

Welcome!

# **Generative AI – Use Cases, Their Impact, and What's Next for Medical Affairs**

# Presenters



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# Conflict of Interest and Disclosures

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# Educational Objectives

This session will provide a learning opportunity for our audience by:

Objective 1: Showcasing results from use of Generative AI in Medical Affairs

Objective 2: Discussion impact on Publications and Content Creation

Objective 3: Taking a crystal ball on how the future is unfolding with an ecosystem of models and technologies

# Demonstration of use cases

# Demo 1

- Literature summarization to SRD creation

# Demo 2

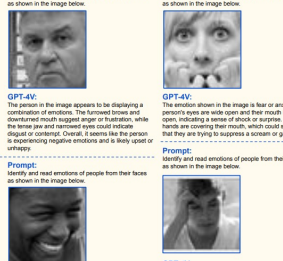
- MLR Review

# Opportunity areas

GPT-4V(ision) can interpret emotions from images (and more)

**Sec. 8.1 Read Emotion from Facial Expressions**

**Prompt:** Identify and read emotions of people from their faces as shown in the image below.



**GPT-4V:** The person in the image appears to be displaying a combination of emotions. The furrowed brows and downturned mouth suggest anger or frustration, while the wide eyes and slightly open mouth indicate a sense of shock or surprise. Their hands are covering their mouth, which could suggest disgust or concern. Overall, it seems like the person is experiencing negative emotions and is being open or unwell.

**Prompt:** Identify and read emotions of people from their faces as shown in the image below.

**GPT-4V:** The emotion shown in the image is fear or anxiety. The person's face is wide open and their mouth is slightly open, indicating a sense of shock or surprise. Their hands are covering their mouth, which could suggest disgust or concern. Overall, it seems like the person is experiencing negative emotions and is being open or unwell.

**Prompt:** Identify and read emotions of people from their faces as shown in the image below.

**GPT-4V:** The person in the image appears to be displaying a happy emotion. This can be seen from the wide smile and the crinkles around the eyes.

**Prompt:** Identify and read emotions of people from their faces as shown in the image below.

**GPT-4V:** The person in the image appears to be experiencing a negative emotion, likely frustration or disappointment. This is evident from the furrowed brows, downturned lips, and hand on the forehead.

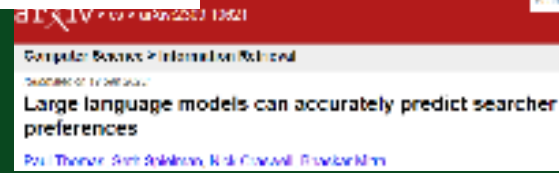
Figure 64: GPT-4V can reliably identify and read the emotions of people from their facial expressions. Check Section 8.1 for detailed discussions.

## Technology continues to advance

### Towards Conversational Diagnostic AI

The Ts<sup>1</sup>, Anil Pateja<sup>1</sup>, Mike Schacterman<sup>1</sup>,  
 Khaleel Saib<sup>1</sup>, Jan Freyberg<sup>1</sup>, Ryutaro Tamoe<sup>2</sup>, Amy Wang<sup>1</sup>, Beema L1, Mohamed Amin<sup>1</sup>,  
 Nisad Tomasev<sup>1</sup>, Shashank Arora<sup>1</sup>, Karan Singhal<sup>1</sup>, Yong Cheng<sup>1</sup>, Le Hou<sup>1</sup>, Albert Webson<sup>2</sup>,  
 Kavita Rulkar<sup>1</sup>, S. Sara Maddave<sup>1</sup>, Christopher Scerif<sup>1</sup>,  
 Junaj Gutwala<sup>1</sup>, Jodie Barral<sup>2</sup>, Katherine Chou<sup>1</sup>, Greg S. Corrado<sup>1</sup>, Yossi Matias<sup>1</sup>,  
 Alan Karthikesalingam<sup>1,2</sup> and Vivek Natarajan<sup>1,2</sup>

<sup>1</sup>Google Research, <sup>2</sup>Google DeepMind



## Concerns about explainability, equity and hallucinations continue

Figure 2: HVI for different hallucination categories across various LLMs.

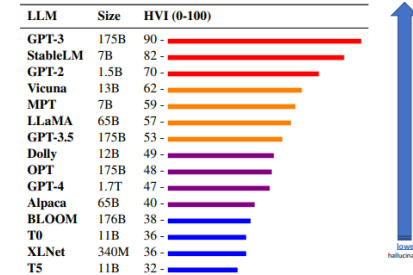
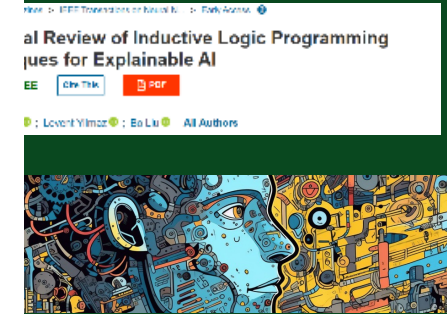


Figure 3: The HVI scale illustrates the hallucination tendencies exhibited by various LLMs.

