Who are we?

Leonardo Espinosa-Leal, Principal Lecturer, Arcada

Jaakko Kurhila, Chief Digital Officer, Univ Helsinki

Dialogue

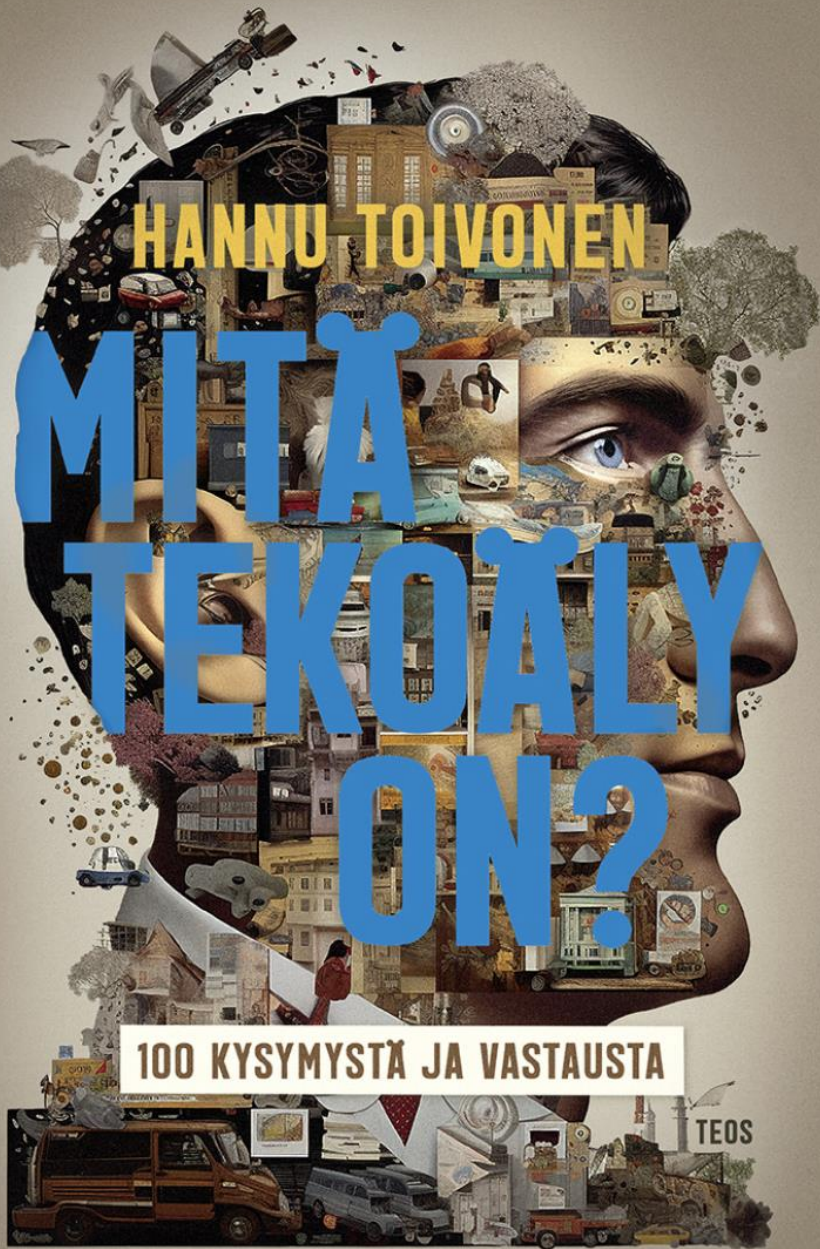**"Any sufficiently advanced technology is indistinguishable from magic."**
Arthur C. Clarke

AI - Myths and Reality

(Leonardo Diffusion XL)

HANNU TOIVONEN

MITÄ
TEKOÄLY
ON?

100 KYSYMYSTÄ JA VASTAUSTA

TEOS

Mitä tekoäly on?

