EPR Annual Conference
The Inclusive Revolution: New Art Practices for Robust AI Services

AI and New Technologies for Inclusion:
Leaving no one behind in the Digital Transition

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Why AI is already a Revolution that needs to be inclusive?

Within nine months of launch, ChatGPT was in use in 80 per cent of Fortune 500 companies.

Spending on generative AI systems by European businesses is expected to grow by 115 per cent in 2024.

Moderna has deployed more than 750 generative AI tools, based on OpenAI's GPT, with an 80 per cent adoption rate.

Businesses using AI tools are 40 per cent more efficient and have 70 per cent higher customer and employee satisfaction than businesses that do not.

In 2023 alone, the top five compute providers committed to $15.3 billion in new orders for NVIDIA's high-performing H100 graphics processing unit (GPU) chips.

In 2023, the total number of AI-related regulations grew by 56.3%.

In 2023, 61 notable AI models originated from U.S.-based institutions, far outpacing the European Union's 21 and China's 15.

In advanced economies, about 60 percent of jobs are exposed to AI, due to prevalence of cognitive-task-oriented jobs.

Overall exposure is 40 percent in emerging market economies and 26 percent in low-income countries.

College-educated workers are better prepared to move from jobs at risk of displacement to high-complementarity jobs; older workers may be more vulnerable to the AI-driven transformation.

According to the World Economic Forum, people with disabilities have the most to gain from technology, but they also have the most to lose.

The OECD identified 142 AI-powered solutions that could support people with disabilities in the labor market.
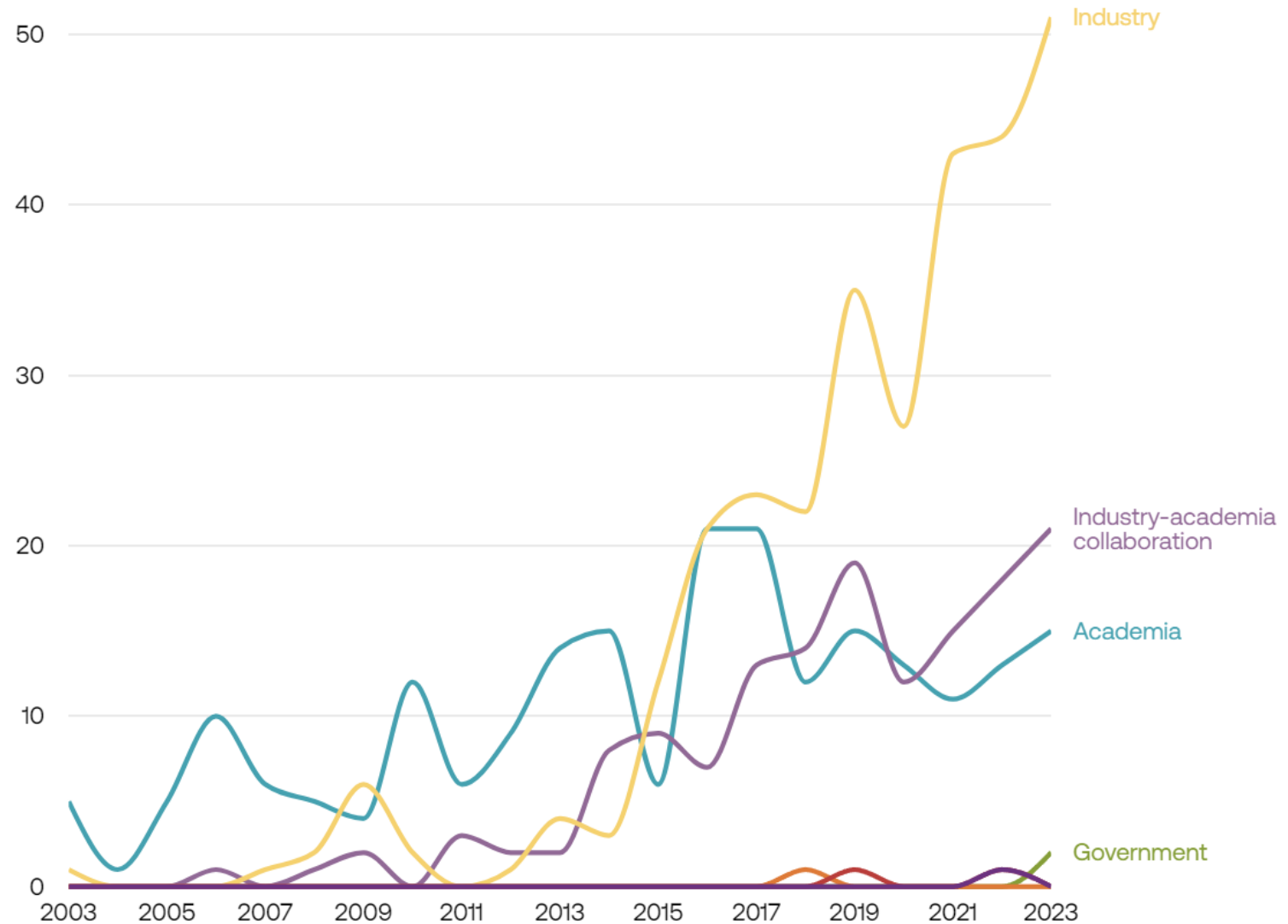
The chance of unaided machines outperforming humans in every possible task was estimated at 10% by 2027, and 50% by 2047.

