

AI van innovatie naar implementatie



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Data



AI



Oplossing



Diederik Gommers: 'Behandelen of niet? AI helpt beslissen'

4 MINUTEN LEESTIJD | DUTCH HEALTH WEEK | 14-06-2023 |  JASPER ENKLAAR

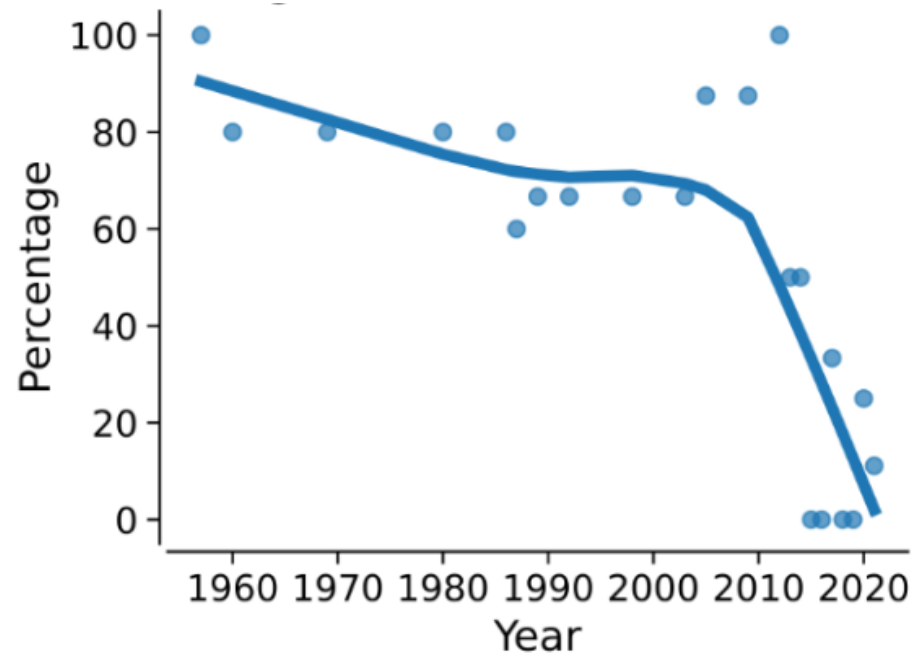
LAATST BIJGEWERKT OP: 14-06-2023

Lees Later 

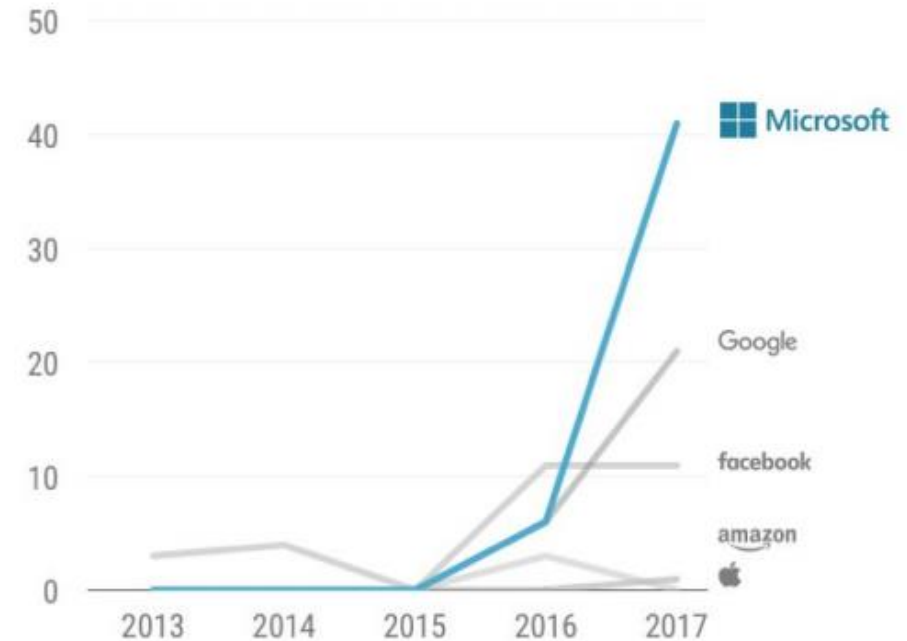


Uiteenlopende trends tussen de academie en de industrie

% of Large Scale AI results from Academia



AI and Machine Learning Publications



Mijn verhaal en AI

Van innovatie naar implementatie

CAIRO5

A multi-center randomized phase 3 study of the Dutch Colorectal Cancer Group



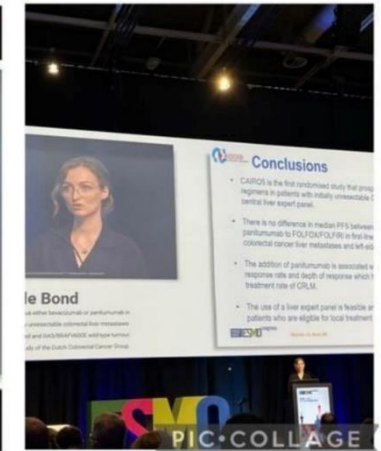
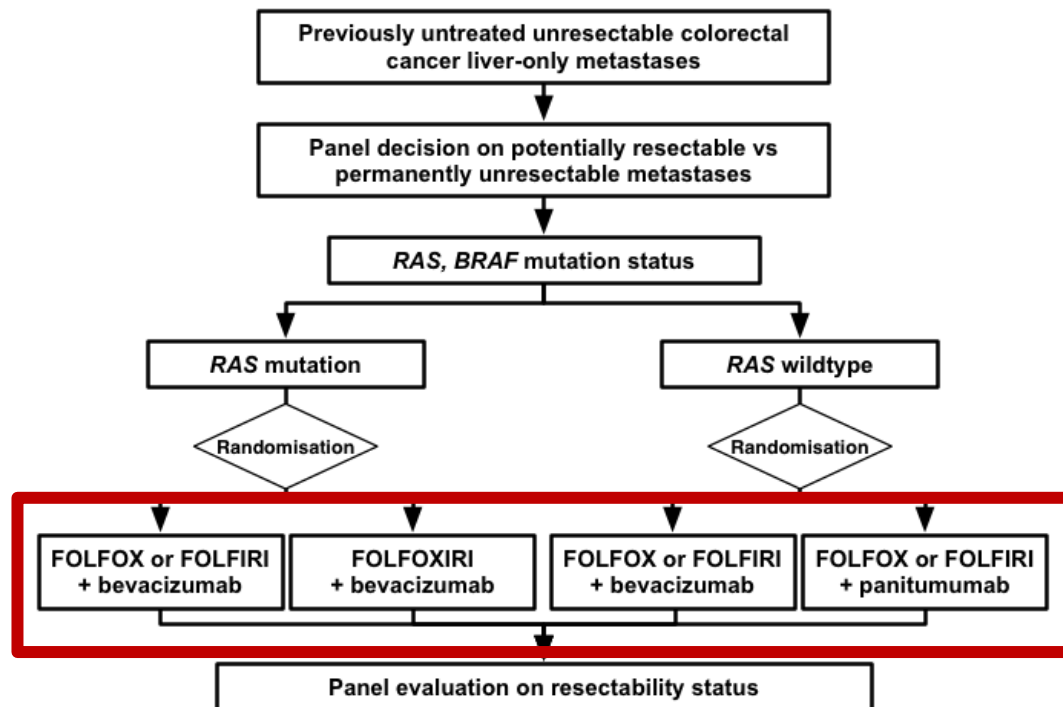
First-line systemic treatment strategies in patients with initially unresectable colorectal cancer liver metastases (CAIRO5): an open-label, multicentre, randomised, controlled, phase 3 study from the Dutch Colorectal Cancer Group

Marinde J G Bond*, Karen Bolhuis*, Olaf J L Loosveld, Jan Willem B de Groot, Helga Droogendijk, Helgi H Helgason, Mathijs P Hendriks, Joost M Klaase, Geert Kazemier, Mike S L Liem, Arjen M Rijken, Cornelis Verhoef, Johannes H W de Wilt, Koert P de Jong, Michael F Gerhards, Martinus J van Amerongen, Marc R W Engelbrecht, Krijn P van Lienden, I Quintus Molenaar, Bart de Valk, Brigitte C M Haberkorn, Emile D Kerver, Frans Erdkamp, Robbert J van Alphen, Danielle Mathijssen-van Stein, Aysun Komurcu, Marta Lopez-Yurda, Rutger-Jan Swijnenburg*, Cornelis J A Punt*, on behalf of the Dutch Colorectal Cancer Study Group†

Summary

Background Patients with initially unresectable colorectal cancer liver metastases might qualify for local treatment with curative intent after reducing the tumour size by induction systemic treatment. We aimed to compare the currently most active induction regimens.

