient needing added attention



Conversational Support

Generative Conversational AI to support our patient portal help line. Since go-live, technology has a capture rate of 83% of monthly help calls, allowing our HITS team to focus on optimizations and innovations of patient portal.

Use of AI Optimized Workflows and the Smart Patient Room





Turning Protocols:

Nurses must turn patients every 2

Algorithms can send reminders if

turns are not performed

Ambient Documentation Capture

Ambient listening in the room can capture conversations and utilize generative AI to document in the patient's chart

Pressure Injury

Surveillance sensors to indicate if a patient has not moved in a prescribed time and alert staff to the risk.

Hand Hygiene Compliance

Using sensors to monitor hand hygiene compliance, reducing the need for human capital to monitor.

Fall Risk

O FALL RISK LOW

Sensors are used to monitor a patient. An algorithm can detect that a all-risk patient is attempting to get up, verbally address the patient and alert nursing staff.

Last Year I presented this Slide...







TRAINING OF AI

MODELS



IMPLEMENTATION AND INTEGRATION



ETHICAL OVERSIGHT





RESEARCH AND CONTINUOUS **IMPROVEMENT**



GOVERNANCE



ChatGPT

(and the like)

GPT = Generative Pre-trained Transformer

 Large Language Model (LLM)



What is a Language Model?

- A large language model (LLM) is a type of machine learning (built on data) model designed for natural language processing tasks such as language generation.
- Predicts next word in a sequence
- Learns from text, not facts
 - Not conscious reasoning



A Quick History of Language Models

Year	Milestone
2018	GPT-1 (OpenAl's first attempt, small scale)
2019	GPT-2 (bigger, better, controversial release)
2020	GPT-3 (massive model, over 175 billion parameters)
2022	ChatGPT launched (fine-tuned from GPT-3.5)
2024	GPT-4 (smarter, multimodal inputs like images)

What was it trained on?

• Publicly available information that was chosen for it

Limitations and Cautions

Hallucinations: inaccurate outputs

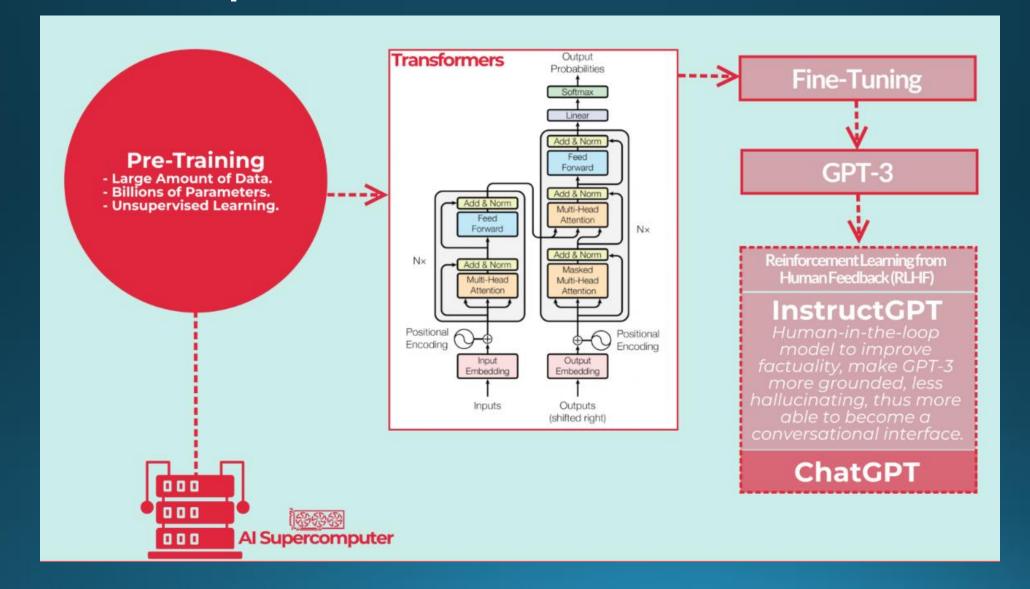
No true understanding

Bias in data

Garbage in is garbage out

Privacy concerns

Roadmap



Pre-Training

- For models like GPT-3 and GPT-4, pretraining took weeks to months
- Why so long?
 - Billions of words from books, websites, and articles
- Trained on supercomputers using thousands of powerful GPUs (graphics processing units) running in parallel