The employment gap for people with disabilities has not improved in the last 10 years: people with disabilities are 2.3 times more likely to be unemployed than people without disabilities.

Annual granted patents related to artificial intelligence, by industry, World

Granted patents were first submitted in the selected country's patent office, but could have subsequently been granted by any country's patent office.

Banking and finance
Industry and manufacturing
Energy management
Physical sciences and engineering
Security
Life sciences
Transportation
Business
Telecommunications
Personal devices and computing

The OECD found that most AI-powered solutions supporting people with disabilities (24%) are developed in academic settings, closely followed by small firms of less than 50 employees (23%).

Big tech firms and start-ups account for 18% and 14% of these tools, respectively.

However, in 2023 industry produced 51 notable machine learning models, while academia contributed only 15.

Number of notable machine-learning models by sector, 2003–2023

Industry

Industry-academia collaboration

Academia

Government

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Why art is not inclusive yet but can transform all societal practices?

1.3 billion people – or 16% of the global population – experience a significant disability today

4.38
―――――――
80

People with disabilities are the world's largest minority, but disabled artists remain underrepresented in European museums.

87%

31%

Many museums still lack safe access to all areas, sufficiently spacious display spaces, curatorial adjustments to allow comfortable viewing experiences, **or proper facilities for a range of disabilities.**

1-5%

Concerns about risks from future AI systems are often linked to specific traits related to **alignment, trustworthiness, predictability, self-directedness, capabilities, and jailbreakability**

Recent epidemiological studies from <u>The Lancet</u> have revealed **significant associations between arts engagement and** social networks in adolescence, **mental health in adults, and healthy ageing**.

A 10-week programme of group singing was shown to reduce symptoms of postpartum depression by an average of 38% and improve recovery time.

Arts for
Prevention &
Promotion

❑ **affect the social determinants of health;**

❑ **support child development;**

❑ **encourage health-promoting behaviours;**

❑ **help to prevent ill health;**

❑ **support caregiving.**

Arts for Management and Treatment

- ❑ **help people experiencing mental illness;**

- ❑ **support care for people with acute conditions;**

- ❑ **help to support people with neurodevelopmental and neurological disorders;**

- ❑ **assist with the management of noncommunicable diseases;**

- ❑ **support end-of-life care.**

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New art methodologies based on current works

Minorities no longer:
inclusive art and
civic participation

"Painthical"

Within the framed artwork:

Pieter Bruegel the Elder
The Fall of the Rebel Angels
1562, oil on panel

even before humanity
there was war

from Heaven to Hell
fallen angels transform into monsters
bizarre crabs, birds, fishes
banished into oblivion

amid turbulence, Archangel Michael
chasing Lucifer the rebel
casts out the seven-headed dragon
time and space concur vertically

before danger manifests curiosity
salvation, amid turbulence

Johannes Vermeer
Girl with a Pearl Earring
1665, oil on canvas

there is a throne where you may sit
from there – you are observed
looking at who glimpses you

this is a painting of that Epiphany
the dominion of light
the virtue of purity
the power of fragility – except for the pearl

only the hierarchy of love
will rival imagination

The **work process** of

"Girl with a Pearl Earring"

The process
of **cognitive
painting**.

There is a forest
in your cerebellum's plains
nearby the cerebrum.

There
once in a while
against Aphrodite
against Venus
Eros approaches Psyche.

Gently touching her face,
Psyche wakes up to Cupid,
mind beating, heart blinking,
unbalancing you
in the twinkling of an eye.