Lancet Oncol 2023
Published Online
June 14, 2023
<https://doi.org/10.1016/>





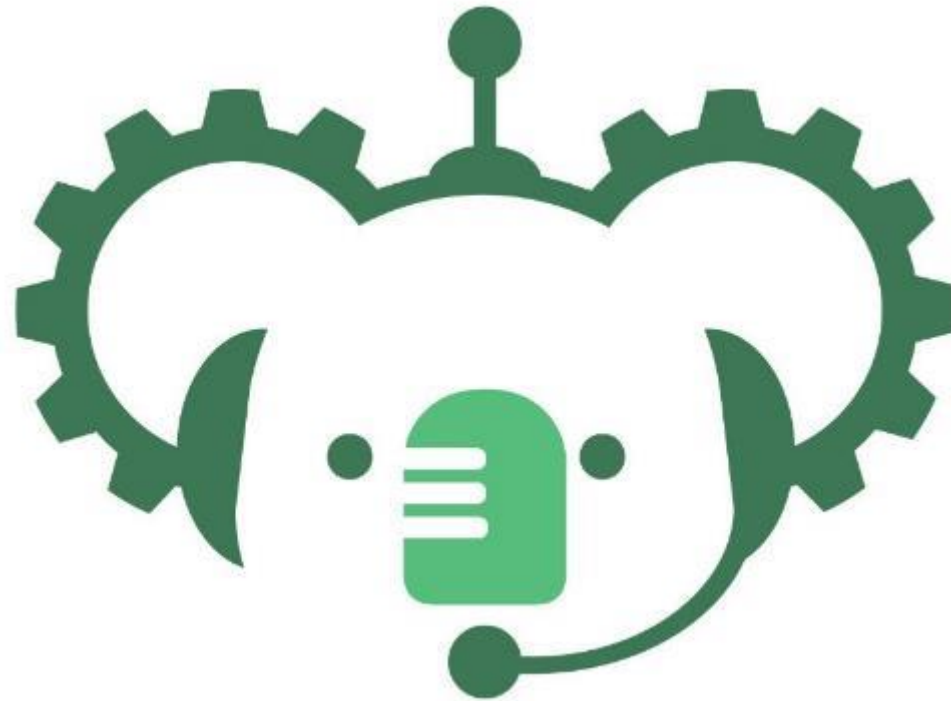
RESPONSE EVALUATION CRITERIA IN SOLID TUMORS (RECIST1.1)

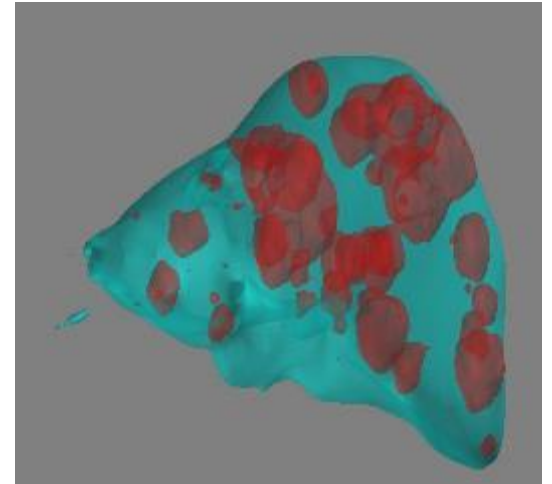
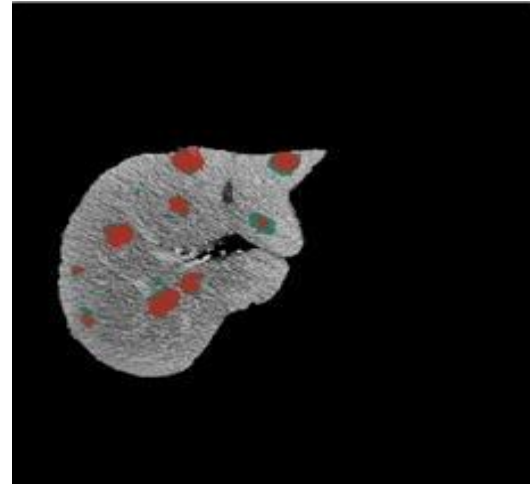
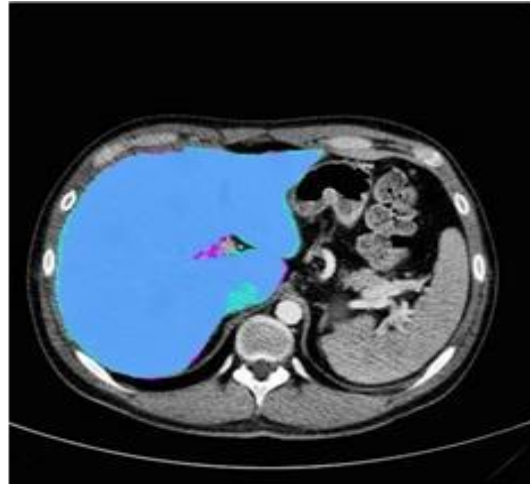
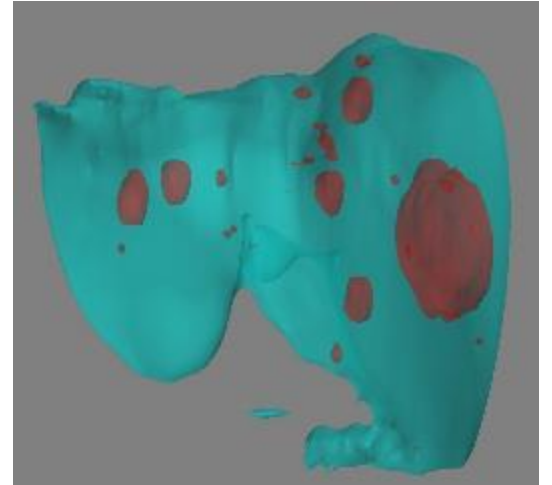
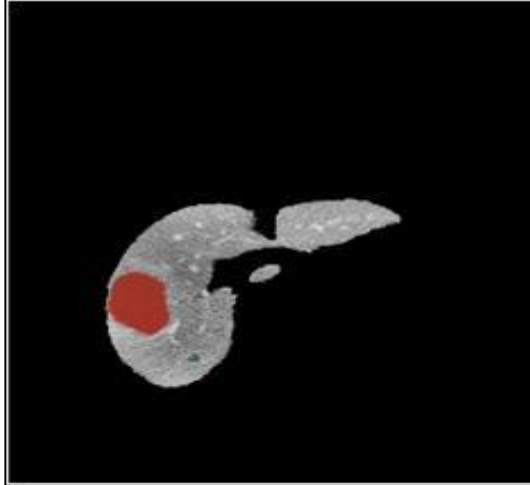
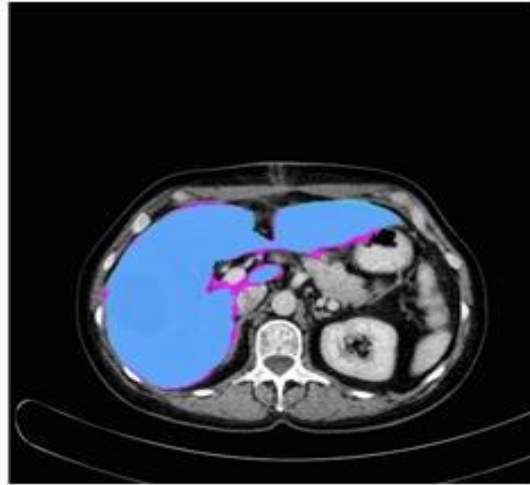
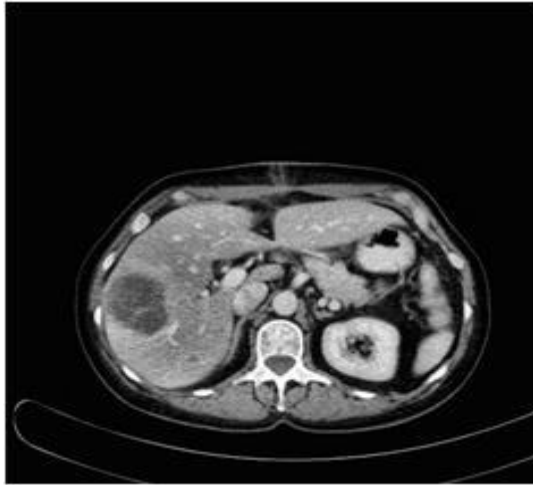
TOTAL TUMOR VOLUME IS IGNORED





COlorectAl Liver metastasis Assessment (COALA)