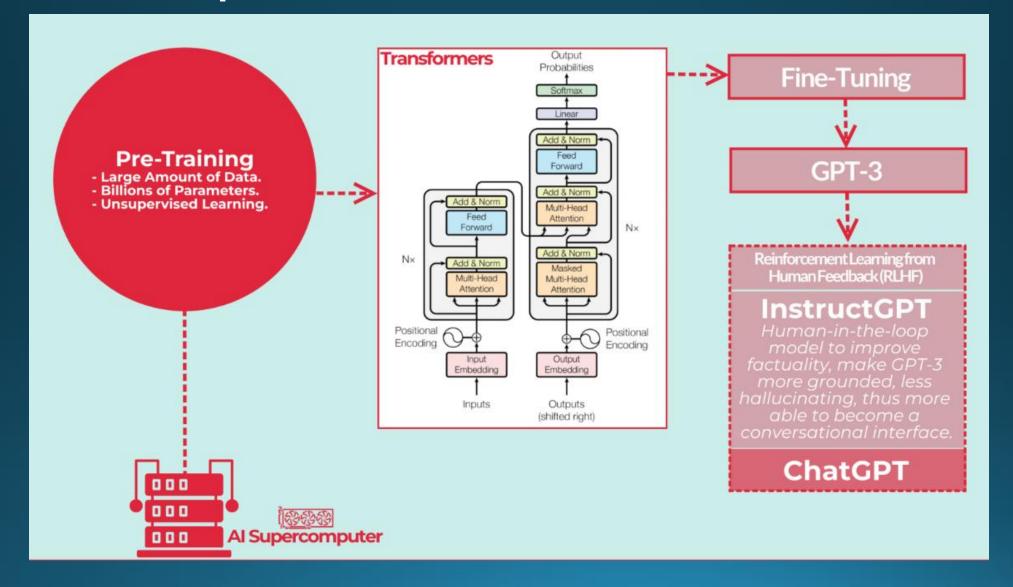


Unsupervised Learning

- How is it fed into Chat GPT?
 - Automated web crawlers and curated datasets to gather large amounts of publicly available text.
 - The text is subsequently processed and inputted into the model, enabling it to recognize patterns in the text rather than relying on specific articles or URLs.



Roadmap



Transformers

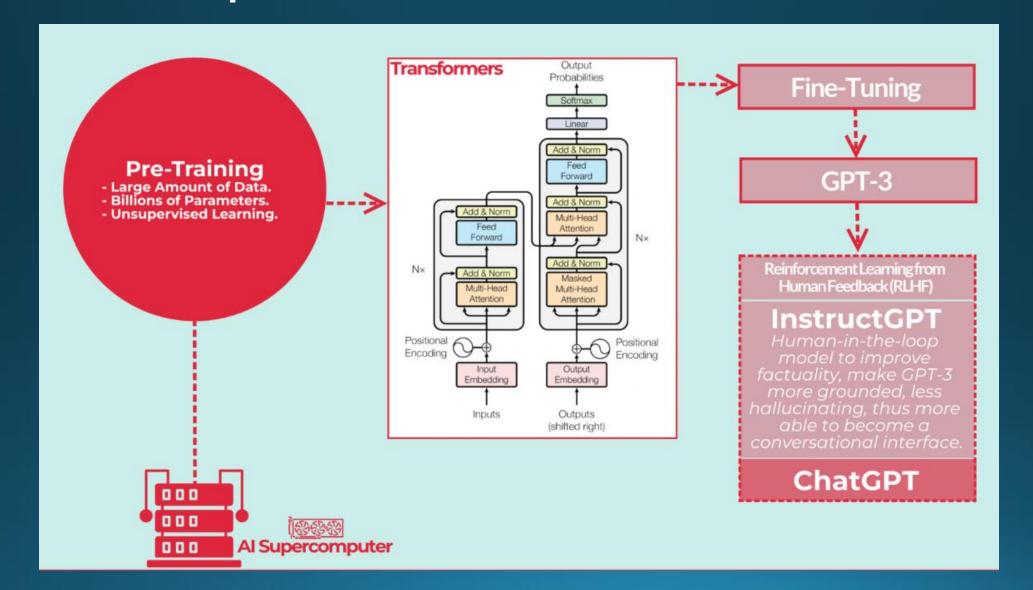
- Core technology behind ChatGPT
 - A form of neural networks designed to process text and understand context
 - This is done by self-attention
- Neural Network
 - Computer program inspired by the human brain
 - Layers of nodes (neurons) that process and pass information
 - Each layer takes input, processes it and sends to the next layer
 - Able to identify patterns