What a pleasure
to disobey the reasons
to lure the soul
for Hedone
for Voluptas.

"Cupid and Psyche"

The classical and unequal relationship between object and subject, from the institutional and historical planes, disappears.

Pieter Bruegel the Elder
The Fall of the Rebel Angels
1562, oil on panel

even before humanity
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fallen angels transform into monsters
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"The Fall of the Rebel Angels"

"**Painthical**" generates a bridge where both **parties** (object and subject) **are empowered**

Harmen Steenwyck
Still Life: An Allegory of the Vanities of Human Life
1640, oil on oak

on the table of the Earth
humans do not create, but destroy

their ephemeral light conveys this canvas
of lutes / oil lamps / swords / shawms
shells / books / earthenware jugs
taken solely for a person's altar
where the skull governs
the vanities

but does it all really matter?
let me touch once again
the exclusive
textures

silk / wood
                  metal / rope
                              bone
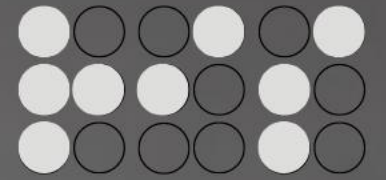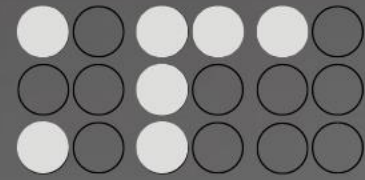
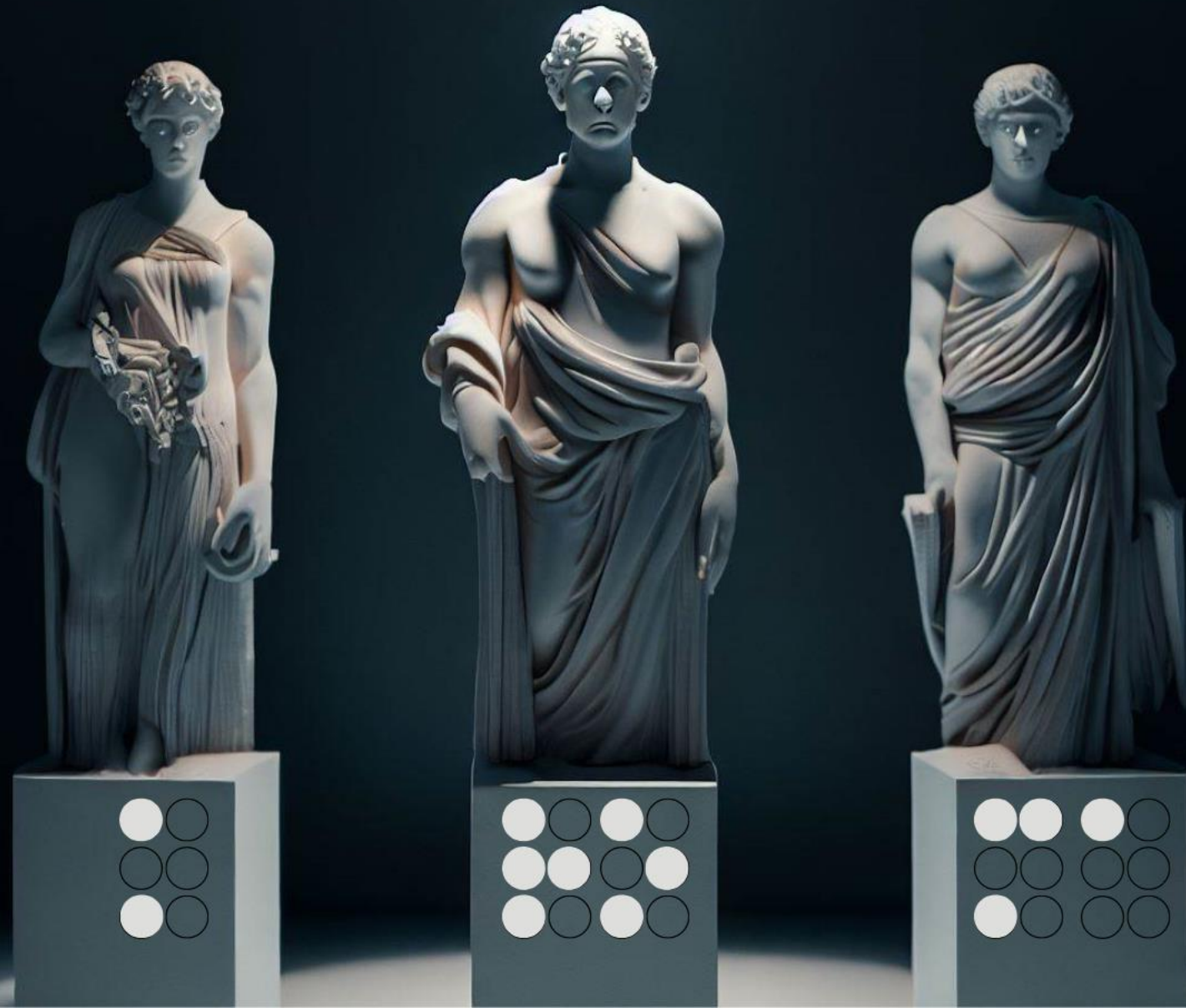"Still Life: An Allegory of the Vanities of Human Life"

