Ethique de l'IA en santé et dans le soin

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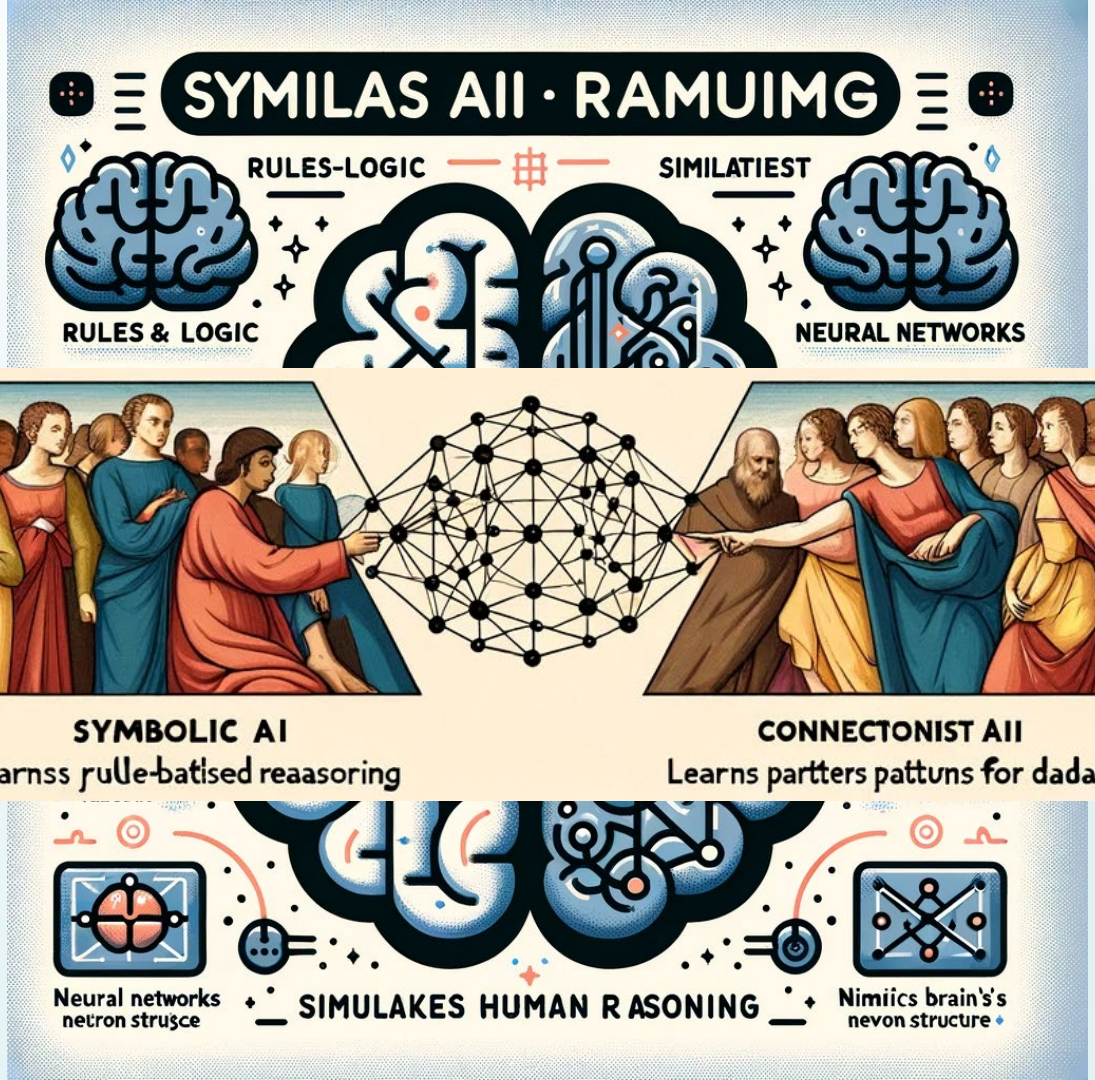
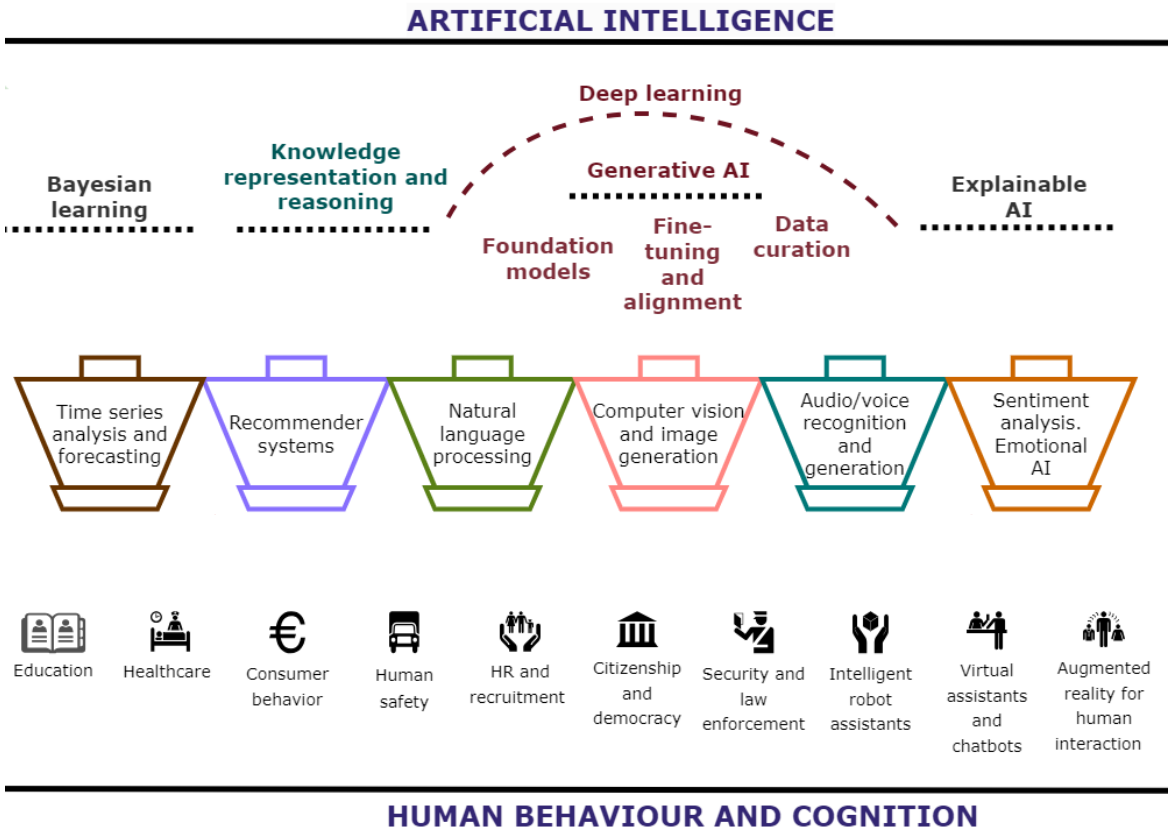
Joseph Weizenbaum avec ELIZA (1965)