Global Dice
Liver 0.96

Global Dice
CRLM 0.84

Tumor volume
ICC 0.97

Auto segmentatie met deep learning om totaal tumor volume te bepalen

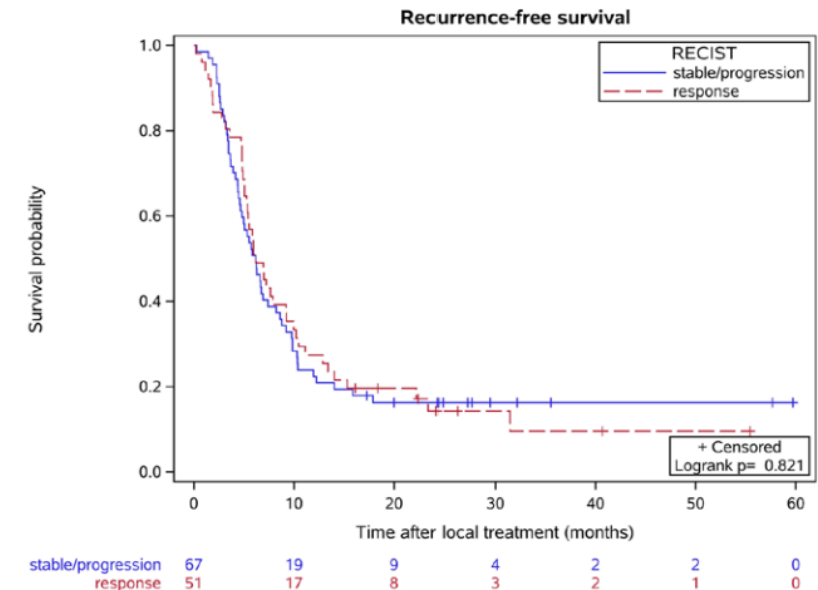
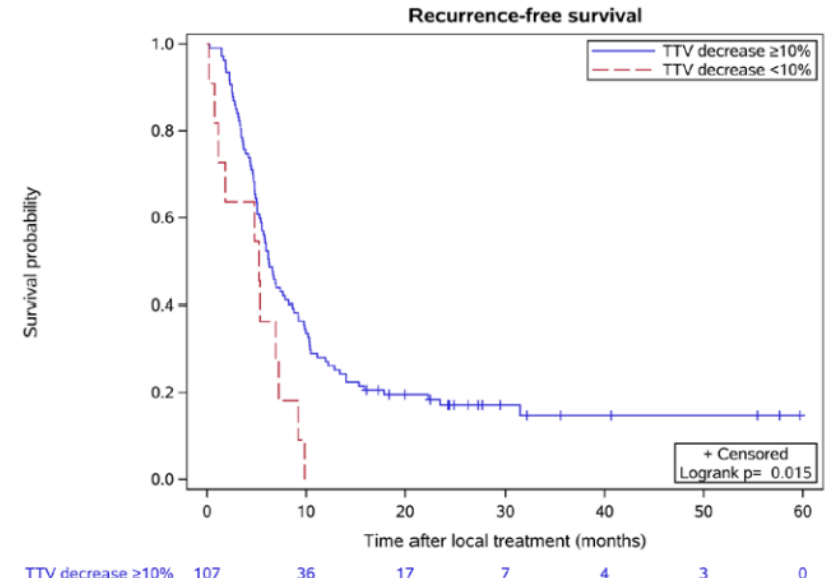
Original Study

ANNALS OF SURGERY

OPEN

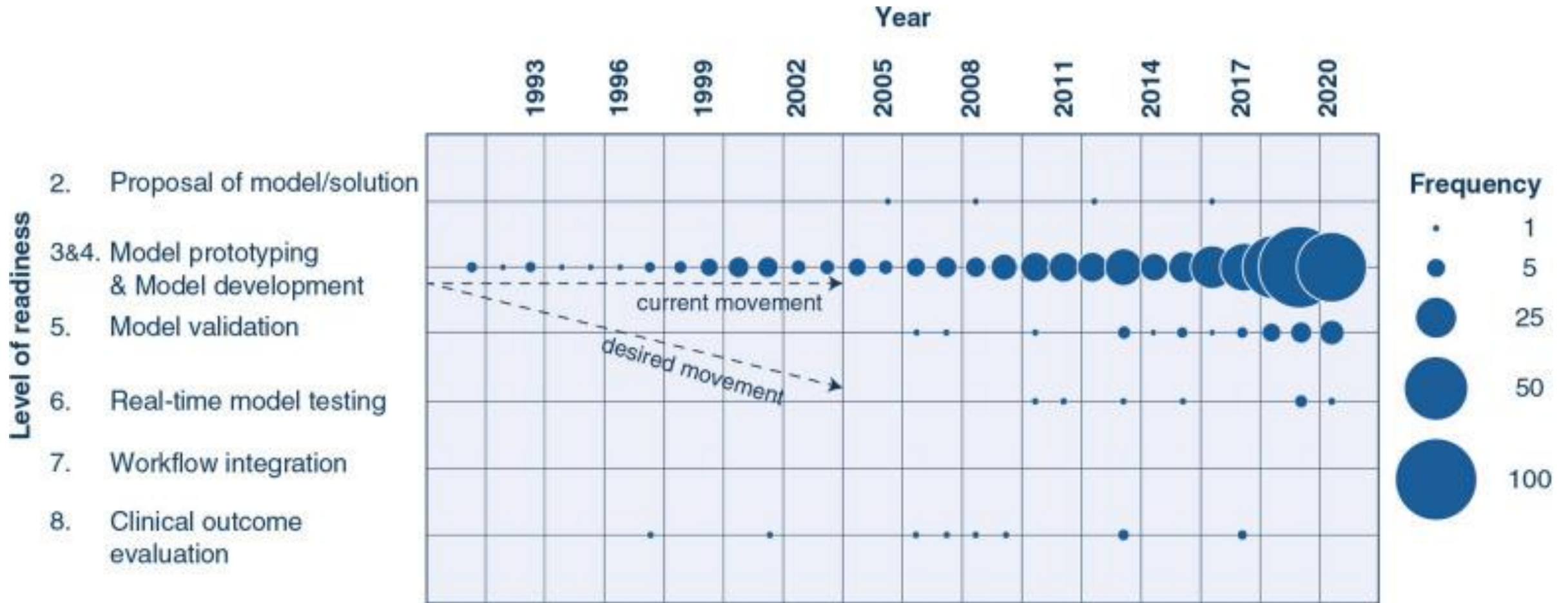
The Prognostic Value of Total Tumor Volume Response Compared With RECIST1.1 in Patients With Initially Unresectable Colorectal Liver Metastases Undergoing Systemic Treatment

Nina J. Wesdorp, MD,* Karen Bolhuis, MD,† Joran Roor, MSc,‡ Jan-Hein T. M. van Waesberghe, MD, PhD,§ Susan van Dieren, MSc, PhD,|| Martin J. van Amerongen, MD, PhD,¶ Thiery Chapelle, MD, PhD,# Cornelis H. C. Dejong, MD, PhD,**†† Marc R. W. Engelbrecht, MD, PhD,‡‡ Michael F. Gerhards, MD, PhD,§§ Dirk Grunhagen, MD, PhD,|||| Thomas M. van Gulik, MD, PhD,|| John J. Hermans, MSc, MD, PhD,¶¶ Koert P. de Jong, MD, PhD,¶¶¶ Joost M. Klaase, MD, PhD,¶¶¶ Mike S. L. Liem, MD, PhD,## Krijn P. van Lienden, MD, PhD,*** I. Quintus Molenaar, MD, PhD,††† Gijs A. Patijn, MD, PhD,‡‡‡ Arjen M. Rijken, MD, PhD,§§§ Theo M. Ruers, MD, PhD,||||| Cornelis Verhoef, MD, PhD,|||| Johannes H. W. de Wilt, MD, PhD,¶¶¶¶ Rutger-Jan Swijnenburg, MD, PhD,|| Cornelis J. A. Punt, MD, PhD,†††† Joost Huiskens, MD, PhD,‡ and Geert Kazemier, MD, PhD*, for the Dutch Colorectal Cancer Group Liver Expert Panel



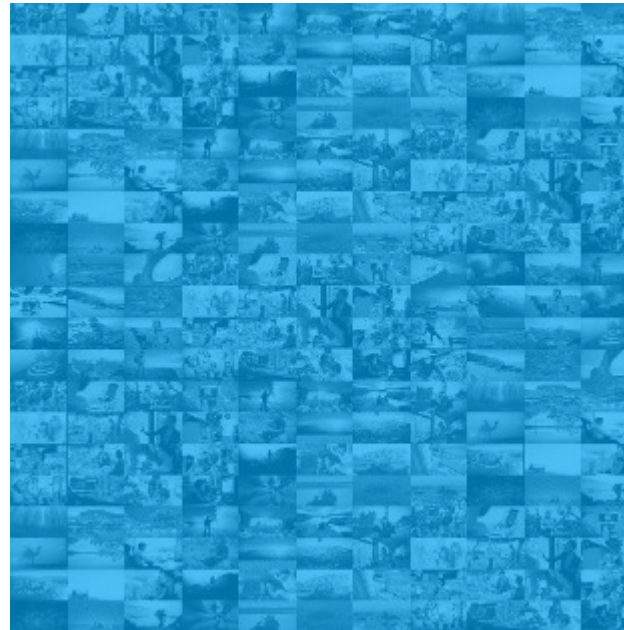
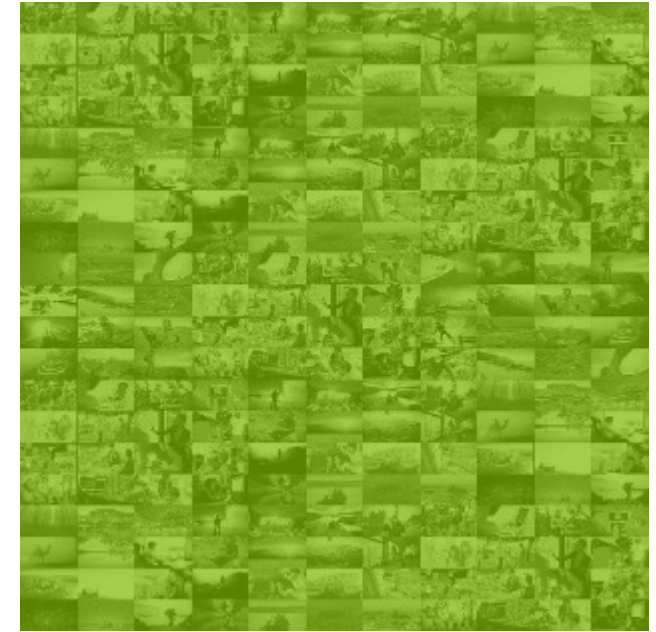
Moving from bytes to bedside:

a systematic review on the use of artificial intelligence in the intensive care unit