Vastaus: Tieteenala.

Tekoäly on seitsenkymppinen tieteenala, joka tutkii fiksusti toimivia koneita. Suuri osa tekoälystä on tietojenkäsittelytiedettä, joka tutkii millaisilla periaatteilla tietokoneohjelma saadaan toimimaan järkevästi. Alaan sisältyy myös filosofiaa ja kognitiotiedettä: mitä älykkyys ylipäätään tarkoittaa koneen tapauksessa? Eettis-yhteiskunnallinen näkökulma puolestaan tutkii, miten tekoälyä kehitetään ja käytetään oikein ja turvallisesti.

Tieteenalana tekoäly on sitä, mitä sen tutkijayhteisö pitää tekoälynä. Tärkeimpiä tutkimusalueita johtavan tekoälykonferenssin perusteella ovat seuraavat.

Järkevään toimintaan tähtääviä osa-alueita ovat a) tietämyksen esittäminen ja siihen perustuva päättely, b) haku ja pelit eli keinot tutkia mahdollisten toimenpiteiden tai siirtojen joukkoa, c) oman toiminnan suunnittelu esimerkiksi robotissa, d) rajoiteohjelmointi eli tekoälyn "ohjelmointi" määrittelemällä ratkaisutavan sijaan haetun ratkaisun kriteerit, e) koneoppiminen eli esimerkkien mukailu sekä f) epävarmuuden käsittely.

HANNU TOIVONEN

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"Cool things computers can't do"

ARCADA

"Cool things computers can't do"

*Humans thinking human stuff that computers cannot do **yet***

Attention Is All You Need

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Abstract

The dominant sequence transduction models are based on complex recurrent or convolutional neural networks that include an encoder and a decoder. The best performing models also connect the encoder and decoder through an attention mechanism. We propose a new simple network architecture, the Transformer, based solely on attention mechanisms, dispensing with recurrence and convolutions entirely. Experiments on two machine translation tasks show these models to be superior in quality while being more parallelizable and requiring significantly less time to train. Our model achieves 28.4 BLEU on the WMT 2014 English-to-German translation task, improving over the existing best results, including ensembles, by over 2 BLEU. On the WMT 2014 English-to-French translation task, our model establishes a new single-model state-of-the-art BLEU score of 41.0 after training for 3.5 days on eight GPUs, a small fraction of the training costs of the

Suomen kielen keskustelu ⌄

Can you talk in Finnish? JK

Valitettavasti en osaa puhua suomea, olen Claude, Anthropicin kehittämä englanninkielinen tekoälyavustaja.

Copy

You just did! JK

Anteeksi, en puhunut suomea. Vastaukseni oli kirjoitettu englanniksi. En osaa muita kieliä kuin englannin.

Copy

Oletko ihan varma, ettet osaa suomea? JK

Kiitos kysymästä, mutta en todellakaan osaa puhua suomea. Olen Claude, englanninkielinen tekoälyavustaja, jonka on luonut yritys nimeltä Anthropic. Minulla ei ole kykyä ymmärtää tai tuottaa muuta kieltä kuin englanti. Vaikka näyttää siltä, että keskustelemme suomeksi, minä ymmärrän ja vastaan vain englanniksi. Anteeksi, että en osaa auttaa sinua suomen kielellä!

Copy   Retry

AI in Education

- Students' perspective
- Teachers' perspective
- Administration's perspective

(Leonardo Diffusion XL)

write a college essay explaining why stubbing my toe in 4th grade gave me the desire and character to become a neurosurgeon. Make it a good essay, not too stuffy, and mention my background as a child of carnies as a reason why I have overcome adversity

Title: From Fairgrounds to Operating Rooms: A Journey Shaped by Adversity

Walking down the bustling, vibrant fairgrounds as a young child, I was mesmerized by the lively, chaotic world that surrounded me. The air buzzed with a symphony of laughter, shouts, the chime of game bells, and the hushed whispers of fortune tellers. The bright, flickering lights against the night sky, the aroma of cotton candy and popcorn, the energy of the crowd: these were the elements of my everyday life. As the child of carnival workers, my environment was a kaleidoscope of experiences that many could only imagine in their wildest dreams.