1965



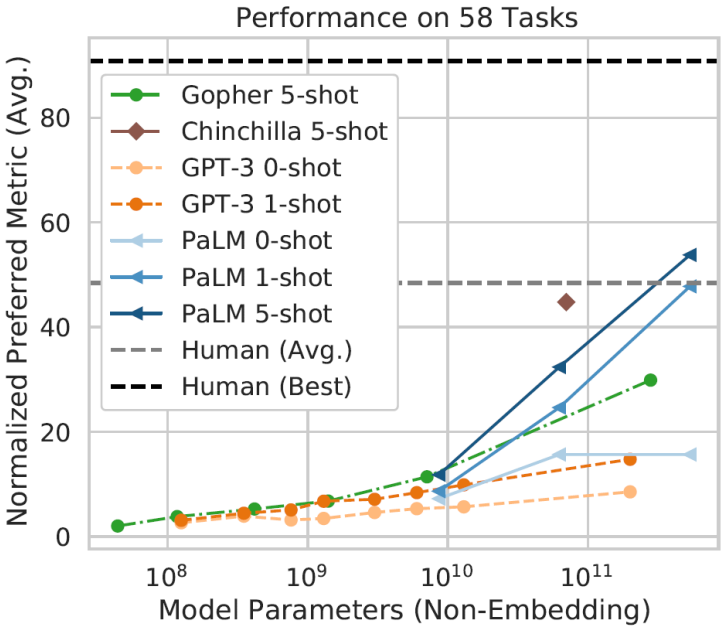
Panorama des recherches en IA



2017

Attention Is All You Need

Transformers



A. CHOWDHERY et al. PaLM: Scaling Language Modeling with Pathways. 2022. arXiv:2204.02311

Mais il y a ce qu'on appelle les modèles fondationnels, qui sont les mod
èles d'apprentissage de l'intelligence artificielle, son socle, sa
structure d'esprit, si je devais le dire en des termes simples.

[83493, 3900, 379, 264, 3846, 934, 54386, 917, 6853, 3625, 1491, 85798, 21901, 367, 36527, 11, 7930, 15132, 3625, 1491, 85798, 294, 53149, 8135, 1056, 425, 409, 326, 55624, 8677, 1989, 1104, 72, 6853, 11, 4538, 12288, 273, 11, 829, 6070, 294, 77025, 40807, 11, 4502, 4864, 3567, 2852, 514, 13510, 665, 951, 4751, 288, 69406, 13]

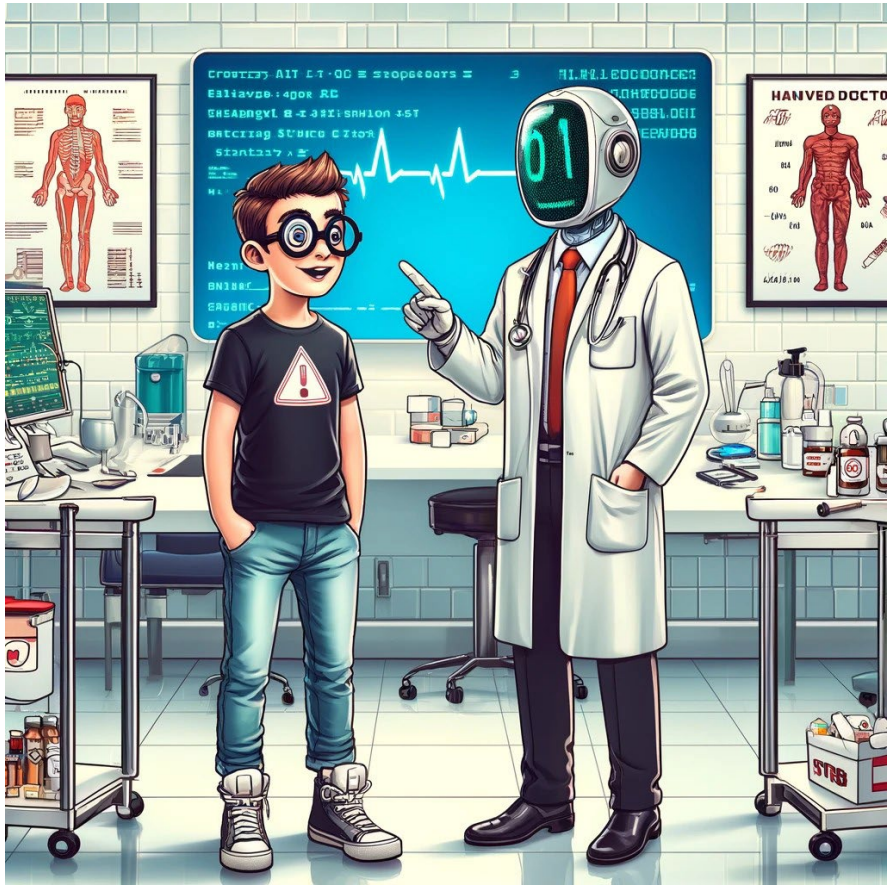
Tokens

50k

The aim of the Guidelines is to promote Trustworthy AI. Trustworthy AI has three components, which should be met throughout the system's entire life cycle

[791, 9395, 315, 279, 48528, 374, 311, 12192, 17236, 43629, 15592, 13, 17236, 43629, 15592, 706, 2380, 6956, 11, 902, 1288, 387, 2322, 6957, 279, 1887, 596, 4553, 2324, 11008]

Source: OpenAI GPT-4 tokenizer



First answer is correct.
Second answer is wrong.

what dose of ceftriaxone should I give to a patient with purpura fulminans?