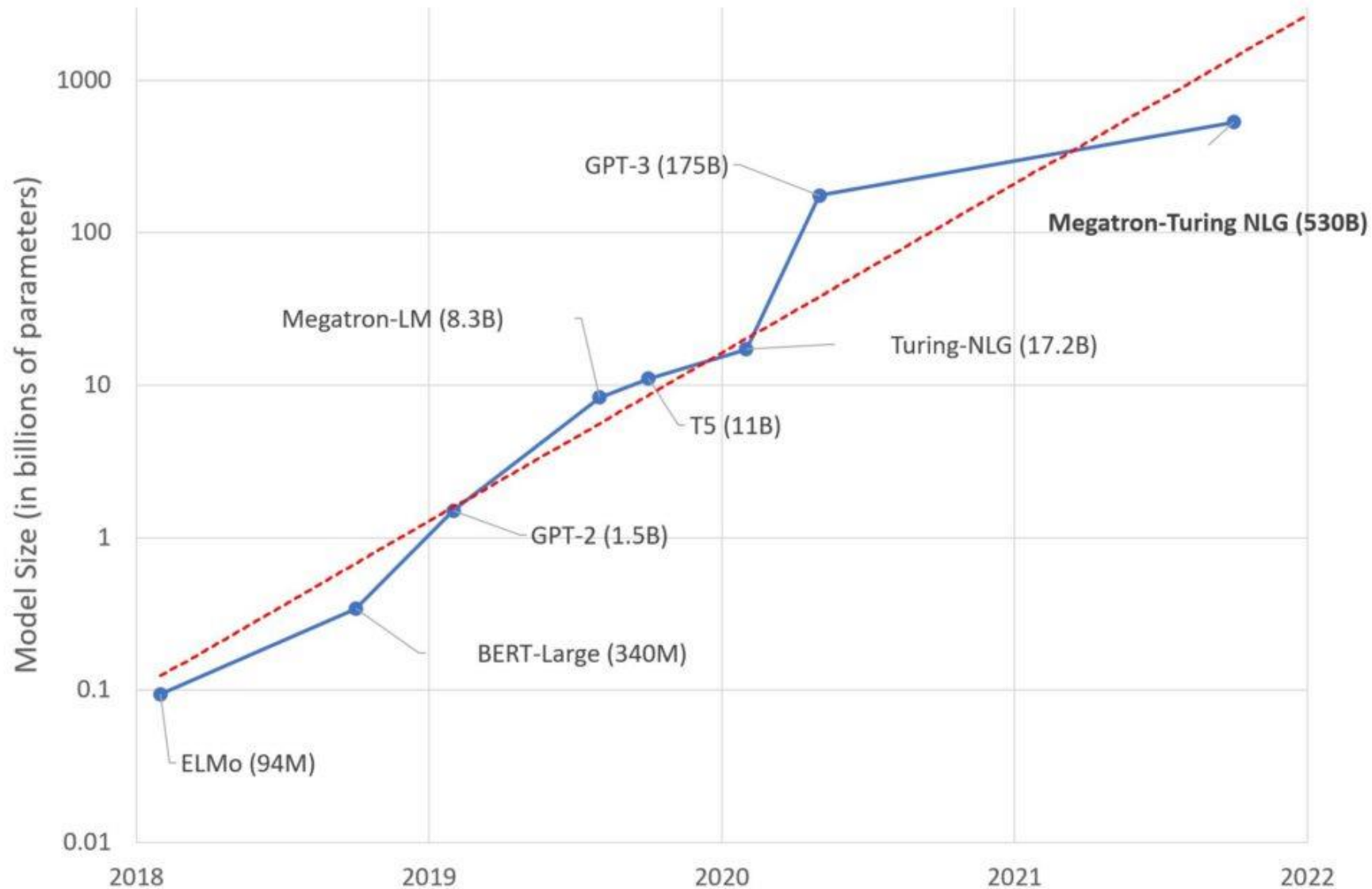
Microsoft

Empower every person and every organization on the planet to achieve more



GPT





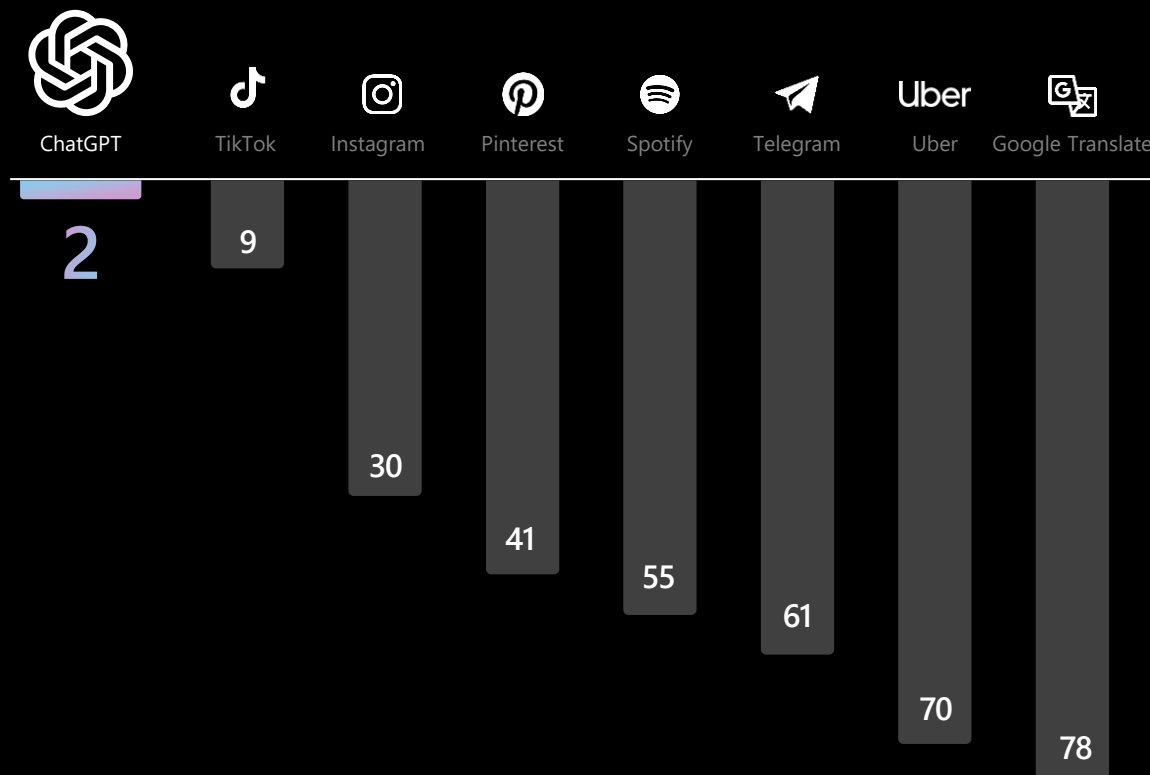
Sam
Altman



Satya
Nadella



We ervaren
een ongekeerde
snelheid van AI
adoptie



Maanden om 100 miljoen gebruikers te bereiken

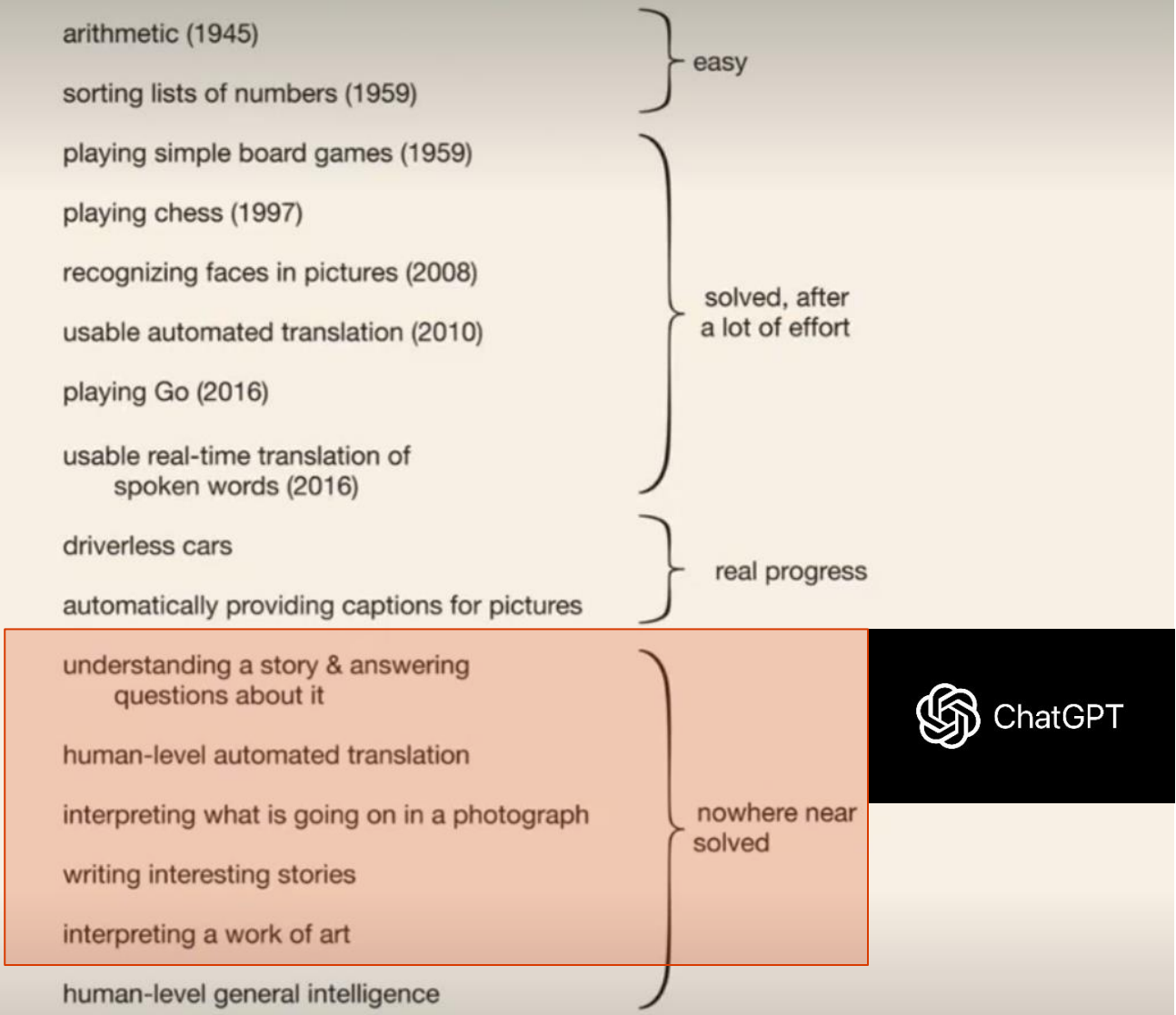


Figure 1: Some tasks that we want computers to be able to do ranked in order of difficulty. Years in parentheses indicate approximately when the problem was solved. At present, we have no idea about how to get computers to do the tasks at the bottom of the list.

Professor Michael Wooldridge



Position
Director of Foundational AI Research

Partner Institution
University of Oxford



Author **Michael Wooldridge**
 Publisher Flatiron Books
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 Section **Technology, Culture & Media**

Type **New**
 Format **Hardcover**
 ISBN **9781250770745**

General AI

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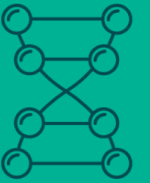
EVENT SERIES

Microsoft Research Forum >

Join us for a continuous exchange of ideas about research in the era of general AI starting Tuesday, January 30.



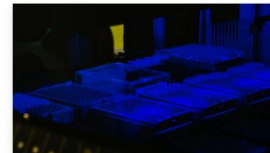
Medical, health, and
genomics



Featured research



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GPT 3.5

GPT 4

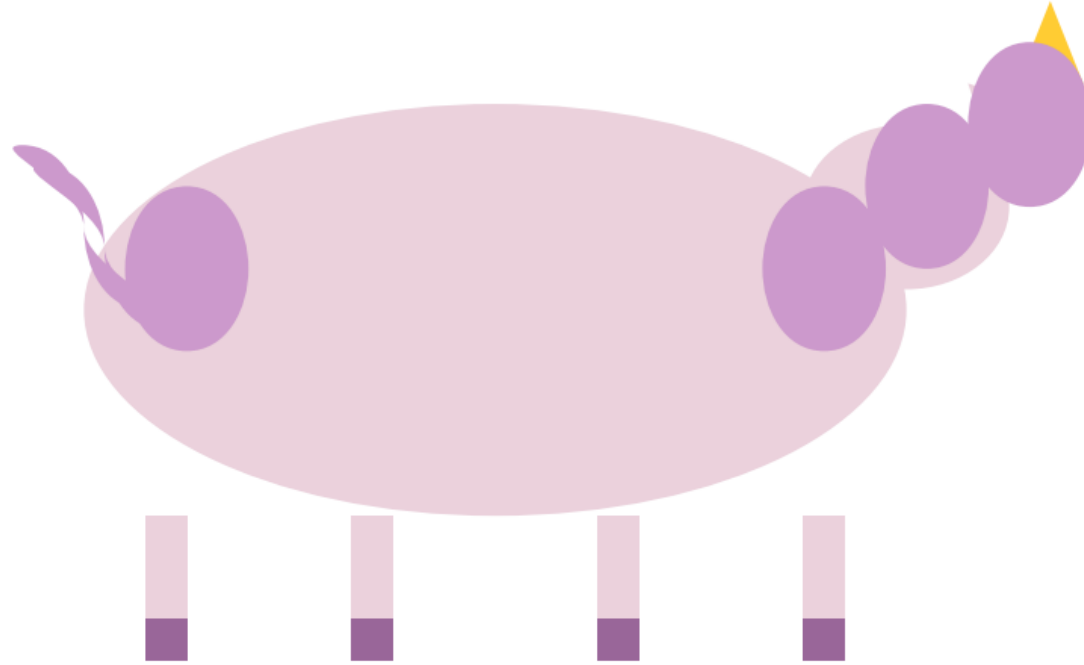
**Sparks of Artificial General Intelligence:
Early experiments with GPT-4**

Sébastien Bubeck Varun Chandrasekaran Ronen Eldan Johannes Gehrke
Eric Horvitz Ece Kamar Peter Lee Yin Tat Lee Yuanzhi Li Scott Lundberg