Transformers

- A highly efficient team of doctors reviewing a complex patient case
 - Instead of going through the chart sequentially, each doctor quickly scans the entire record at once, identifying the most relevant details—medical history, lab results, symptoms, and past treatments—all at the same time to make the best decision
 - Surfaces these most relevant elements and identifies patterns and context

Roadmap



Last Checkpoint

- Fine-Tuning Phase:
 - Human feedback refines responses
 - Reinforcement Learning with Human Feedback (RLHF)

- Key Points:
 - No real-time web search
 - Knowledge is static after training

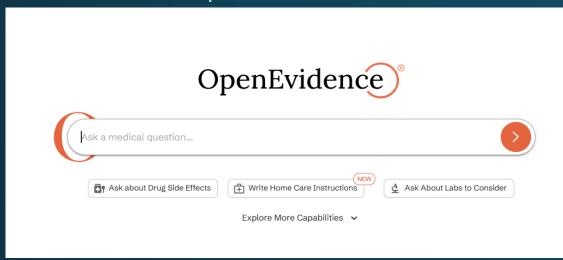
Let's Get Real

 Having a foundational understanding allows you to understand where the information is coming from

- Currently 2 main resources for providers (ever evolving)
 - ChatGPT
 - OpenEvidence
 - Clinical Key



OpenEvidence



OpenEvidence uses a comprehensive database of peer-reviewed medical literature to ensure that all responses are based on reliable and accurate information.

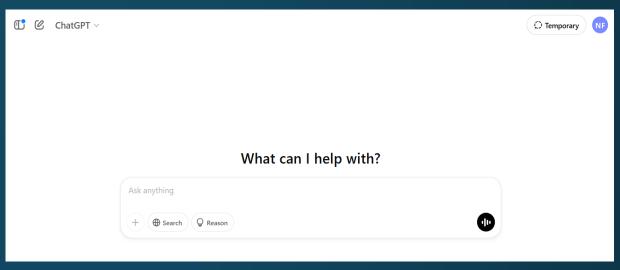
The database is regularly updated with new articles, ensuring that the information is always up to date.

OpenEvidence is more specialized in sourcing data from scientific journals, clinical studies, academic papers, and other trusted, peer-reviewed resources

It may use APIs or databases like PubMed, clinical trial repositories, or medical guidelines to provide real-time evidence-based insights

Could be live data pulls

ChatGPT



Automated web crawlers and curated datasets to gather large amounts of publicly available text.

ChatGPT's training data includes a large collection of publicly available text from the internet, but it doesn't have direct access to specialized databases like PubMed or real-time scientific publications.

It can't query or access specific, up-to-date evidence unless OpenAI's model is connected to a service that has access to that information

OpenEvidence vs ChatGPT

 OpenEvidence: Citations are listed and readily available for reference

 ChatGPT: Citations are available but less clear

Patients with persistent or worsening symptoms after appropriate antibiotic therapy should be reevaluated. Chronic carriers of GAS may not require treatment unless symptomatic or in specific epidemiologic contexts. [1][5]



Strep throat is a bacterial infection caused by *Group A Streptococcus*. Treatment is aimed at relieving symptoms, preventing complications (like rheumatic fever), and reducing transmission.