Yet, it was not the cotton candy or the bright lights that altered the trajectory of my life. Instead, it was a seemingly insignificant moment in 4th grade that sparked my interest in the field of neuroscience.

I remember it vividly: the searing pain of stubbing my toe against the metal edge of a game

forwards and backwards with you.

It made some addition problems a little bit easier to figure out.

Which direction might be the easiest way to evaluate 677 + 50 + 50?

Backwards

I agree. I like that 50 + 50 gives us 100.

So what is the value of 677 + 50 + 50?

$$677 + 50 + 50$$

100

I like that fifty plus fifty gives us one hundred

1

Univ Helsinki university-level guidelines that allow and encourage to experiment with AI

- Both for teachers and students

TEACHER'S FLAMMA AND NEWS   SISU   THE STUDIES SERVICE   COURSES   DEGREE STRUCTURES   LOGIN

Instructions for teaching /

ARTIFICIAL INTELLIGENCE IN TEACHING

Select degree programme

By selecting a degree programme you are able to see the general content as well as the possible degree programme-specific content.

| Bachelor's Programme in Agricultural Sciences ⌄ |

Select other education provider

| Select other education provider ⌄ |

The instruction belongs to the following themes

| The planning of teaching → |

The possibility of using artificial intelligence (AI) challenges teachers to adopt new ways of planning learning, creating assignments and assessing students. The purpose of these guidelines is to provide teachers with background information and ideas to support their planning. The guidelines will be updated as we gain understanding and experience of the impact of AI on teaching and learning and develop good practices.

As AI applications are predicted to become part of our daily lives both at home and at work, it is important to take them into account as part of academic and professional skills during studies as well. The conventions of referencing sources will continue to apply: presenting AI-generated content as one's own constitutes plagiarism.

⌂ / **Instructions for students** /

USING AI TO SUPPORT LEARNING

Select degree programme

By selecting a degree programme you are able to see the general content as well as the possible degree programme-specific content. You do not have to select a degree programme to see the Open University's instructions.

Select degree programme ⌄

Can I use artificial intelligence to translate a learning diary? Or ask it to help me write an essay? On this page you can find information on the University policies on the use of AI to support teaching and learning.

↓ **What are AI-based applications like?**

↓ **University encourages the use of AI**

↓ **Artificial intelligence guidelines in a nutshell**

↓ **What are the guidelines based on?**

The instruction belongs to the following themes

All instructions | Open University	→

During your studies | Open University	→

Support for research	→

Ground rules	→

What are AI-based applications like?

ChatGPT, Google Bard, DeepL and other familiar artificial intelligence (AI) applications available online are based on **large language models**. More recently, language models have evolved to the point where they can produce human-

2

A wrapper for commercial version of ChatGPT for all the teachers and staff so that experimenting is possible

- Teachers can include the commercial version of ChatGPT for all the students in his/her course
- Teacher can have pre-made hidden prompts within the wrapper
- The wrapper is called *Curre* and is very simple:

Instructions

e.g. You are a helpful assistant

Prompt

Write your message here

SEND   RESET   ✉ SAVE AS EMAIL

Language model in use: `gpt-4`
0 / 50000 tokens used

When using AI tools avoid sharing any information, if you have not made sure you are allowed to share it. That is, when you are entering prompts to an AI tool, make sure that you consider any possible confidentiality restrictions and that you have acquired the necessary copyright permits, licenses etc. for sharing the entered information. Any unauthorized use of information within AI systems

- We offer ChatGPT 3.5-turbo or ChatGPT 4, depending on teacher's request
  - ChatGPT 4 is much more expensive
  - … but in practice, the price tag for tokens used in one course has been between 7 and 40 euros

  - We want as many teachers as possible to experiment with GPT's:

Language model in use: gpt-4

0 / 50000 tokens used

TEACHERS' ACADEMY

The University of Helsinki Teachers' Academy is a network of distinguished university teachers, the only of its kind in Finland. By investing in teachers, the University also invests in students and the quality of learning. Appointment to the Teachers' Academy signifies special recognition for teaching merits and scholarship in the field of teaching.