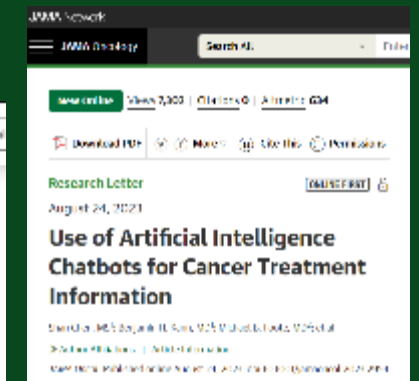
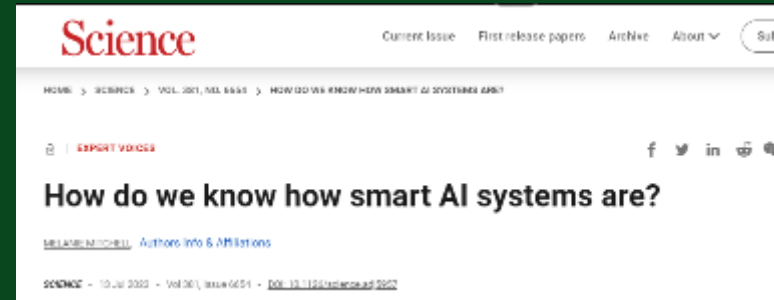



European Commission

THE NATIONAL LAW REVIEW

Regulations and case law evolving

## Methods and domains of validation are not formally established





# What is the Impact on Publications and Content Creation?

# Guiding Professionals in Appropriate Use of AI

CURRENT MEDICAL RESEARCH AND OPINION  
2024, VOL. 40, NO. 1, 9–10  
<https://doi.org/10.1080/03007995.2023.2273139>  
Article /2273139



Taylor & Francis  
Taylor & Francis Group

AI POSITION STATEMENT

OPEN ACCESS

International Society for Medical Publication Professionals (ISMPP) position statement and call to action on artificial intelligence



**Purpose:** The International Society for Medical Publication Professionals (ISMPP) acknowledges the pivotal role of artificial intelligence (AI) in reshaping the landscape of medical publishing and communications. As science and technology advance, so does the potential of AI in these fields.

**Scope:** This position statement focuses on guiding professionals within the realm of medical publishing and communications in the appropriate use of AI. Anchored in ISMPP's Mission Statement and the overall guiding principles of Good Publication Practice<sup>1</sup>, it aims to illuminate the inherent value of AI and to establish best practices that foster a safe, ethical, and productive AI environment.

ISMPP urges Medical Publication and Communication pro-

- **Appropriate Disclosure:** Authors and medical publication professionals should disclose the active use of generative AI in the creation of content or assistance with writing or editing of publications, per the journal, congress, or industry-standard guidelines.
- **Ensuring Responsibility and Trust:** All AI outputs must be subjected to human oversight and verification to ensure accuracy and prevent the dissemination of misinformation or disinformation.
- **Data Transparency:** Upholding the principles of openness and clarity about the sources of data and the methods used by AI and adopt explainable AI (XAI) when possible.
- **Eliminating Bias:** Implementing practices that negate biases which can hinder patient care and propagate healthcare inequity.
- **Enhancing Accessibility:** Using AI to bridge patient accessibility gaps, focusing on addressing health literacy challenges and breaking language barriers in medical science.
- **Respecting the Academic Integrity of AI:** Recognizing the fundamental science behind AI and treating it as a legitimate academic field that has guidelines and findings relevant to medical publishing and communications.
- **Educating about AI:** Facilitating understanding among professionals and the broader public about the legitimate role, advantages, and limitations of AI in medical communications.
- **Addressing AI Misconceptions:** Actively countering