✓ First-line treatment:

- Antibiotics (typically for 10 days):
 - Penicillin V (oral) or Amoxicillin (oral)
 - If allergic to penicillin:
 - Azithromycin, Clindamycin, or a first-generation cephalosporin (if not anaphylactic allergy)

Common antibiotic regimens:

- Amoxicillin: 50 mg/kg once daily (max 1000 mg) or 25 mg/kg twice daily
- Penicillin V: 250 mg 2–3x daily for children; 500 mg 2–3x daily for adults
- Azithromycin: 12 mg/kg once daily (max 500 mg) for 5 days

Management of displaced radial fracture, closed in elderly woman

Expanded question: What is the management of a displaced radial fracture, closed, in an elderly woman?

The management of a displaced radial fracture in an elderly woman typically involves a decision between operative and non-operative treatments.

Non-operative treatment is often preferred for elderly patients due to similar long-term outcomes and lower complication rates compared to surgical options. The American Academy of Orthopaedic Surgeons (AAOS) and the American Society for Surgery of the Hand (ASSH) recommend non-operative treatment for geriatric patients, as operative treatment does not lead to improved long-term patient-reported outcomes. Non-operative management usually involves closed reduction followed by immobilization with a cast for approximately 5 weeks. [1-2]

Operative treatment with volar locking plate fixation can be considered, especially in cases where anatomical alignment is crucial for the patient's functional demands. Studies have shown that while surgical fixation may improve radiographic outcomes and grip strength, it does not significantly enhance long-term functional outcomes compared to non-operative treatment. Additionally, operative management is associated with higher complication rates, including stiffness and chronic regional pain syndrome. [3-6]

In summary, **non-operative treatment** with closed reduction and casting is generally recommended for displaced radial fractures in elderly patients, as it provides similar functional outcomes with fewer complications compared to surgical options.

Chat GPT

<u>Management of a displaced radial fracture</u> (specifically a distal radius fracture) in an elderly woman requires careful consideration due to factors such as bone density, healing capacity, comorbidities, and functional demands. Here's an approach to managing this condition:

Initial Assessment and Imaging

History and Physical Examination: Assess for signs of neurovascular compromise (e.g., pain, swelling, deformity, decreased sensation, or pulse) and evaluate for potential co-existing injuries.

Imaging: Obtain X-rays (AP, lateral, and oblique views) to assess the fracture pattern, displacement, and involvement of the joint. A CT scan may be needed in complex cases for more detailed evaluation.

Non-Surgical Management (if appropriate)

Indications: Non-surgical management is considered if the fracture is not severely displaced and the patient is a poor surgical candidate due to comorbidities or high surgical risks.

Reduction: If displaced, a closed reduction should be attempted under appropriate analgesia or sedation to restore anatomical alignment.

Casting/Splinting: Following a successful reduction, the fracture is typically immobilized in a cast (short-arm cast or sugar-tong splint) for 4-6 weeks, depending on the fracture's stability and healing.

Follow-Up: Regular follow-up X-rays to monitor fracture healing. Early mobilization of the fingers and wrist may be encouraged to prevent stiffness.

Differential for child with fevers, cough, erythematous, papular rash

OpenEvidence

New Question

FI

Most Likely Diagnoses:

- 1. **Viral Exanthem**: Viral infections such as enteroviruses can present with fever, cough, and erythematous, papular rashes. Hand, foot, and mouth disease (HFMD) caused by coxsackievirus A6 or A16 can present with widespread exanthema. [1]
- 2. **Measles**: Characterized by a prodrome of fever, cough, coryza, and conjunctivitis, followed by an erythematous maculopapular rash starting on the face and spreading to the trunk and extremities. Koplik spots on the buccal mucosa are pathognomonic.^[2]
- 3. **Rubella**: Presents with a mild fever, generalized lymphadenopathy, and a maculopapular rash that starts on the face and spreads to the body. The rash is typically mild and lasts up to 3 days. [3]
- 4. **Roseola**: Typically affects infants and young children, presenting with high fever followed by a sudden onset of a maculopapular rash as the fever subsides. [4]
- 5. **Scarlet Fever**: Caused by Streptococcus pyogenes, it presents with fever, sore throat, and a characteristic sandpaper-like rash. "Strawberry tongue" is a notable feature. [5]

