

"Ss. Cyril and Methodius" U  
**FACULTY OF COMPUTER  
SCIENCE AND ENGINEERING**

# Integrating AI into EU Widening Countries' Culture and Society:

## Enhancing Awareness for Cognitive Well-being

The ChatMED Project: A Pathway to Health, Technology, and EU Integration



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Why me?





## Why AI? Why Now?

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AI is not just a futuristic concept anymore!



# COGNITIVE WELL-BEING EXPLAINED FROM ENGINEERING PERSPECTIVE



## IMPORTANCE OF COGNITIVE WELL-BEING

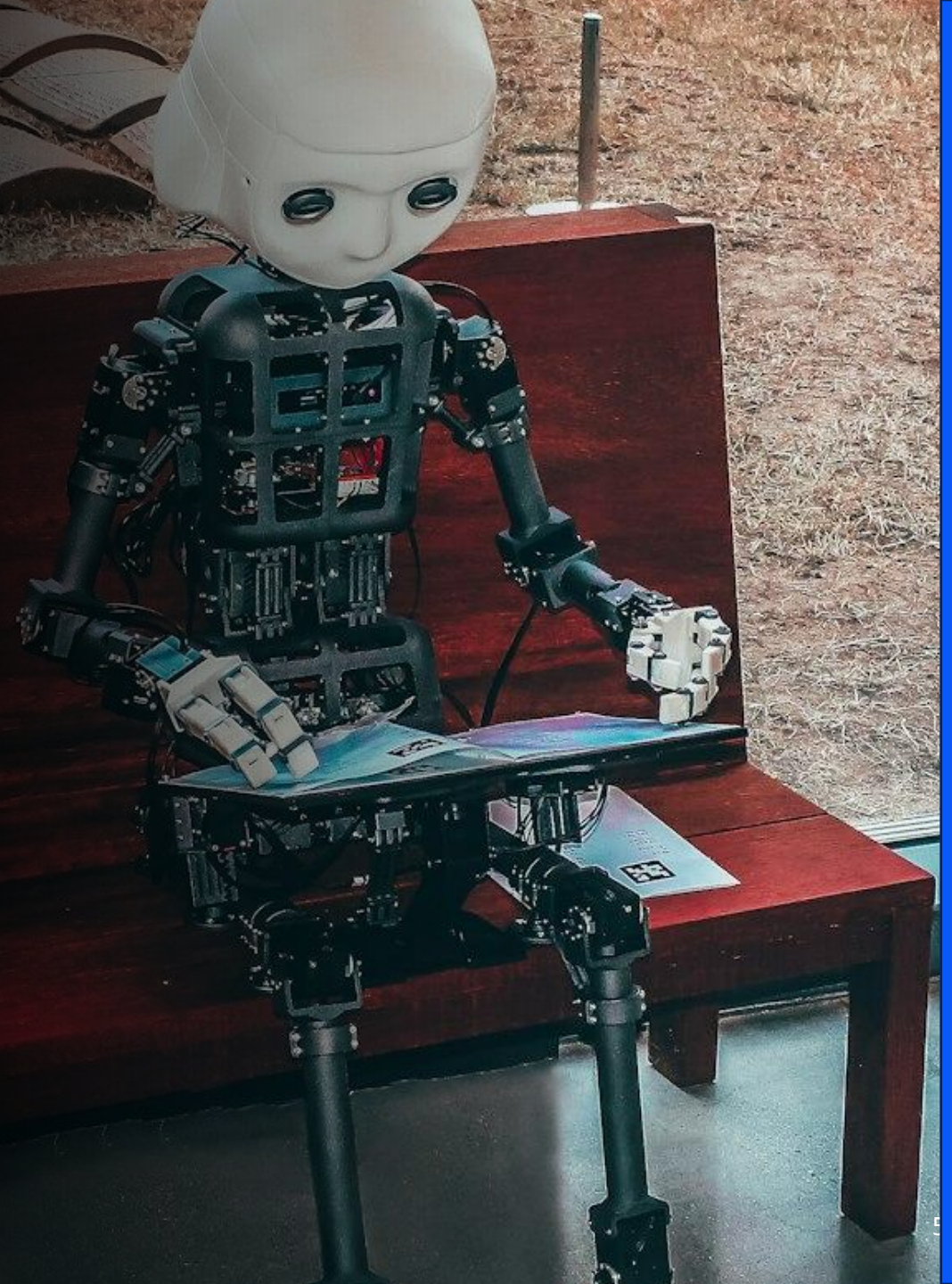
Cognitive well-being encompasses both mental health and neurological functionality, crucial for healthy and aging populations.