Gpt-3 (OpenAI)

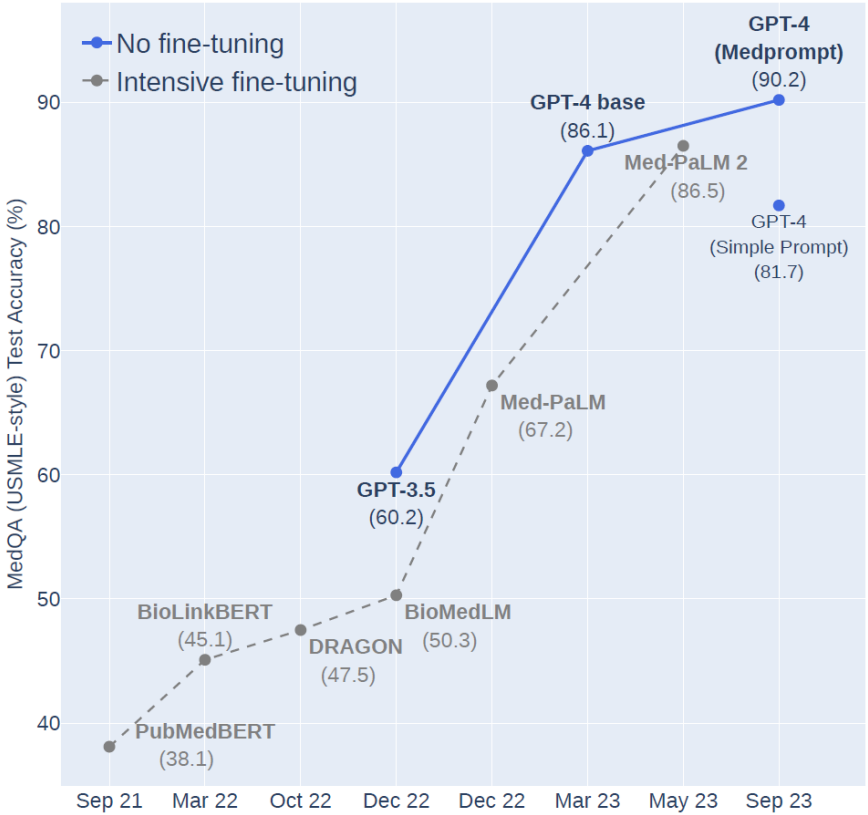
50 mg/kg body weight every 24 hours. [2007]

how should I administer this antibiotic to the patient?

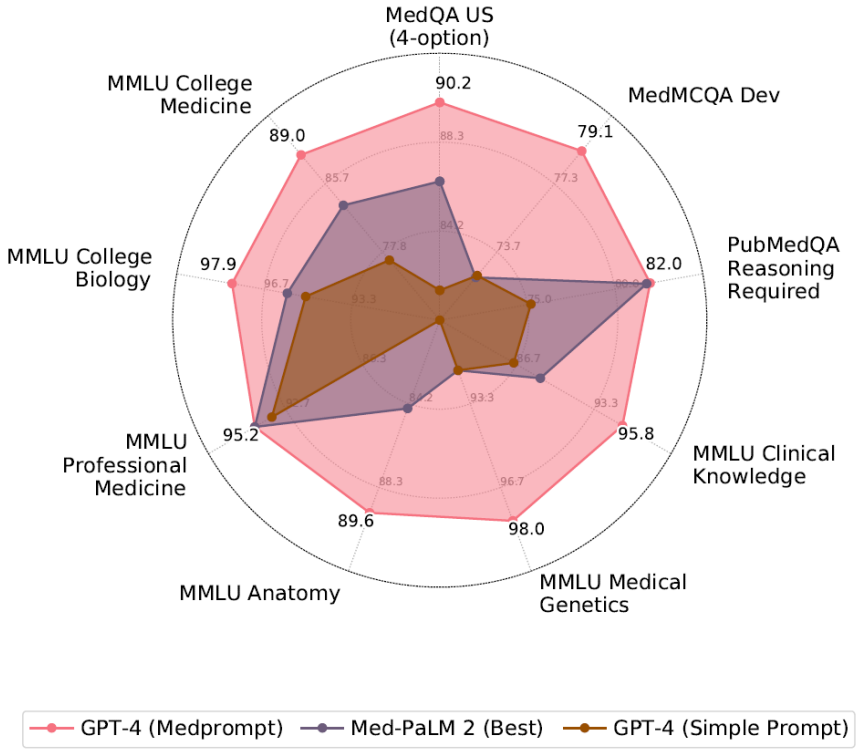
Gpt-3 (OpenAI)