Most Important Not to Miss Diagnoses:

- 1. **Kawasaki Disease**: This vasculitis presents with prolonged fever, conjunctivitis, rash, mucosal changes, extremity changes, and cervical lymphadenopathy. It is the leading cause of acquired heart disease in children and requires prompt treatment with IVIG and aspirin. [6]
- 2. **Meningococcemia**: Presents with fever, rash, and signs of sepsis. The rash can be petechial or purpuric. Early symptoms include leg pain, photophobia, and neck stiffness. Immediate antibiotic

thoropy in oppoint 7

Differential for child with fevers, cough, erythematous, papular rash

A child with fevers, cough, and an erythematous, papular rash requires a thorough differential diagnosis, as these symptoms can be indicative of several viral or bacterial infections. Here is a list of potential conditions to consider:

1. Measles (Rubeola)

- Key Features:
 - Fever, often high (104°F or 40°C).
 - Cough, coryza, and conjunctivitis (the "3 Cs").
 - Erythematous, maculopapular rash that starts on the face and spreads downwards.
 - Koplik spots (white spots on the buccal mucosa) often precede the rash by 1-2 days.
- Transmission: Highly contagious, spread through respiratory droplets.

2. Scarlet Fever

- Key Features:
 - Fever and sore throat (may be associated with strep pharyngitis).
 - Erythematous, sandpaper-like rash (papular or raised), which often starts on the chest and abdomen, then spreads.
 - Strawberry tongue and pastia's lines (red streaks in skin folds).

Clinical Key Al





Built on the foundation from Elsevier's database

Trusted Content



Daily Updates



Responsible Principles

Transparency
Human Oversight
Data Governance

UpToDate



Al Labs

Using AI to drive clinical decision support for interpreting lab results



AI Search

Delivers more succinct medical information



Partnerships

Working with dictation solutions to embed evidence-based information

Other Al Resources

- Clinical Documentation and Workflow Automation
 - DAX/Dragon Copilot
 - Abridge
 - Ambience
 - Suki
 - Nabla
- Clinical Decision Support
 - Watson for Oncology Al supported treatment recommendations
 - VisualDx Image recognition
 - PEPID AI tools for drug interations

Other Al Resources

- Medical Imaging and Diagnostics
 - Aidoc Tool for detecting acute conditions on imaging
 - Zebra Medical Vision Automated image analysis (CT, Xray, MRI)
 - Butterfly iQ+ with AI Pocket sized US with AI guidance for images and interpretation
- Remote Patient Monitoring
 - Current Health Remotely monitor/trend patient vitals
 - Health Recovery Solutions incorporates predictive analytics
 - TytoCare Remote physical exam tools
 - CareSignal Chronic Condition Management
- Population Health and Predictive Analytics
 - Epic Cosmos
 - Health Catalyst AI driven care gap analysis and tracking
 - ClosedLoop.ai Predictive Modeling and risk stratification



Other Al Resources

- Patient Engagement
 - Microsoft PES Al powered call center automation
 - Bright.md Asynchronous viral care with AI triage
 - Gyant Conversational AI chatbot
- Education, Research, and Genomics
 - DeepMind AlphaFold protein folding predictions
 - Google Med-Palm Al assistant for research
 - BioRender Al Assistant Al for creating scientific and medical illustrations