Maintaining it is key to preserving autonomy and quality of life.

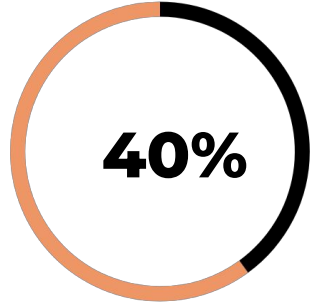
## AI FOR GOOD

AI is transforming lives across the globe.

From mental health tools to automated public services, its benefits are diverse, helping in areas with limited expert resources.

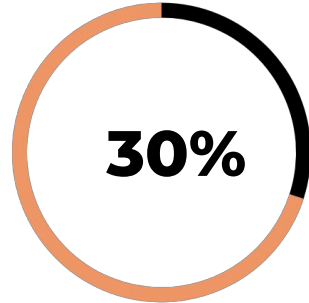


# AI'S FUTURE IN HEALTHCARE NOW



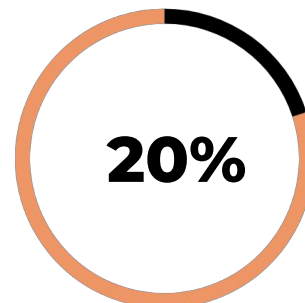
## SUBSTANTIAL COST SAVINGS

AI has the potential to significantly lower healthcare costs, easing financial burdens for health systems.



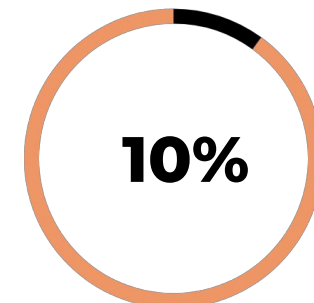
## ENHANCED OPERATION EFFICIENCY

AI applications streamline processes, enhance diagnostics, and optimize patient care.



## EXPANDING REACH

AI can bridge healthcare access gaps, particularly in underserved regions.



## NEW MEDICAL SOLUTIONS

AI fosters the development of innovative treatments and health solutions.

# RESEARCH IMPORTANCE

AI is only as good as the research behind it. Cutting-edge research is what allows us to harness AI for real-world applications.

Research initiatives like Horizon Europe and AI4EU are vital in shaping AI applications in healthcare, focusing on integrating technology with societal needs.

<b>PROJECT NAME</b>	<b>FOCUS AREA</b>	<b>IMPACT</b>
Horizon Europe	AI innovations for healthcare	Enhances AI integration in medical systems
AI4EU	AI applications in society	Connects experts to address societal challenges
EU Robotics	Advances healthcare robotics	Improves service delivery in medical settings

# What does the AI research mean for the countries still working on EU integration?

Rich in culture and history

Significant challenges (engineering perspective):

- infrastructure
- technological development

Opportunity or furthering the gap?