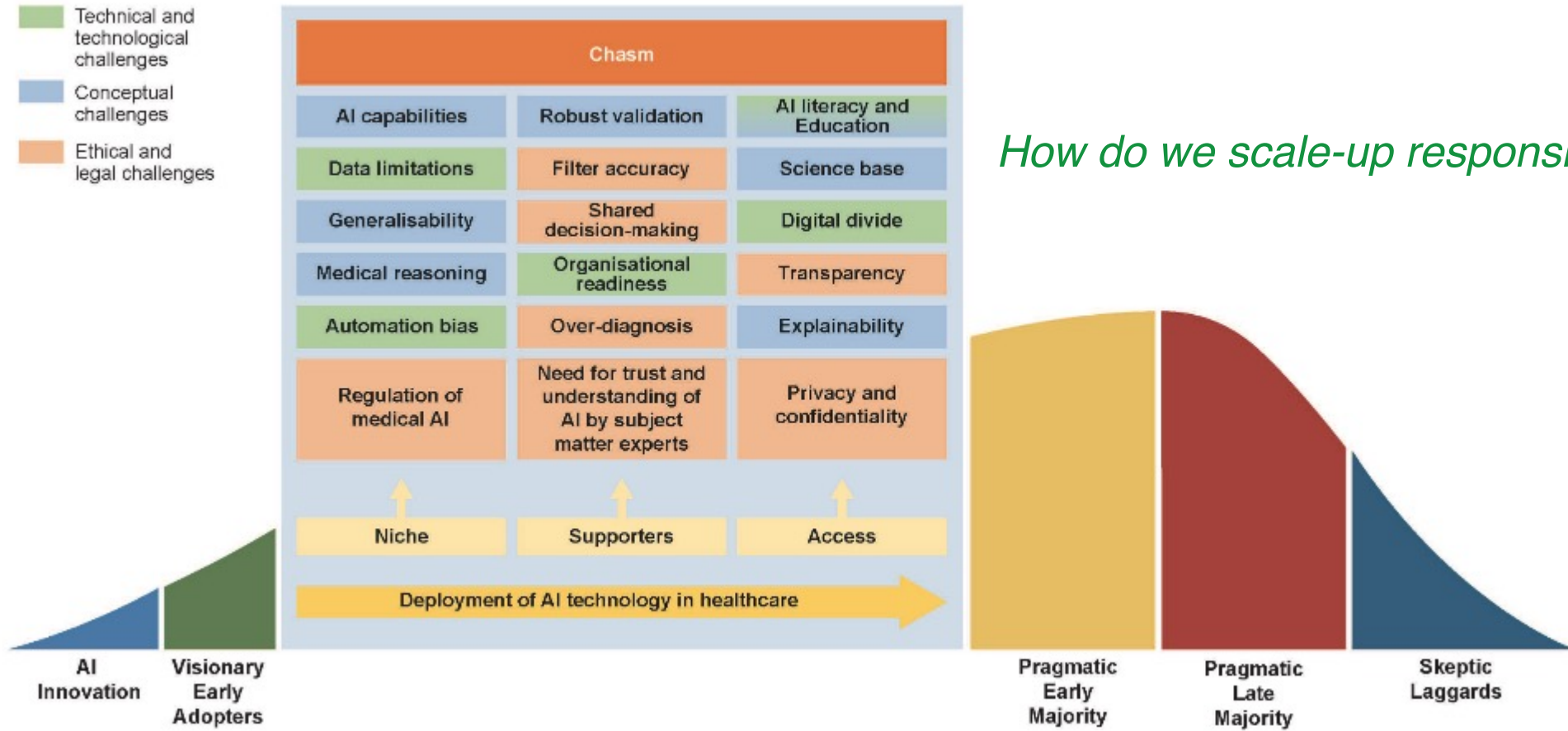
***"All AI outputs must be subjected to human oversight and verification to ensure accuracy and prevent the dissemination of misinformation or disinformation"***

***... "Ensure that AI is integrated responsibly, transparently, and fairly, always prioritizing confidentiality..."***

[Full article: International Society for Medical Publication Professionals \(ISMPP\) position statement and call to action on artificial intelligence \(tandfonline.com\)](https://tandfonline.com)



# Key Challenges With Implementation of AI-Based Solutions Will Impact Efforts to Manage at Scale



*How do we scale-up responsibly?*

In: Jennifer Ghith, Bob J.A. Schijvenaars, Arnulf Stenzl: Application of artificial intelligence to overcome clinical information overload in cancer (in press, 2024), Adapted from "Crossing the chasm: a 'tube-map' for agent-based social simulation of policy scenarios in spatially-distributed systems," by Polhill, JG et al. *GeoInformatica*. 2019; 23:169–199  
[Also: Keys to Scaling Digital Ability and Value | BCG](#)

# How Do We Scale Up Responsibly? Considering Practicalities



Ensure alignment across all levels of leadership. This means ensuring prioritize use cases have valuations that are clearly communicated



Prioritize data proficiency, efficiency and infrastructure. Enable broad understanding of best practices