Call to Action



PROMOTE DATA
INTEGRITY AND
DOCUMENTATION
QUALITY



PILOT AND CO-DESIGN AI TOOLS



CHAMPION CLINICAL RELEVANCE



EDUCATE PEERS AND BUILD TRUST



ADVOCATE FOR CONTINUOUS IMPROVEMENT



PARTICIPATE IN AI GOVERNANCE





3. Comparative Analysis 1. Direct Instruction Contrast different concepts. Straightforward command. **Example:** "Contrast Example: Generate a the advantages and concise explanation of Working of Al. disadvantages of renewable energy DENIS PANJUTA sources." 2. Specific @denis-panjuta Contextualization Provide detailed context. 15. Abstract Example: "Provide insights Concept into the impact of AI on Clarification 4. Creative the Programming Clarify complex industry." **Scenario Setting** concepts simply Imagine and describe a Example: "Clarify the concept of 'machine fictional scenario. learning' in simple terms for Example: "Imagine a future where a non-technical audience." humans colonize Mars. Describe the societal challenges." Prompt 5. Role Play 14. Metaand Simulation Instructive Prompt Assume a role and Craft Perfect Prompts express thoughts. Example: "Generate a Example: "You are a historical figure. Write a letter expressing your prompt that effectively thoughts on modern technology. encourages creative storytelling about 6. Progressive Inquiry future technologies." Start with basics and dive into advanced topics. Example: "Start with the basics of neural networks. Then, delve into advanced applications." 13. Future Prediction 9. Problem-Solving **Learn About The Future** Framework Example: "Envision the 10. Multi-Turn Step-by-step solution technological landscape and societal changes in Conversation Example: "Explain the next 50 years." step-by-step how 7. Temporal Simulate an to troubleshoot **Sequence Request** extended dialogue. common software Example: "Simulate a dialogue bugs." Chronologically narrate 12. Personalized between a student and a events. teacher discussing quantum Inquiry Example: "Chronologically narrate the major events leading to the physics concepts." Industrial Revolution." Share thoughts on specific topics. 島 8. Opposing Viewpoint Example: "Share 11. Conditional Scenario Exploration your thoughts on Potential outcomes based on conditions [specific topic], **Used For Argument** drawing from your Example: "Describe potential outcomes Example: "Argue agains: the own experiences if renewable energy sources are widely mainstream view on the and opinions." adopted within a decade." impact of climate change

20 ChatGPT Prompts

For Better Time Management

11 Time Audit

Know where your time really goes.



PROMPT:

"Here's my last 7 days of tasks: [paste list]. Break them into categories (deep work, admin, distractions, delegation) and show me what to drop or batch."

2 Energy Mapping

PROMPT:

breaks."

Match tasks to your peak Decide what to do. defer. delegate or delete.



"Here's my task list: [paste tasks]. Categorise them into urgent/ important, and suggest what to do now, schedule, delegate or cut entirely."

7 Pomodoro Sprints

short bursts.

PROMPT:

3 Eisenhower Matrix

4 Calendar Design

Time-block like a founder.



PROMPT:

6

00

"Turn my task list into a time-blocked calendar from 9am-6pm, Mon-Fri. Prioritise deep work in the mornings and reduce context switching."

5 Weekly Planning Ritual

Create structure before the week starts.



PROMPT:

"Help me plan my week. Show me how to set 1 main goal, 3 priorities, time blocks, and a buffer system for surprises."

The Daily Highlight (Make Time Method)

"Help me build a schedule based on

energy, not time. My high-energy

hours are [insert]. Suggest when I

should do deep work, calls, admin, and

Pick one thing that will make the day feel successful.



"I've got 3 hours to make progress. Break it into Pomodoro sprints with clear goals for each 25-minute block and break ideas."

8 Task Batching

Group similar tasks to reduce switching.



PROMPT:

"Here's my to-do list: [paste]. Group tasks into 3-4 batches by mental load or tools used. Suggest when to do each batch."

9 80/20 Rule (Pareto Principle)

Double down on the highest ROI tasks.



"From this list: [paste], which 20% of tasks will produce 80% of the impact? Help me focus only on those today."

10 Parkinson's Law

Shrink tasks to fit less



"Today's packed. Suggest 1 meaningful

task I can do in 30-60 mins that would

make me feel I didn't waste the day."

"I usually take 3 hours to [task]. Help me create a 1-hour high-pressure sprint version of it with checkpoints every 20 minutes."

14 Asana Planning Prompt

MIT Framework (Most Important Task)

Start every day with purpose.

"Here are my 5 priorities for tomorrow. Which one should be my MIT, and how should I structure my morning around it?"