# Where do you want to be?



**With great power comes great responsibility.**

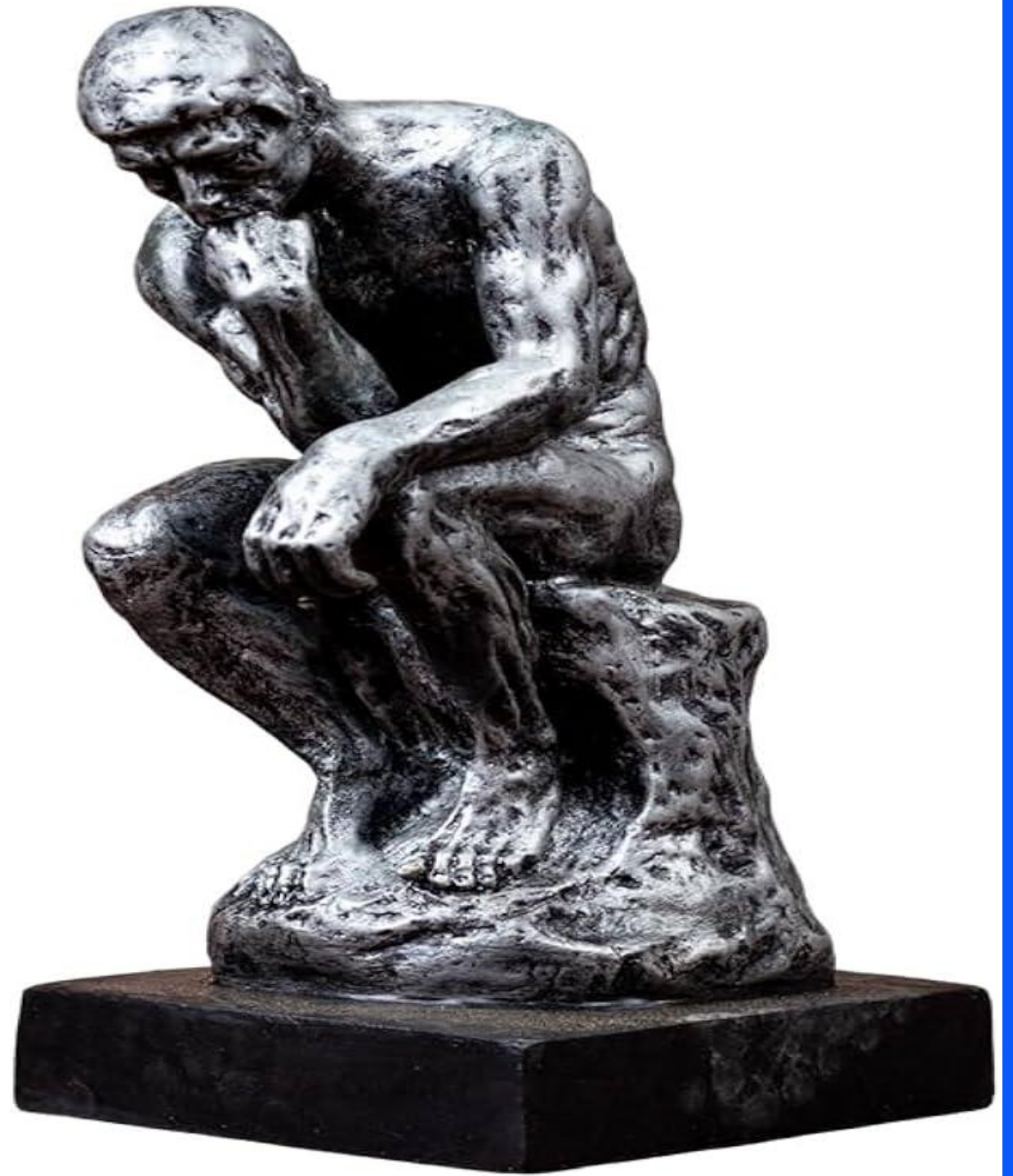
**AI in healthcare must be developed and deployed ethically.**

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# How does it work?

## LLM (Large Language Model) principle of work

It has been trained on vast amounts of text data from diverse sources (like books, websites, and scientific articles) to learn patterns in language. Essentially, it doesn't have "understanding" in the human sense, but it has learned to generate responses by predicting what word or phrase should come next in a conversation, based on what it has seen in similar contexts during training.



# How does it work really?

**Training:** It is "trained" on large datasets, including general knowledge, conversational patterns, and linguistic structures. During this phase, it learned to generate responses by adjusting millions of internal "weights" to improve its ability to predict the next likely word or phrase in a sentence.

**Inference Phase:** When you ask LLM a question, it goes through a process called "inference," where it analyses your question, draws from the patterns it learned during training, and generates a response that aligns with the input.





# ETHICS & EXPLAINABILITY

## NEED FOR ETHICAL FRAMEWORKS

Ethics underpin AI development, ensuring fairness and transparency.

Trust must be built in communities to embrace AI technologies effectively.

## COMMUNITY INVOLVEMENT

Engaging communities in AI discussions fosters trust and ethical acceptance. Incorporating explainability, local values and privacy concerns is essential for successful implementation.