Execute as if “always on” – update schedules will need to be flexible

# Crystal ball on how the future is unfolding

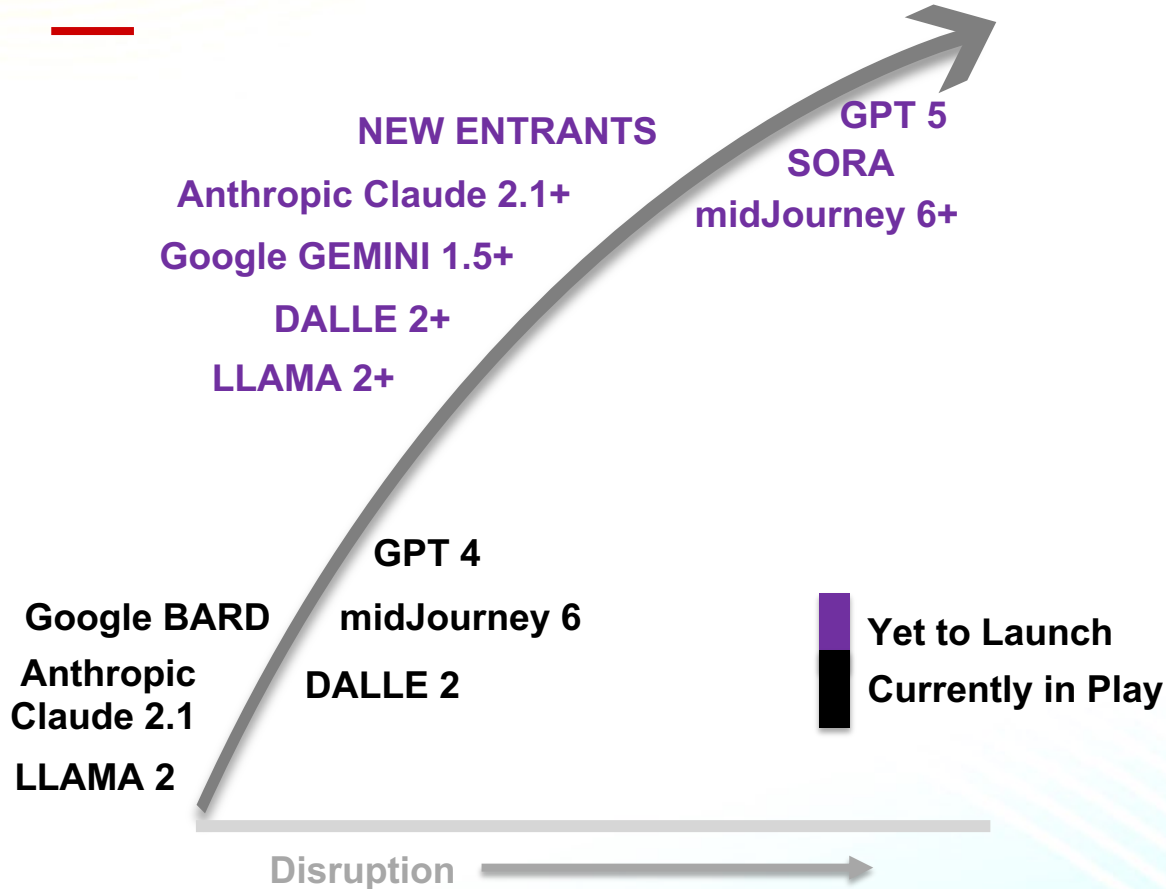
# Progress At Breathtaking Pace...

OpenAI just shifted the Generative AI battleground to the Media Industry and Hollywood with its New AI text-to-video Product SORA

# Potential for Disruption in Ways We Have Not Fathomed... Yet



## PROGRESS OF GENAI INNOVATION



## CURRENT DISRUPTION AREAS

### Content Generation

- Medical Response Letters
- Field Medical Presentations
- New Visual Content
- Publication Manuscripts

### Knowledge Synthesis

### Analytics

- Conversational Analytics with Data Sets, Medical Insights etc.
- Gleaning Insights from IST Protocols

### Virtual Assistants

- Medical Contact Center
- Medical Information Online (if we can address hallucinations)



# An Exhilarating Path Forward



## STRATEGY TO CAPITALIZE ON THE FAST-EVOLVING GENAI ADVANCEMENTS

### Strengthen the Talent Foundation

- Creative Souls who can **reimagine processes** in impactful areas through the lens of new generative AI capabilities
- Tech Mavericks with **deep expertise in Generative AI models**
- **Prompt engineering**
- **Product Management**

### Establish a Robust Technology Infrastructure

- **Secure Infrastructure** with flexibility to leverage multiple models
- **Scale-Up Architecture**

### Drive Organizational Education

- **Increase awareness** of productivity use cases
- **Reskilling & Change Management**



## WHILE MAKING PROGRESS ON THE UNKNOWNNS

- Hallucinations
- Data Privacy
- Cybersecurity
- Copyright Issues
- Bias
- Training
- Data Quality
- Deepfakes
- Regulations
- Antitrust Issues

*Company worker in Hong Kong pays out £20m in deepfake video call scam*

*Samsung workers accidentally leaked trade secrets via ChatGPT*

*New York Times Sues OpenAI And Microsoft: 'Billions' Owed For AI Copyright Infringement*

**Questions?**

**Thank you!**