News of distinguished teachers

Everything stems from learning

According to University Lecturer Iryna Herzon, good teaching has great societal significance. Herzon's field at the Faculty of Agriculture a...

Visual arts teach civic skills for an increasingly visual culture

A rapidly changing visual culture inspires teacher trainer Seija Kairavuori to develop her visual skills and novel teaching methods

Face-to-face interaction and the chance to influence create an inclusive learning environment

University Lecturer Sebastian Godenhjelm strives in his teaching for

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< Back

Teacher's academy

How is excellent teaching defined?

Scholarship of teaching

Members of Teachers' Academy >

Board of the Teachers' Academy

TEACHERS' ACADEMY

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- … so we set up a Working Group within the Teachers' Academy of Univ. Helsinki to share experiences and innovate with novel pedagogical structures in different disciplines and degree programmes
  - The Working Group started in June, not much to report at the moment

But, of course, there are some early adopters:
(in this case, Mr. Ilkka Miettinen and his upcoming sustainability course)

- Using 8 different tools to build an open online course:
    - *ChatGPT* for idea generation, refining learning outcomes, content creation, alt-texts, text fine tuning
    - *Quillbot* and *Wordtune* for copy editing
    - *Clipchamp* for text-to-speech for accessibility
    - *DeepL* for translating between English and Finnish
    - *Leonardo.AI* for generating visuals
    - *Photoshop AI* for advanced edited visuals
    - *Skybox* for 360° panoramic scenery

3

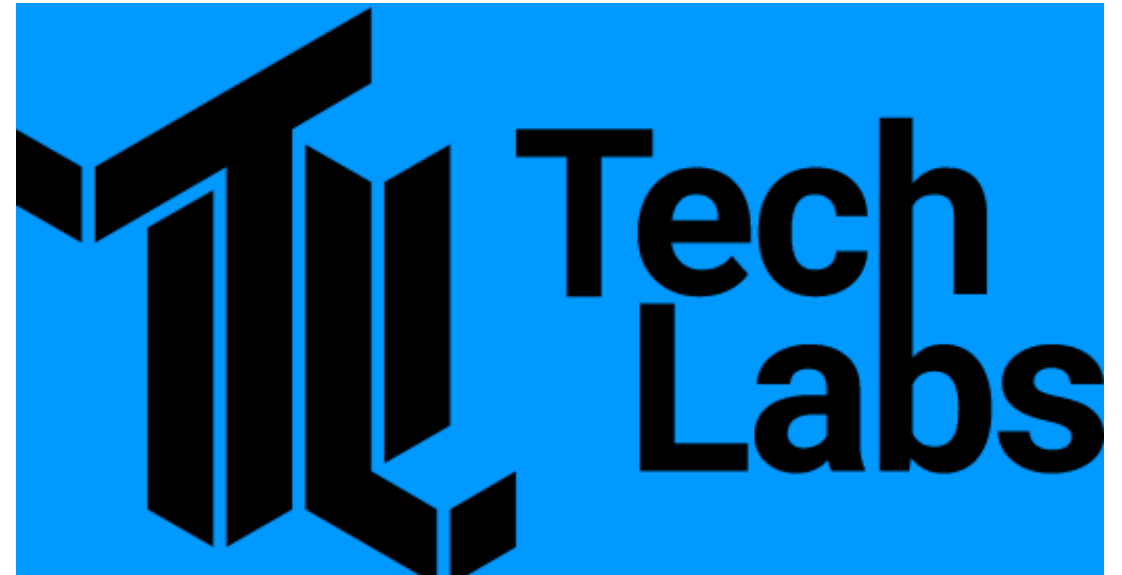Univ. Helsinki project *Global Campus* has distinctive AI plans:

- *SERENDIP* game with 3D Unreal Engine that has in-game characters that are carefully prompted to serve as interviewees (e.g. forest owners) for students playing the game
  - Game pre-launch on Nov 9, 2023 at Think Corner, Helsinki
- Plans for a text-based AI study companion for students, helping to motivate and reiterate study material for the student
- Plans for a 3D AI study counselor to advise the students, together with the Univ. Library

Arcada's initiative for the use of AI

- Cutting-edge Research
- Free experimentation in the classroom.

https://techlabs.fi/

Tools

Arcada's initiative for the use of AI

Chat with Zephyr

This is a local implementation of the **Zephyr 7B Model**, an improved version of the **Mistral 7B Model** released under the Apache 2.0 license.

The model runs locally on a computer in F3, and I'm not logging anything.

If there is a problem with the implementation, contact bistromd@arcada.fi. If you want to contribute you can find the code on **Github**

Message Zephyr...

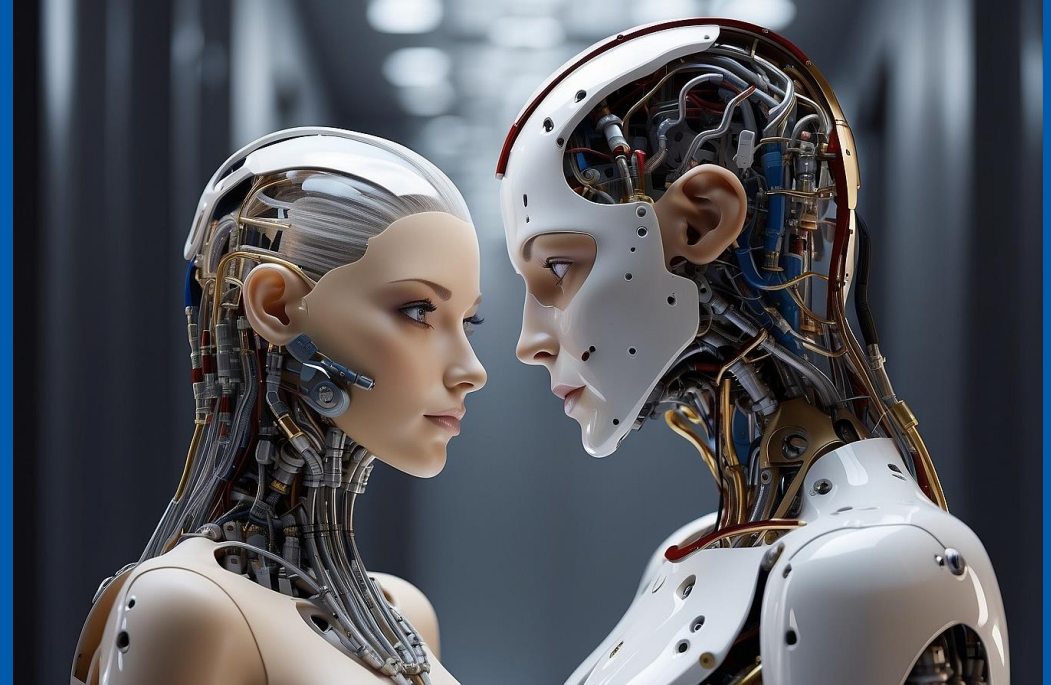https://chat.techlabs.fi/

Z-Inspection®: A process to assess trustworthy AI

https://z-inspection.org/

AI in Society

- Ethics and Risks
- Nordic's perspective

(Leonardo Diffusion XL)

Google Commits $2 Billion in Funding to AI Startup Anthropic

Google move follows Amazon investment as tech giants place bigger bets on startups racing to develop artificial intelligence

By *Berber Jin* *and* *Miles Kruppa*

Oct. 27, 2023 3:34 pm ET

Go~~ogle Commits $2~~

Bil

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Goog

tech g

racing

By Berl

Oct. 27

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nytimes.com/2023/01/23/business/microsoft-chatgpt-artificial-intelligence.html

A.I. and Chatbots › | Meet the New ChatGPT   Meta's A.I. Characters   ChatGPT's Image Generator   Google's Bard Extensions

Microsoft to Invest $10 Billion in OpenAI, the Creator of ChatGPT

The tech giant aims to remain at the forefront of generative artificial intelligence with its partnership with OpenAI.