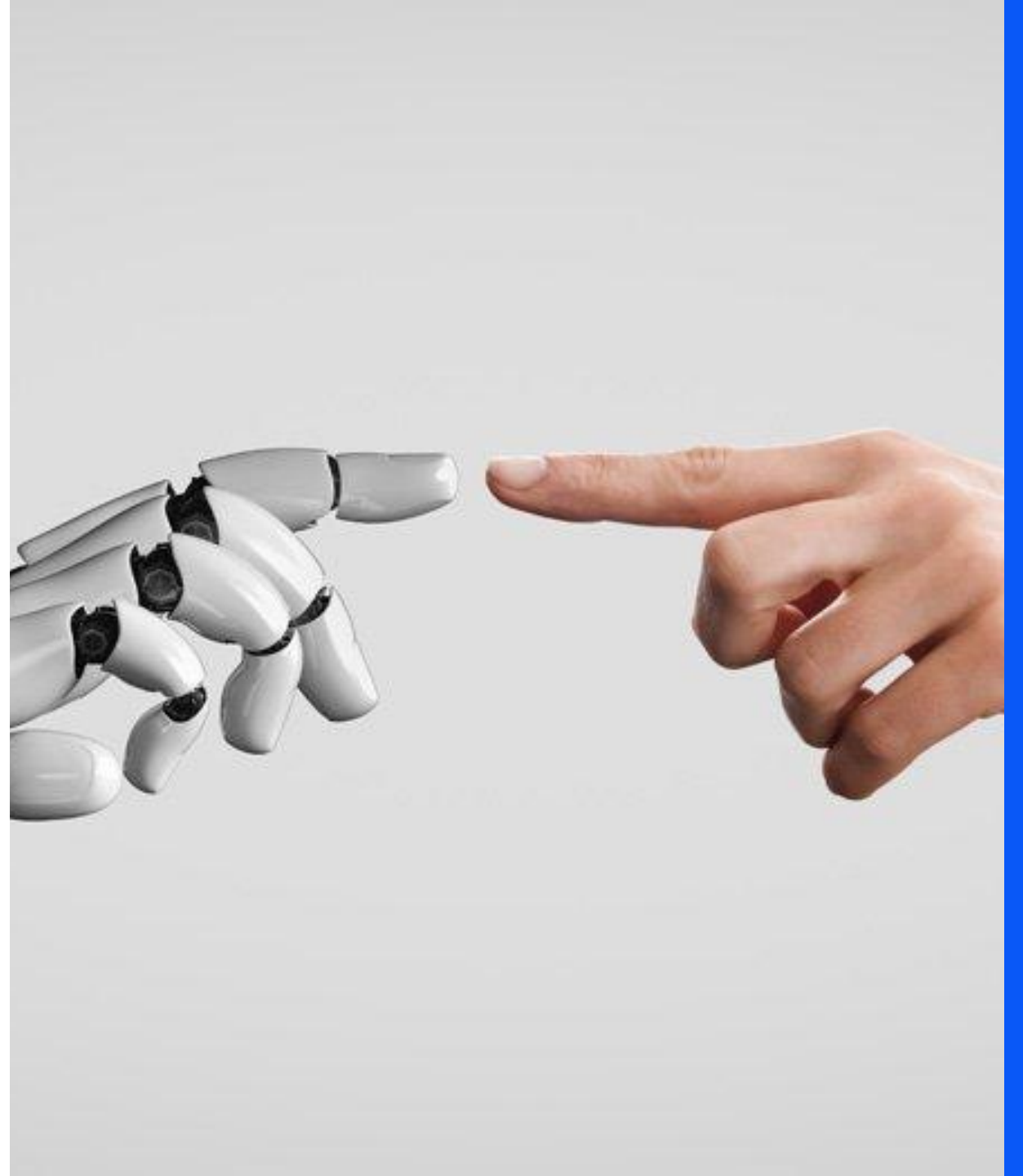
# TRUST

## How to build the trust in AI?

Trust is at the heart of AI adoption.

In many communities, AI is seen as a 'black box.'