Patients may be administered 1 or 2 g IM q12h for 4 doses. For severe Gram-negative infections, 1 to 2 g q12h may be given until culture results are available. [2007]

Filtres et contrôles



(a)

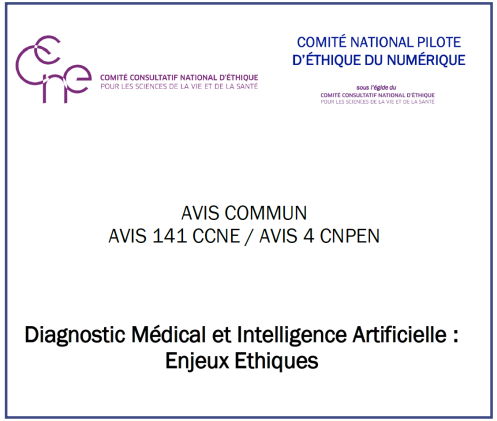


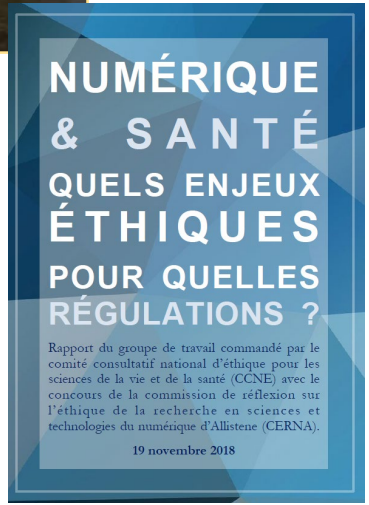
(b)

Figure 1: (a) Comparison of performance on MedQA. (b) GPT-4 with Medprompt achieves SoTA on a wide range of medical challenge questions.

Ethics of AI in healthcare

1. Role of AI systems
2. Explicability and reproducibility
3. Data
4. Bias and fairness
5. Cybersecurity and biosecurity
6. Human oversight and accountability
7. Beneficence, non-maleficence, and human autonomy
8. Socio-economic and environmental impact





A.I. May Someday Work Medical Miracles. For Now, It Helps Do Paperwork.

The best use for generative A.I. in health care, doctors say, is to ease the heavy burden of documentation that takes them hours a day and contributes to burnout.

"Reducing the documentation burden would be a huge win on its own."

The software translates any medical terminology into plain English at about a fourth-grade reading level.

"A.I. has allowed me, as a physician, to be 100 percent present for my patients,"

That makes generative A.I., they say, very different from A.I. algorithms, already approved by the Food and Drug Administration, for specific applications, like scanning medical images for cell clusters or subtle patterns that suggest the presence of lung or breast cancer. Doctors are also using chatbots to communicate more effectively with some patients.

Synthetic data in machine learning for medicine and healthcare

The proliferation of synthetic data in artificial intelligence for medicine and healthcare raises concerns about the vulnerabilities of the software and the challenges of current policy.