What do you see?

Words into action: artificial intelligence and poetry
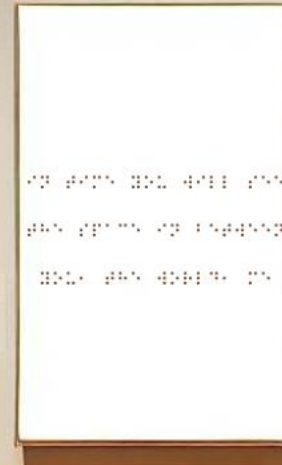
"Practical Info"

What do you feel when attempting to read braille?

"**Practical Info**" **represents** the unease feeling of **being the odd one.**

By visualizing the lack of understanding, **"Practical Info" prompts empathy and collaboration**.

AI-generated images are intervened to **spotlight the uncommon**: people with disabilities.

Visual awareness is not only a call to action, but a call to revisit paradigms.

art for good (Museums)

Sensory Access: includes making considerations for people who are hyposensitive (seek stimulation) or hypersensitive (avoid sensory stimulation) to external stimuli such as lights, sounds, and textures.

Physical Access: looks at not only how people get into the museum, but once they are that they ca navigate with ease, engage with exhibits/programs, and have access to basic services.

Cognitive Access: ensures that information, materials, and communications are readily available, and easily understandable to people with limitations in cognitive abilities.

Language Access: guaranties that people from other countries understand the materials available at the exhibition.

Financial Access: highlights that people with disabilities are overwhelmingly underemployed or unemployed.

art for good (IA)

Alignment

Current Methodology: "Painthical" uses poetry to present classical paintings in a way that emphasizes the viewer's interpretation rather than a rigid, historical context.

AI Alignment Approach: Develop AI that prioritizes disabled-centered design, ensuring the AI aligns with diverse user values and needs. Incorporate feedback loops where the AI learns from user interactions to better align with their preferences and ethical considerations.

Trustworthiness

Current Methodology: The project bridges the gap between object (art) and subject (viewer), fostering an egalitarian relationship.

AI Trustworthiness Approach: Implement transparency in AI processes as layers of meaning, akin to the transparency in artistic interpretation in "Painthical." Provide clear explanations for AI decisions, ensuring users understand how and why decisions are made, enhancing trust.

Predictability

Predictability: Current Methodology: Practical Info uses AI-generated images to spotlight the uncommon and highlight the challenges faced by people with disabilities.

AI Predictability Approach: Design AI systems with predictable behavior patterns adapted to people with disabilities, similar to how "Practical Info" consistently highlights specific themes. Ensure AI systems provide consistent responses, reducing uncertainty for users.

Self-directedness

Current Methodology: "Practical Info" prompts viewers to think deeply about inclusion and empathy through sensory and cognitive experiences.

AI Self-directedness Approach: Develop AI that can autonomously make decisions within ethical and safety guidelines for people with disabilities, much like how "Practical Info" prompts empathy and reflection.

art for good (IA)

art for good (IA)

Capabilities

Painthical: Enhance the project by incorporating all international and national braille systems to AI services, expanding its creative capabilities.

Practical Info: Utilize AI to create more complex and varied sensory experiences that adapt to individual users' needs, demonstrating the AI's ability to handle diverse and intricate tasks.

Jailbreakability

Painthical: Ensure that any AI used in creating secure and robust datasets, giving especial privacy protection considerations to data from people with disabilities.

Practical Info: Implement strict security protocols to prevent the AI from being altered to produce harmful or offensive content, using check verification mechanisms from inclusion-related organizations.

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Thank you!

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