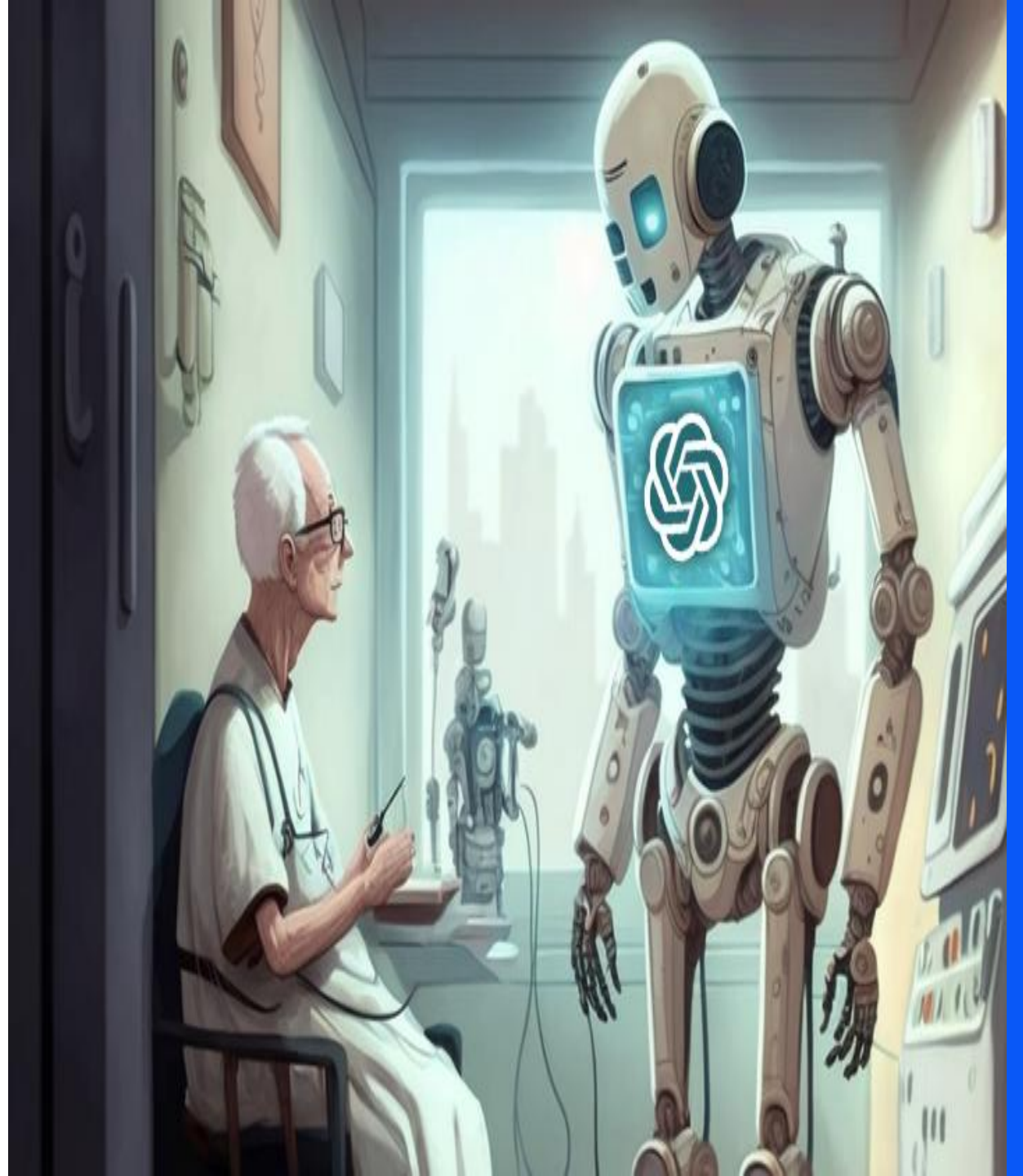
How do we make AI transparent, understandable, and beneficial?