12 Reverse Scheduling

Plan backwards from a hard deadline.



"I need to finish [project] by [date]. Break it into daily milestones working backward from the deadline with checkpoints."

13 Timeboxing with Buffers

"Schedule my day with 90-min work

blocks, 15-min breaks, and 1 hour of

flex time for unexpected tasks."

Add breathing space between focus blocks.

PROMPT:



tools better.

"Help me build a weekly time-blocking structure inside Asana with tags for deep work, admin, meetings, and urgent tasks."

"I want to track time this week in 5

categories: deep work, meetings,

admin, distraction, and recovery.

Suggest a simple system."

15 Delegation Matrix

19 Time-Based Goals

Reclaim your time by letting go.

18 A

Schedule new experiences

that recharge you.

16 Chaos with Purpose



YES NO

"Which of these tasks: [paste list] can I delegate, automate, or drop completely? Suggest how to hand off each one clearly."

()

"Help me plan one new experience per week for the next month - something that sparks curiosity or energy outside

Weekly Review (GTD-style)

Reflect, reset, and reprioritise.



PROMPT:

"Guide me through a Friday review. What went well, what didn't, and what are my top 3 priorities for next week?"

Time Tracking Breakdown

Track where you waste

PROMPT:



outcomes PROMPT:

Attach effort to

"I want to work 20 high-impact hours this week. Suggest how to allocate that time across deep work, projects, and learning."

Priority Filters (Mental Models)

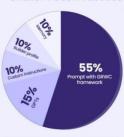
Make faster yes/no decisions.



"Give me 3 mental filters to quickly decide if a task is worth doing, deferring, or delegating. Base it on impact, energy, and urgency."

All-in-one Al Cheat Sheet

ChatGPT Best Practices



Al Models			
GPT-4.5	Enhances conversational responses		
docprovik	Specializes in logical reasoning		
GPT-o3-mini	Optimized for STEM tasks		
MISTRAL LARGE	Focuses on code generation and math		
Clama 3.1	Strong multilingual support and understanding		
Gemini	Robust coding and general knowledge performance		
☑ Grok ③	Offers advanced reasoning capabilities		
Claude 3.7 Sonnet	Combines rapid & reflective thinking		
Deep Research	Helps generate in-depth research reports		
S Qwen2.5	Excels in natural language and coding		

Prompting Techniques

1. Iterative Refinement:

Refines prompts based on initial responses

3. Tone Specification:

Guides the AI to adopt a specific tone in its response.

4. Recursive Prompt Engineering: Builds upon previous responses to delve

5. Comparative Prompting: Involves comparing different options or

6. Chain-of-Thought Prompting:

Encourages the AI to explain its reasoning step by step.

7. Dynamic Prompt Engineering: Involves adjusting prompts based on the 8. Persona-Based Prompting:

Assigns a persona to the AI to tailor

responses from a specific role. 9. Zero-Shot:

This technique involves providing a prompt

without any prior examples or context.

10. Guided Exploration: Structures a prompt to comprehensively explore a topic by outlining specific steps.

GRWC Prompt Framework

1. Goal
Defines the main objective or desired outcome

of the prompt. 2. Return Format

Specifies how the response should be structured or presented.

3. Warnings Highlights cautions or constraints to ensure accuracy and relevance.

4. Context Dump Provides background information to guide and tailor the response.

Example Prompt

I want a list of the best beginner-friendly cooking recipes for a romantic dinner within I hour of preparation.

description, and a list of key ingredients.

Be careful to ensure the recipes are truly beginner-friendly, with no complex techniques, and that the times are accurate.