Richard J. Chen, Ming Y. Lu, Tiffany Y. Chen, Drew F. K. Williamson and Faisal Mahmood

NATURE BIOMEDICAL ENGINEERING | VOL 5 | JUNE 2021 | 493–497

Scientific Reports | (2021) 11:21896

DeepFake electrocardiograms using generative adversarial networks are the beginning of the end for privacy issues in medicine

Vajira Thambawita[1,2,8✉], Jonas L. Isaksen[3,8], Steven A. Hicks[1,2], Jonas Ghouse[3], Gustav Ahlberg[3], Allan Linneberg[3,4], Niels Grarup[3], Christina Ellervik[3], Morten Salling Olesen[3], Torben Hansen[3], Claus Graff[5], Niels-Henrik Holstein-Rathlou[6], Inga Strümke[1], Hugo L. Hammer[1,2], Mary M. Maleckar[1,2], Pål Halvorsen[1,2], Michael A. Riegler[1,7,8✉] & Jørgen K. Kanters[3,8✉]

arXiv:2305.05247

Leveraging Generative AI Models for Synthetic Data Generation in Healthcare: Balancing Research and Privacy

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Shashank Kumar
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Synthetic data in health care: A narrative review

Aldren Gonzales[1]*, Guruprabha Guruswamy[2], Scott R. Smith[1]

Synthetic data generation: State of the art in health care domain☆

Hajra Murtaza[a,*], Musharif Ahmed[a], Naurin Farooq Khan[a], Ghulam Murtaza[b], Saad Zafar[a], Ambreen Bano[c]

PERSPECTIVE **OPEN**

Harnessing the power of synthetic data in healthcare: innovation, application, and privacy

Mauro Giuffrè[1,2✉] and Dennis L. Shung[1]

https://www.sfchronicle.com/projects/2021/jessica-simulation-artificial-intelligence/
https://www.washingtonpost.com/technology/2023/08/09/ai-dead-children-tiktok-videos/

"Intellectually, I know it's not really Jessica, but your emotions are not an intellectual thing."

"Thanks to extensive media archives of RAI, we were able to collect enough material to successfully generate a synthetic human of Maria Callas."

Source IBC Accelerator
https://pluxbox.com/blog/creating-synthetic-humans-for-next-gen-storytelling/

The Jessica Simulation:
Love and loss in the age of A.I.

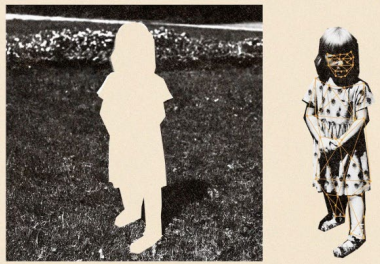
The Washington Post Sign in

TECH Help Desk Artificial Intelligence Internet C

AI is being used to give dead, missing kids a voice they didn't ask for

By Jennifer Hassan

August 9, 2023 at 3:17 a.m. EDT



(Washington Post illustration; iStock)

AI Act timeline

DIGITALEUROPE

August 2024

AI Act enters into force

February 2025

Bans apply

AI literacy rules apply

to AI providers & deployers

May 2025

GPAI codes of practice ready

August 2025

GPAI models rules apply

National authorities designated

August 2026

High-risk rules apply for Annex III

Transparency rules apply

August 2027

High-risk rules apply for Annex I (NLF)

Formation iRECS

Éthique de l'IA en santé et dans le soin

Glossaire

V1 (24 juin 2024)

Éthique de l'IA en santé et dans le soin

Critères d'évaluation

v3 FR (8 juin 2024)*

+3 exercices pratiques

Comme il descendait sur la rive pour se laver les pieds, voici qu'un énorme poisson s'élança pour le dévorer. Effrayé, Tobie poussa un grand cri, en disant: « Seigneur, il se jette sur moi! » L'ange lui dit: « Prends-le par les ouïes et tire-le à toi. » Ce qu'ayant fait, il le tira sur la terre sèche, et le poisson se débattit à ses pieds. L'ange lui dit: « Vide ce poisson, et conserves-en le cœur, le fiel et le foie, car ils sont employés comme d'utiles remèdes. » Tobie 6:2-5

FILIPPINO LIPPI, NATIONAL GALLERY, WASHINGTON