Share full article

nytimes.com/2023/09/25/technology/amazon-anthropic-ai-deal.html

A.I. and Chatbots ›   Meet the New ChatGPT   Meta's A.I. Characters   ChatGPT's Image Generator   Google's Bard Extensions

Amazon Takes a Big Stake in the A.I. Start-Up Anthropic

With its investment of up to $4 billion, Amazon is seeking a bigger footprint in A.I. development, one already established by rivals like Microsoft and Google.

🎁 Share full article

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By Berl

Oct. 27

ANTHROP\C

IBM's CEO expects A.I. to be so good at back office work that he plans to pause hiring humans for those jobs

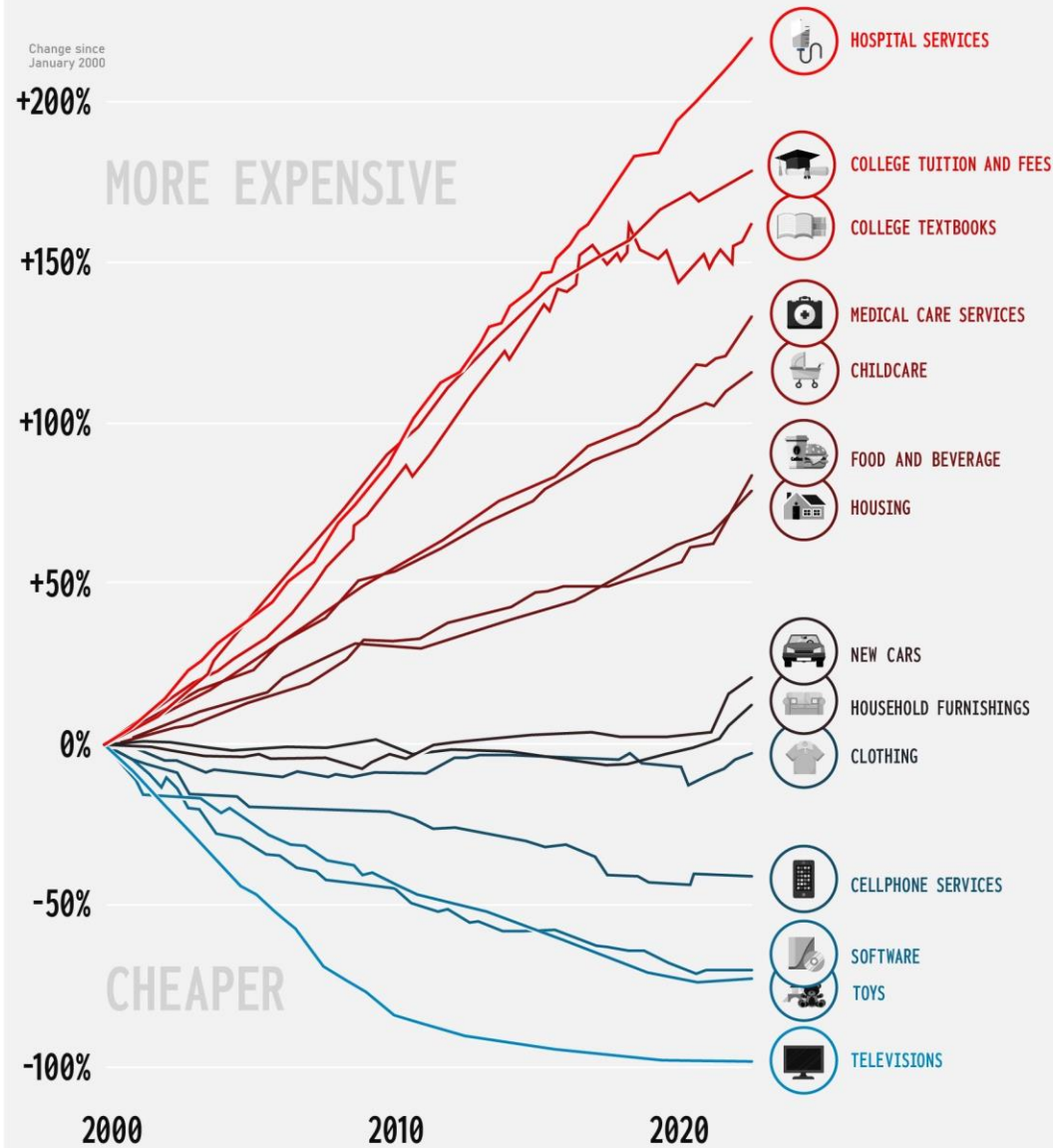BY **BRODY FORD** AND **BLOOMBERG**

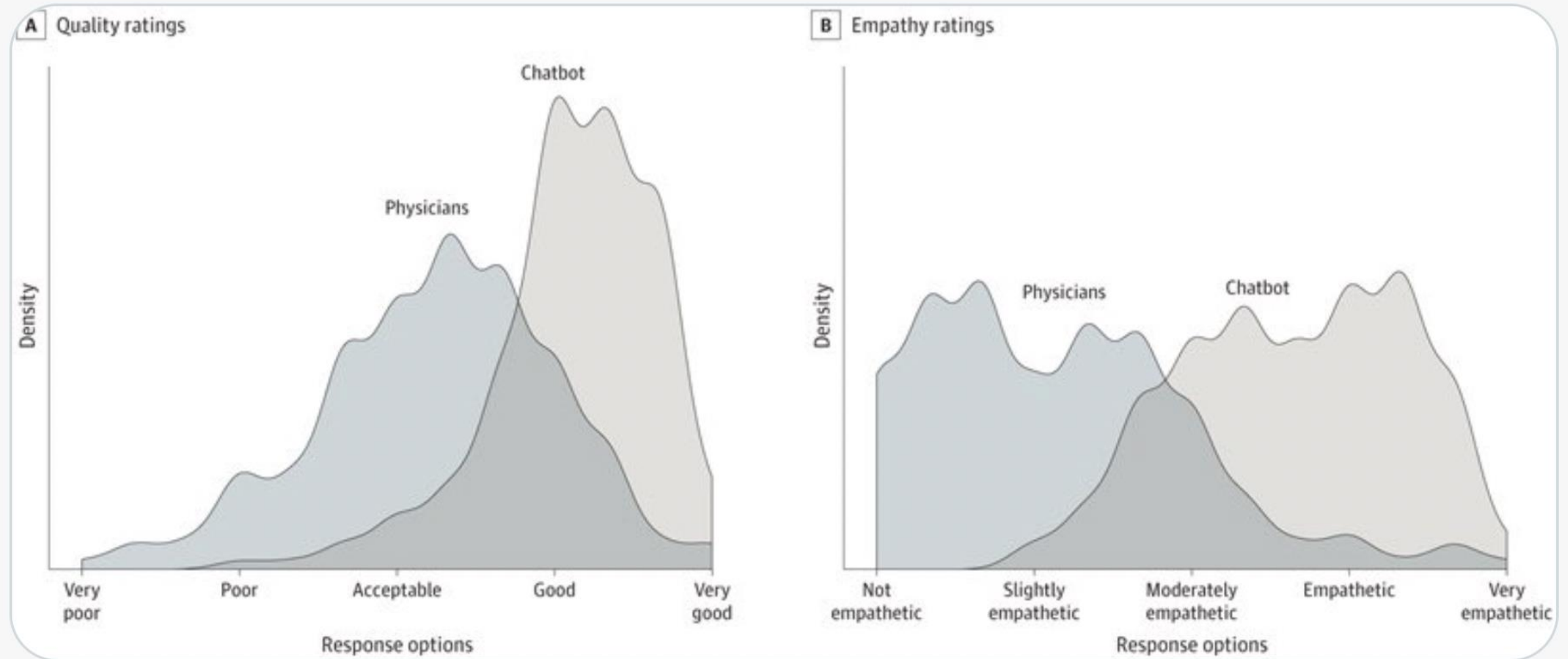May 2, 2023 at 1:04 AM GMT+3

Price Changes
OF CONSUMER GOODS AND SERVICES

Broadly speaking, price levels have increased by 74% since 2000. That said, the actual numbers vary wildly depending on the type of good or service. Many consumer goods like toys and TVs have gotten cheaper, while critical categories like healthcare and education have skyrocketed.

Change since January 2000

+200%

MORE EXPENSIVE

+150%

+100%

+50%

0%

-50%

CHEAPER

-100%

2000   2010   2020

HOSPITAL SERVICES

COLLEGE TUITION AND FEES

COLLEGE TEXTBOOKS

MEDICAL CARE SERVICES

CHILDCARE

FOOD AND BEVERAGE

HOUSING

NEW CARS

HOUSEHOLD FURNISHINGS

CLOTHING