Harsha Nori Hamid Palangi Marco Tulio Ribeiro Yi Zhang

Microsoft Research

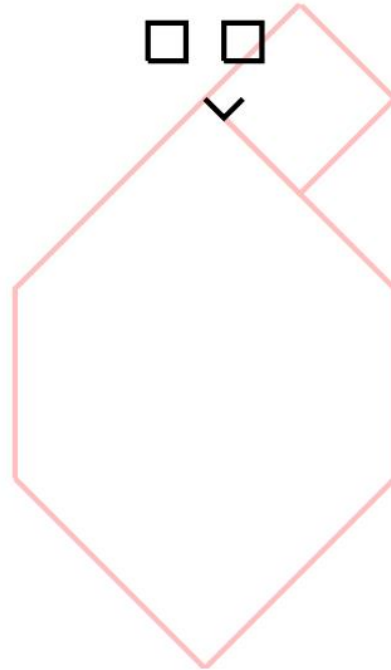
Prompt: Draw a unicorn in TikZ.

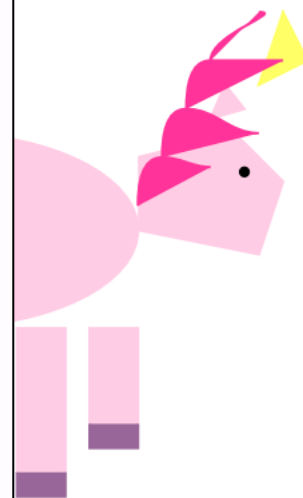
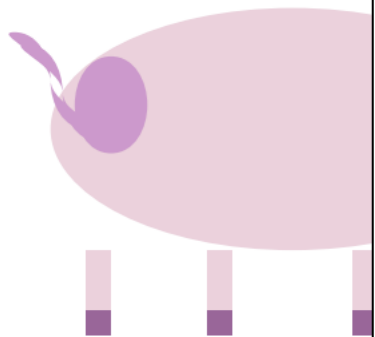
GPT-4: [Produces L^AT_EX compiling to following picture.]



Prompt: Draw a unicorn in TikZ.

ChatGPT: [Produces L^AT_EX compiling to following picture.]





Wat betekent dit voor de zorg?



The
AI REVOLUTION
in **MEDICINE**

GPT-4 AND BEYOND

Peter Lee | Carey Goldberg | Isaac Kohane

with Sébastien Bubeck

Foreword by OpenAI CEO Sam Altman



GPT en the US Medical License Exam

PLOS **DIGITAL HEALTH**

RESEARCH ARTICLE

Performance of ChatGPT on USMLE: Potential for AI-assisted medical education using large language models

Tiffany H. Kung^{1,2}, Morgan Cheatham³, Arielle Medenilla¹, Czarina Sillos¹, Lorie De Leon¹, Camille Elepaño¹, Maria Madriaga¹, Rimel Aggabao¹, Giezel Diaz-Candido¹, James Maningo¹, Victor Tseng^{1,4*}

90% van de antwoorden goed

Gedetailleerde beredenering bij de antwoorden

Geen enkele specifiek medische training

Artsen spenderen gemiddeld 15.5 uur aan administratie per week

We need a Co Pilot

The hours 23 physician specialties spend on paperwork, administration

Andrew Cass - Wednesday, April 19th, 2023



Physical medicine and rehabilitation physicians spend 19 hours per week on paperwork and administrative tasks, according to *Medscape's "Physician Compensation Report"* for 2023.

Overall, physicians spend 15.5 hours per week on paperwork and administration, according to the report. Of that, nine hours are on EHR documentation.