# Cultural challenges

**Cultural differences play a crucial role in how technology is adopted.**

Skepticism about AI, particularly when it comes to issues like correctness, data privacy or the fear that technology could replace human jobs





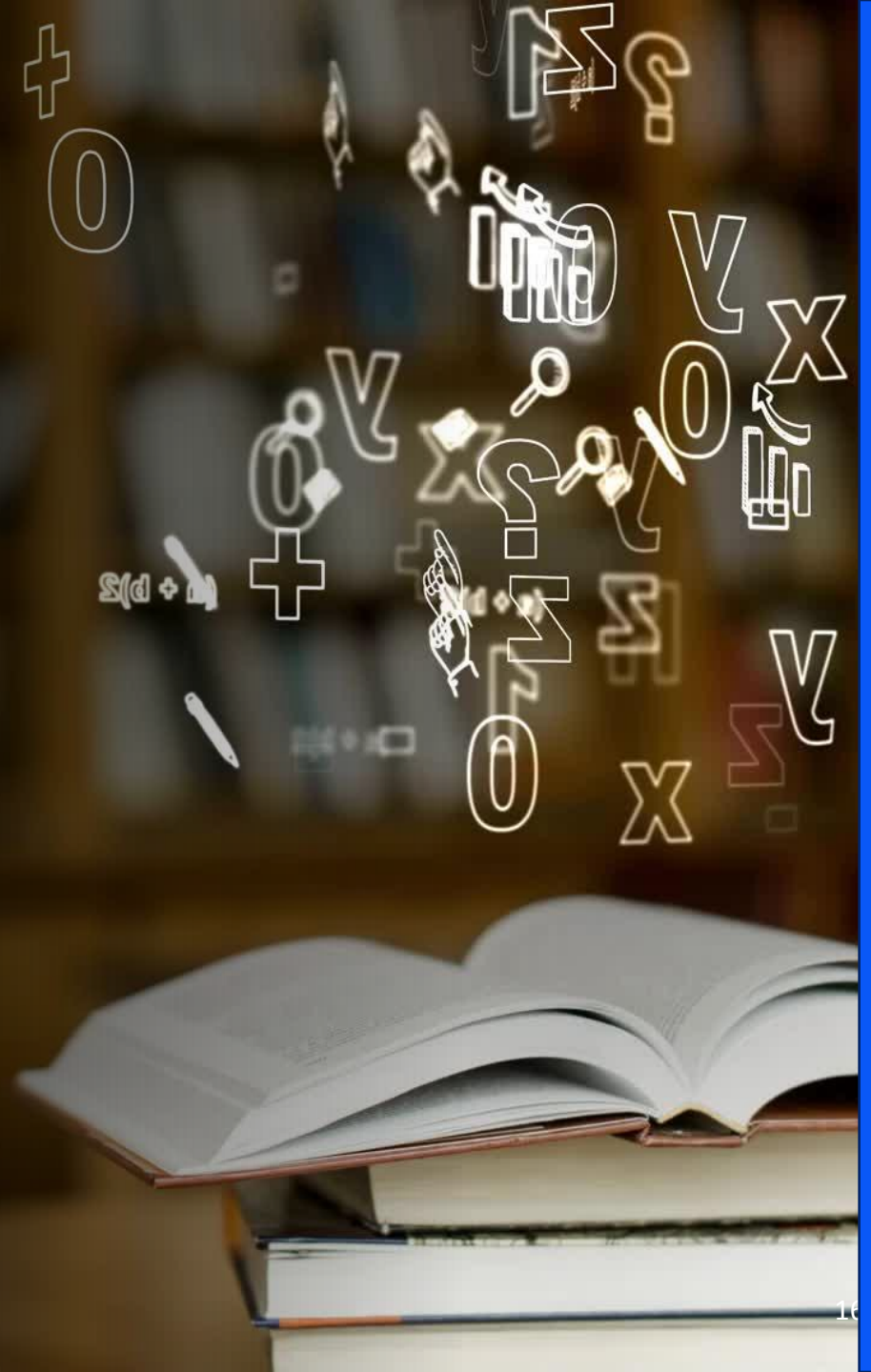
## Breaking Down Barriers to AI Integration

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Insufficient digital literacy

Lack of funding for research  
and development

Lack of Resources





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## Bringing It All Together: Research, Institutions, Industry, and Society

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AI won't thrive in a silo.

Collaboration is key.

The more we foster partnerships between researchers, developers, governments, and local communities, the more successful our AI initiatives will be





# AI and Economic Transformation

AI isn't just a tool for healthcare, it's also a powerful driver of economic growth.

By investing in AI, widening countries can create new job opportunities, foster innovation, and attract global partnerships !

# Thank you!

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