For context: my partner and I are new to cooking, we enjoy talian cuisine, and we're planning a special evening at hom next weekend. We'd love something with pasta and a simple dessert, and we don't have access to a wide range of exotic

Al Use Cases In Businesses

- Analysis Research
 - Strategy Marketing
- Video generation Audio generation Digital operations
- Image generation

CURSOR

agenta Alagents

- Advertising Lead generation Website creation Customer service
- Presentation creation

Writing and editing • Finance management

Al Tools		
decktopus	Presentations	
VEED.IO	Video editing	
runway	Video creation	
Midjourney	Image generation	
Recraft	Design	
Taplio	LinkedIn growth	
> Webflow	Website development	
		_

Mindstream

IJO Music generation

GPTs Generate images Create videos Makes writing Programming WRITE FOR ME apython' 0 Helps with research SCISPACE Research assistance 0 Helps build a Generates logos Makes research Analyse data as

Output **Formats**

• Charts Docs Code · Videos Table Quotes Hyperlinks • Plain Text **Bullet Points**

ChatGPT Inputs • Files • Text • Images

Key Terms

1. Prompt: Input given to an AI model to generate a specific response.

2. AGI (Artificial General Intelligence): Al capable of performing any intellectual task a human can.

3. ASI (Artificial Superintelligence): Hypothetical AI surpassing human capabilities across various fields. 4. LLM (Large Language Model): AI model trained on vast text data to process and generate human-like

5. Prompt Engineering: The practice of crafting effective prompts to elicit desired AI responses.

6. Generative Al: Al that creates new content like text, images, or audio based on input prompts.

7. Tokens: The smallest units of text data processed by Al models, such as words or characters. 8. GPT (Generative Pre-trained Transformer): A type of LLM that generates coherent and contextually

9. Machine Learning: A subset of Al focused on algorithms that learn from data without explicit programming 10. Neural Network: A computer system modeled after the human brain, used for tasks like speech and vision

Prompting Frameworks

1. ERA (Expectation, Role, Action):

Define the desired result (Expectation), specify the role ChatGPT should assume (Role), and clearly outline the actions you want ChatGPT to take (Action).

2. APEX (Action, Purpose, Expectation):

Clearly define the specific task that needs to be performed (Action), write the underlying goal behind the task (Purpose), and describe the desired outcome (Expectation).

3. TASK (Task, Action, Context):

Specify the task you need ChatGPT to perform (Task), outline the action ChatGPT should take to fulfill the task (Action), and provide the context or background information for the task (Context).

4. CARE (Context, Action, Result, Example):

Provide context or background information for ChatGPT to understand the task better (Context), detail the action ChatGPT should take to complete the task (Action), describe the desired outcome or result of the task (Result), and supply an example of what you want if necessary (Example).

5. RISE (Role, Input, Steps, Example):

Assign a specific role for ChatGPT to take on (Role), describe what input is required for ChatGPT to complete your request successfully (Input), specify step-by-step instructions for ChatGPT to follow (Steps), and provide an example of what you expect as an output if needed (Example).

6. CASE (Context, Action, Scenario, Example):

Describe the context or background information for ChatGPT to understand your goal better (Context), specify the actions needed for ChatGPT (Action), describe the scenario that applies to your request or question (Scenario), and give an example to illustrate your point better (Example).

7. ERA (Expectation, Role, Action):

Define the desired result (Expectation), specify the role ChatGPT should assume (Role), and clearly outline the actions you want ChatGPT to take (Action).

8. APEX (Action, Purpose, Expectation):

Clearly define the specific task that needs to be performed (Action), write the underlying goal behind the task (Purpose), and describe the desired outcome (Expectation)

Specify the task you need ChatGPT to perform (Task), outline the action ChatGPT should take to fulfill the task (Action), and provide the context or background information for the task (Context).

Provide context or background information for ChatGPT to understand the task better (Context), detail the action ChatGPT should take to complete the task (Action), describe the desired outcome or result of the task (Result), and supply an example of what you want if necessary (Example).

Assign a specific role for ChatGPT to take on (Role), describe what input is required for ChatGPT to complete your request successfully (Input), specify step-by-step instructions for ChatGPT to follow (Steps), and provide an example of what you expect as an output if needed (Example).

12. CASE (Context, Action, Scenario, Example):

Describe the context or background information for ChatGPT to understand your goal better (Context), specify the actions needed for ChatGPT (Action), describe the scenario that applies to your request or question (Scenario), and give an example to illustrate your point better (Example).

Questions?