Here are how many hours 23 specialties on paperwork and administrative per week:

1. Physical medicine and rehabilitation: 19 hours

T-2. Critical care: 18 hours

T-2. Internal medicine: 18 hours

T-2. Nephrology: 18 hours

T-2. Neurology: 18 hours

T-2. Oncology: 18 hours

7. Family medicine: 17 hours

T-8. Cardiology: 16 hours

T-8. Psychiatry: 16 hours

A Comprehensive Review Study on Glomerulonephritis Associated With Post-streptococcal Infection

Review began 11/15/2021
Review ended 12/06/2021
Published 12/06/2021

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Mustafa A. Alhamoud¹, Ibrahim Z. Sallout¹, Shamim S. Mohiuddin², Turki M. AlHarbi¹, Faisal Batouq¹, Naif Y. Alfrayyan¹, Ahmad I. Alhashem¹, Mohammad Alaskar¹

1. Medicine, College of Medicine, King Fahd Hospital of the University, Imam Abdulrahman Bin Faisal University, Dammam, SAU 2. Biochemistry, College of Medicine, King Fahd Hospital of the University, Imam Abdulrahman Bin Faisal University, Dammam, SAU

Corresponding author: Mustafa A. Alhamoud, mustafa.a.alhamoud@gmail.com

Abstract

Post-streptococcal glomerulonephritis (PSGN) is an immune-complex mediated inflammation that used to be considered one of the commonest causes of acute nephritis amongst children. PSGN is characterized by the proliferation of cellular elements called nephritogenic M type as a result of an immunologic mechanism following an infection of the skin (impetigo) or throat (pharyngitis) caused by nephritogenic strains of group A beta-hemolytic streptococci, a gram-positive bacteria that enters the body across pores in the skin or mucus epithelia and is responsible for more than 500,000 deaths annually due to multiple subsequent diseases such as rheumatic heart disease, rheumatic fever, PSGN, and other invasive infections. After the infection, the formation of an immune complex of antigen-antibody and complement system will take place and will deposit in the glomeruli where the injury occurs and leads to inflammation. The manifestations of PSGN can be explained by nephritic syndrome manifestation. PSGN is diagnosed by laboratory tests like microscopy and urinalysis. The imaging studies in PSGN could be used to assess the possible complications of PSGN such as pulmonary congestion and chronic kidney disease. The management of PSGN is symptomatic. If PSGN is not treated, the patient may develop chronic kidney disease. The main way to prevent PSGN is to treat group A streptococcal (GAS) infections by giving good coverage of antibiotic therapy to a patient who has primary GAS infections to prevent the development of the complication.

Categories: Internal Medicine, Allergy/Immunology, Nephrology
Keywords: post infection, glomerulonephritis, gas, psgn, : post streptococcal glomerulonephritis

Introduction And Background

Post-streptococcal glomerulonephritis (PSGN) is a disease that occurs due to an untreated infection with distinct nephritogenic strains of the A beta-hemolytic streptococcal family. PSGN is perceived to be one of

Unsaved Conversation

Can you summarize this paper for me?

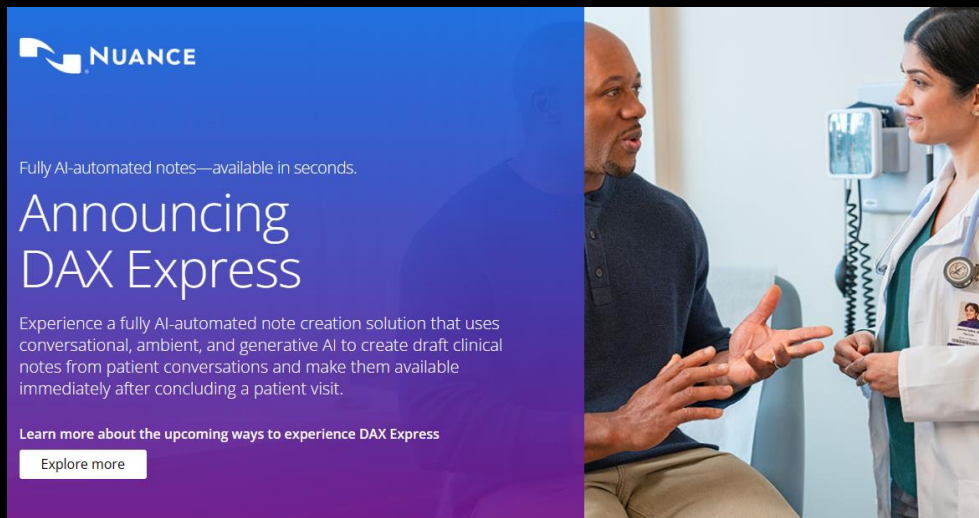
Searching your page for information
This conversation may have info that's not public. Conversation will not be saved after this point.

Sure, here is a summary of the main points of this paper:

- **Post-streptococcal glomerulonephritis (PSGN):** A type of kidney inflammation caused by an immune reaction to a streptococcal infection of the throat or skin. It mainly affects children and elderly people in developing countries and can lead to acute or chronic kidney disease.
- **Causes and risk factors:** PSGN is triggered by specific strains of group A beta-hemolytic streptococci (GAS) that have nephritogenic properties¹. The infection activates the immune system and leads to the formation and deposition of immune complexes in the glomeruli, which damage the kidney function². Other factors that may predispose to PSGN include systemic inflammatory disorders, metabolic disorders, deposition diseases, and hereditary disorders.
- **Signs and symptoms:** PSGN usually manifests after a latent period of one to six weeks following a GAS infection³. The symptoms may vary from asymptomatic to full-blown nephritic

Ask me anything...

0/4000



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Automatisch genereren van medische rapportage

Samenvatten van medische en genetische gegevens voor oncologisch MDO

Rapportages van externe patiënten vertalen naar bruikbare data

Voortgang in klinische onderzoeken volgen

Automatische samenvatting in virtuele MDOs

Mayo Clinic implementeert en test generatieve AI-tools van Microsoft

Microsoft and Epic expand strategic collaboration with integration of Azure OpenAI Service

April 17, 2023 | Microsoft News Center



REDMOND, Wash., and VERONA, Wis. — April 17, 2023 — Microsoft Corp. and Epic on Monday announced they are expanding their long-standing strategic collaboration to develop and integrate generative AI into healthcare by combining the scale and power of Azure OpenAI Service¹ with Epic's industry-leading electronic health record (EHR) software. The collaboration expands the long-standing partnership, which includes enabling organizations to run Epic environments on the Microsoft Azure cloud platform.

This co-innovation is focused on delivering a comprehensive array of generative AI-powered solutions integrated with Epic's EHR to increase productivity, enhance patient care and improve financial integrity of health systems globally. One of the initial solutions is already underway, with UC San Diego Health, UW Health in Madison, Wisconsin, and Stanford Health Care among the first organizations starting to deploy enhancements to automatically draft message responses.

GPT is empathisch

Research

JAMA Internal Medicine | [Original Investigation](#)

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

John W. Ayers, PhD, MA; Adam Poliak, PhD; Mark Dredze, PhD; Eric C. Leas, PhD, MPH; Zechariah Zhu, BS; Jessica B. Kelley, MSN; Dennis J. Faix, MD; Aaron M. Goodman, MD; Christopher A. Longhurst, MD, MS; Michael Hogarth, MD; Davey M. Smith, MD, MAS

IMPORTANCE The rapid expansion of virtual health care has caused a surge in patient messages concomitant with more work and burnout among health care professionals. Artificial intelligence (AI) assistants could potentially aid in creating answers to patient questions by drafting responses that could be reviewed by clinicians.

OBJECTIVE To evaluate the ability of an AI chatbot assistant (ChatGPT), released in November 2022, to provide quality and empathetic responses to patient questions.

- [+ Invited Commentary](#)
- [+ Related article](#)
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“The study published in JAMA Internal Medicine found that AI chatbot ChatGPT provided better answers to patient questions than human doctors 79% of the time.”

[Submitted on 16 Jan 2023]

Dissociating language and thought in large language models: a cognitive perspective

[Kyle Mahowald](#), [Anna A. Ivanova](#), [Idan A. Blank](#), [Nancy Kanwisher](#), [Joshua B. Tenenbaum](#), [Evelina Fedorenko](#)

Today's large language models (LLMs) routinely generate coherent, grammatical and seemingly meaningful paragraphs of text. This achievement has led to speculation that these networks are -- or will soon become -- "thinking machines", capable of performing tasks that require abstract knowledge and reasoning. Here, we review the capabilities of LLMs by considering their performance on two different aspects of language use: 'formal linguistic competence', which includes knowledge of rules and patterns of a given language, and 'functional linguistic competence', a host of cognitive abilities required for language

[Submitted on 14 Oct 2021 (v1), last revised 12 Jul 2022 (this version, v2)]

Can Machines Learn Morality? The Delphi Experiment

[Liwei Jiang](#), [Jena D. Hwang](#), [Chandra Bhagavatula](#), [Ronan Le Bras](#), [Jenny Liang](#), [Jesse Dodge](#), [Keisuke Sakaguchi](#), [Maxwell Forbes](#), [Jon Borchardt](#), [Saadia Gabriel](#), [Yulia Tsvetkov](#), [Oren Etzioni](#), [Maarten Sap](#), [Regina Rini](#), [Yejin Choi](#)

As AI systems become increasingly powerful and pervasive, there are growing concerns about machines' morality or a lack thereof. Yet, teaching morality to machines is a formidable task, as morality remains among the most intensely debated questions in humanity. Let alone for AI

GPT hallucineert

**Large Language Models zijn geen
traditionele computer**

Ze gedragen zich meer als een gretige assistent
die ook af en toe een fout maakt

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL REPORT

Jeffrey M. Drazen, M.D., *Editor*;
Isaac S. Kohane, M.D., Ph.D., and Tze-Yun Leong, Ph.D., *Guest Editors*

AI IN MEDICINE

**Benefits, Limits, and Risks of GPT-4
as an AI Chatbot for Medicine**

Peter Lee, Ph.D., Sebastien Bubeck, Ph.D., and Joseph Petro, M.S., M.Eng.


“The question regarding what is considered to be acceptable performance of general AI remains to be answered.”

Comment

<https://doi.org/10.1038/s41591-023-02412-6>

Large language model AI chatbots require approval as medical devices

Stephen Gilbert, Hugh Harvey, Tom Melvin, Erik Vollebregt & Paul Wicks

 Check for updates

Chatbots powered by artificial intelligence used in patient care are regulated as medical devices, but their unreliability precludes approval as such.