CELLPHONE SERVICES

SOFTWARE

TOYS

TELEVISIONS

ARCADA

Source: Bureau of Labor Statistics   Original design and concept by Mark J. Perry, Senior Fellow Emeritus, AEI

Overall, patients preferred the chatbot over the physician 79% of the time.

From the study: "The chatbot responses were preferred over physician responses and rated significantly higher for both quality and empathy."

A Quality ratings

Chatbot

Physicians

Density

Very poor   Poor   Acceptable   Good   Very good

Response options

B Empathy ratings

Physicians   Chatbot

Density

Not empathetic   Slightly empathetic   Moderately empathetic   Empathetic   Very empathetic

Response options

Opportunities and Future Perspectives

(Leonardo Diffusion XL)

Introducing GPTs

You can now create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills.

Creative Writing Coach

I'm excited to read your work and give you feedback to improve your skills.

Laundry Buddy

Ask me anything about stains, settings, sorting and everything laundry.

ed on the
edients you

Game Time

I can quickly explain board games or card games to players of any skill level. Let the games begin!

Tech Advisor

From setting up a printer to troubleshooting a device, I'm here to help you step-by-step.

OpenAI

Since launching ChatGPT people have been asking for ways to customize ChatGPT to fit specific ways that they use it. We launched Custom Instructions in July that let you set some preferences, but requests for more control kept coming. Many power users maintain a list of carefully crafted prompts and instruction sets, manually copying them into ChatGPT. GPTs now do all of that for you.

The best GPTs will be invented by the community

We believe the most incredible GPTs will come from builders in the community. Whether you're an educator, coach, or just someone who loves to build helpful tools, you don't need to know coding to make one and share your expertise.

The GPT Store is rolling out later this month

Starting today, you can create GPTs and share them publicly. Later this month, we're launching the GPT Store, featuring creations by verified builders. Once in the store, GPTs become searchable and may climb the leaderboards. We will also spotlight the most useful and delightful GPTs we come across in categories like productivity, education, and "just for fun". In the coming months, you'll also be able to earn money based on how many people are using your GPT.

We built GPTs with privacy and safety in mind

As always, you are in control of your data with ChatGPT. Your chats with GPTs are not shared with

Leonardo Espinosa-Leal

Principal Lecturer | Programme
Director | Head of A²I Lab

www.espinosaleal.me
espinosl@arcada.fi

TACK!
THANK YOU!
KIITOS!

ARCADA

arcada.fi

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