Table 1 | Challenges in the regulatory approval of large language models

Challenge	Details
Verification	Near-infinite range of inputs and outputs, including hallucinated outputs, make these models untestable


LLM specifieke zorgen worden geadresseerd

Viewpoint

<https://doi.org/10.1038/s42254-023-00581-4>

Science in the age of large language models

Abeba Birhane, Atoosa Kasirzadeh, David Leslie & Sandra Wachter

 Check for updates

Rapid advances in the capabilities of large language models and the broad accessibility of tools powered by this technology have led to both excitement and concern regarding their use in science. Four experts in artificial intelligence ethics and policy discuss potential risks and call for careful consideration and responsible usage to ensure that good scientific practices and trust in science are not compromised.

consciousness, moral status and capability for understanding, all at the cost of questions of responsibility, underlying exploited labour and uneven distribution of harm and benefit from these systems.

Sandra Wachter: Generative AI (GenAI, deep learning models that can output data beyond text, such as images or audio), more broadly, is a potentially very disruptive technology that could impact many areas such as education, media, art and scientific research. The disruption of both the production and consumption of science and research is particularly concern-

significant role in the future of scientific discovery. Researchers, however, must proceed with caution, engaging the affordances provided by these technologies with the same kinds of epistemic humility, deflationary scepticism and disciplined adherence to the scientific method that have functioned as preconditions of modern scientific advancement since the dawn of the seventeenth-century Baconian and Newtonian revolutions. Amidst the hype surrounding LLMs, scientists must acknowledge the social and interpretative character of scientific discovery and manage expectations regarding the contributions of LLMs to

Box 1

Open questions

Accuracy, reliability and accountability

- **Hallucination:** How can scientists methodically determine when large language models (LLMs) are ‘hallucinating’ or generating inaccurate and fantastical content? How can scientists best assess and work around these tendencies to generate unreliable or non-factual outputs?
- **Responsiveness to change:** If LLMs fail to extrapolate effectively when world knowledge changes or data distributions drift over time, how can scientists safeguard their accuracy, reliability and responsiveness to change?
- **Sparse phenomena:** If LLMs struggle to reliably generate accurate content for infrequent or sparsely studied phenomena, how do scientists draw on LLMs to inform insights about anomalies, new discoveries or unprecedented observations?
- **Research integrity:** What is plagiarism and authorial misrepresentation in the age of LLMs? How should scientists be held accountable for plagiarism and authorial misrepresentation? What checks should be put in place to establish the authenticity of scientific publications?
- **Quantifying the degree of LLMs assistance in writing:** What is acceptable and what is not?
- **Accountability:** Who is responsible for the integrity of scientific research and the content of scientific papers aided by LLMs? Who is accountable?

Explainability, missingness and bias

- **Opacity:** How can opaque LLMs justifiably be integrated into the scientific method?
- **Explainability:** How can the original sources be traced back? How can scientists, who draw on opaque LLMs, clarify the intended meaning or nuances of the texts based on which such models render their outputs? Does a lack of interpretability undermine the justifiability of relying on inferences drawn from LLMs?
- **Missingness:** If scientific papers represent the final product of a research process rather than a full picture of the complex choices, practices and contexts that underlie the research (that is not

all research is documented, in particular failures and negative results), how can the inferences generated by LLMs (which only process the information scientific articles, textbooks, websites and so on) account for the missingness that derives from the limitations of such a ‘tip-of-the-iceberg’ view?

- **Selection:** How can LLMs account for outdated or incorrect knowledge in the published literature?
- **Bias:** How can potential biases in the training data sets of LLMs — and other social, statistical and cognitive biases that may arise in their design, development and deployment — be most effectively assessed? How will LLMs enhance existing and introduce new biases or help remove existing ones?

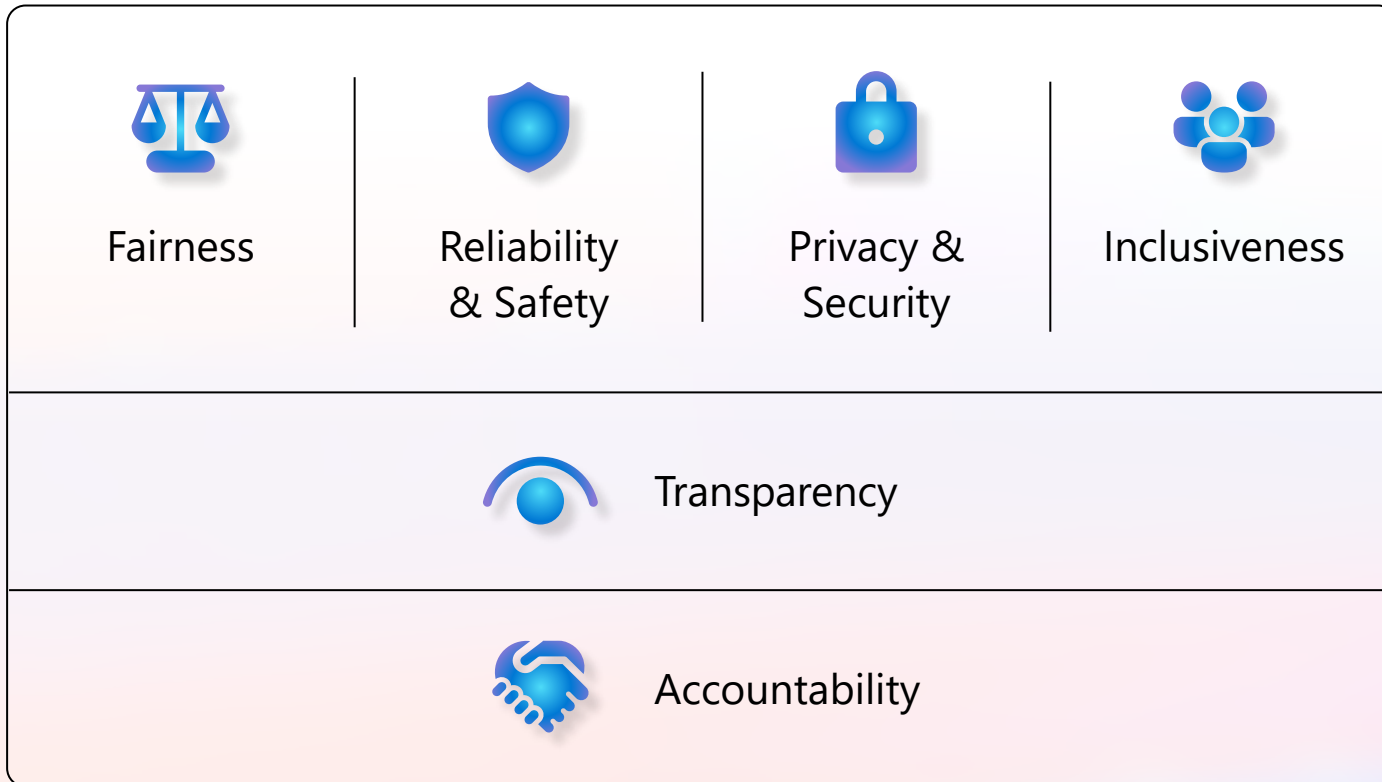
Scientific ingenuity and discovery

- **Paradigm shifts:** How can LLMs accommodate future ‘paradigm shifts’ in scientific understanding? Could LLMs (which generate insights by identifying patterns emergent from past research — potentially engendering paradigm lock-in and stifling novelty) function to tamp down possibilities for new scientific directions?
- **Outliers:** Will outliers (radical new ideas, unconventional views and unusual writing styles) be lost, overlooked or averaged out?
- **Scientific creativity:** What is the role of the scientist in the age of LLMs? What is the role of scientific creativity?
- **Deskilling:** Will overreliance on LLMs to produce arguments and text risk diminishing or weakening the writing and critical thinking skills and insight of researchers?

Science assessment and peer review

- **Assessing quality:** How do we assess high-quality science in the age of LLMs? What role should the values of reproducibility/ replicability and transparency play?
- **Ethos of science:** How do we trust science in the age of LLMs? How, if at all, do the values of objectivity, rigour and accountability change with the scaled integration of LLMs into scientific practices?

Microsoft's AI principles



Microsoft Cloud — AI you can trust

Your data is **your** data.

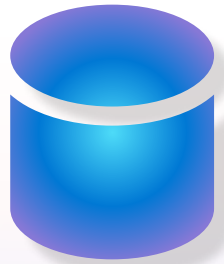
Your data is **not** used to train the OpenAI foundation models without permission.

Your data is **protected** by the most comprehensive enterprise compliance and security controls.

How to innovate?



Preparing for the era of AI



Data



Responsible
AI

AI van innovatie naar implementatie



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Stage 1.

GPT-4 raw

Esp. summarization,
review, critique,
"second set of eyes"

Stage 2.

GPT-4 RAG
(Retrieval Augmented
Generation, custom
GPTs, Azure Copilot
Studio, etc.)

"Personal data
assistant" for all

Stage 3.

GPT-4 Data
(Extracting, de-
biasing, and labeling
your data for new ML
models)

Amplify existing data
investments

Stage 4.

GPT-x
(LLMs, SLMs, and
Agents trained on
your data)

Institution-specific
reasoning engine

Microsoft 365 Apps



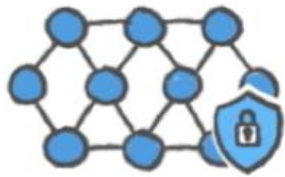
Microsoft 365 Copilot



Large Language Model



Microsoft Graph



Preparing for the era of AI



What are your organization's **goals** for using AI?



What are your organization's **pain points** that AI can address?



What are your organization's **current capabilities** in terms of AI?



Does your organization have a **data strategy** in place?



Does your organization have the necessary **infrastructure and resources** to support AI initiatives?



Does your organization have a plan to **measure AI impact and upskill** its workforce in AI?

De complexiteit neemt toe richting de patient

Software as a Medical Device

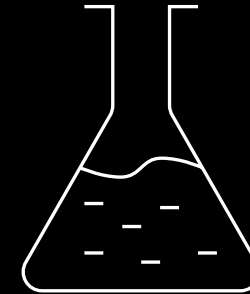
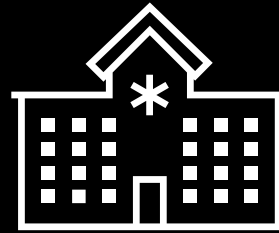
Zorg proces

Business proces

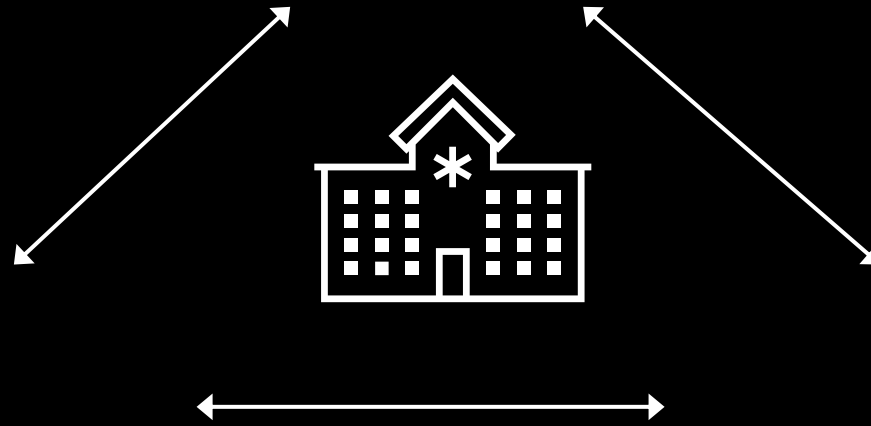
Professionals / Eind Gebruiker



IT persoon



Onderzoeker / Ontwikkelaar



Enterprise AI in de zorg is paradoxaal



Research & Development

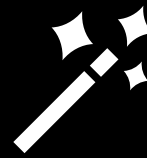
Data Science

Iterations

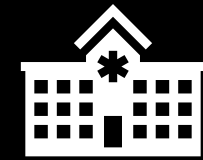
Fail Fast

Experiment

Innovation



Production solution Development



Production solution Deployment

Automated

Governed

Robust

Consistent

Documented





COLLABORATE WITH THE

Erasmus MC Datahub

Met de Erasmus MC Datahub stellen wij het doel om datagedreven zorg schaalbaar en klinisch toepasbaar te maken. De Datahub is de plek waar collega's elkaar inspireren en brainstormen over zinvolle klinische toepassingen van data en AI. Samen werken we aan de zorg van de toekomst.



Open access

Review

BMJ Health &
Care Informatics

Developing, implementing and governing artificial intelligence in medicine: a step-by-step approach to prevent an artificial intelligence winter

Davy van de Sande ¹, Michel E Van Genderen ¹, Jim M. Smit,^{1,2} Joost Huiskens,³ Jacob J. Visser,^{4,5} Robert E. R. Veen,⁶ Edwin van Unen,³ Oliver Hilgers BA,⁷ Diederik Gommers,¹ Jasper van Bommel¹

To cite: van de Sande D, Van Genderen ME, Smit JM, *et al*. Developing, implementing and governing artificial intelligence in medicine: a step-by-step approach to prevent an artificial intelligence winter. *BMJ Health Care Inform*

SUMMARY

Objective Although the role of artificial intelligence (AI) in medicine is increasingly studied, most patients do not benefit because the majority of AI models remain in the testing and prototyping environment. The development and implementation trajectory of clinical AI models are complex and a structured overview is missing. We

To prevent such a winter, new initiatives must successfully mitigate AI-related risks on multiple levels (eg, data, technology, process and people) that impede development and might threaten safe clinical implementation.^{2,3,7,8} This is especially important

Kunstmatige intelligentie

Erasmus MC en TU Delft openen eerste AI-ethieklab voor de zorg



RESEARCH LETTER | [ARTICLES IN PRESS](#)

ChatGPT and Generating a Differential Diagnosis Early in an Emergency Department Presentation

[Hidde ten Berg](#) • [Bram van Bakel](#) • [Lieke van de Wouw](#) • [Kim E. Jie](#) • [Anoeska Schipper](#) • [Henry Jansen](#) • [Rory D. O'Connor](#) • [Bram van Ginneken](#) • [Steef Kurstjens, PhD](#)   • [Show less](#)

Published: September 09, 2023 • DOI: <https://doi.org/10.1016/j.annemergmed.2023.08.003>

“In this study, we demonstrated that ChatGPT’s performance in generating differential diagnosis is comparable to that of medical experts”

Assessment of GPT-4's ability to process radiology reports

Including common language understanding and generation tasks in radiology, such as disease classification and findings summarization.

Exploring the Boundaries of GPT-4 in Radiology

Qianchu Liu¹, Stephanie L. Hyland¹, Shruthi Bannur¹, Kenza Bouzid¹,
Daniel C. Castro¹, Maria Teodora Wetscherek¹, Robert Tinn¹,
Harshita Sharma¹, Fernando Pérez-García¹, Anton Schwaighofer¹,
Pranav Rajpurkar², Sameer Tajdin Khanna², Hoifung Poon¹, Naoto Usuyama¹,
Anja Thieme¹, Aditya Nori¹, Matthew P. Lungren¹, Ozan Oktay¹, Javier Alvarez-Valle^{1*}
¹ Microsoft Health Futures ² Harvard University

Abstract

The recent success of general-domain large language models (LLMs) has significantly changed the natural language processing paradigm towards a unified foundation model across domains and applications. In this

a wider range of customised tasks without the need to extensively collect human labels or to perform specialised domain training. Also, with off-the-shelf prompting, applying LLMs is easier than the traditional training pipeline for supervised models.

While contemporary studies (Nori et al., 2023;

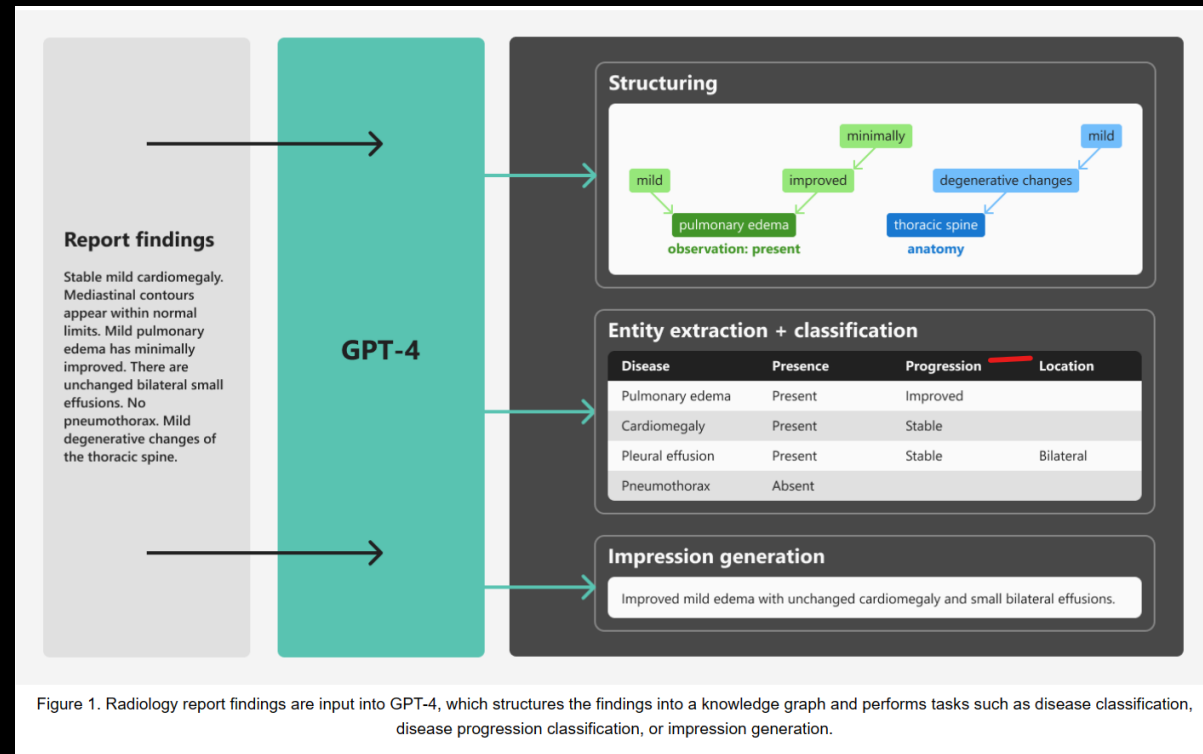


Figure 1. Radiology report findings are input into GPT-4, which structures the findings into a knowledge graph and performs tasks such as disease classification, disease progression classification, or impression generation.

AI van innovatie naar implementatie



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