Beyond the Limits

AI Practices That Are Off the Table

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About me

Background

- **BS**, Computer Engineering, BU
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- **PhD**, Information Systems, METU

Not a lawyer!

Research Interests

- Affective computing
- AI in education
- AI tutors

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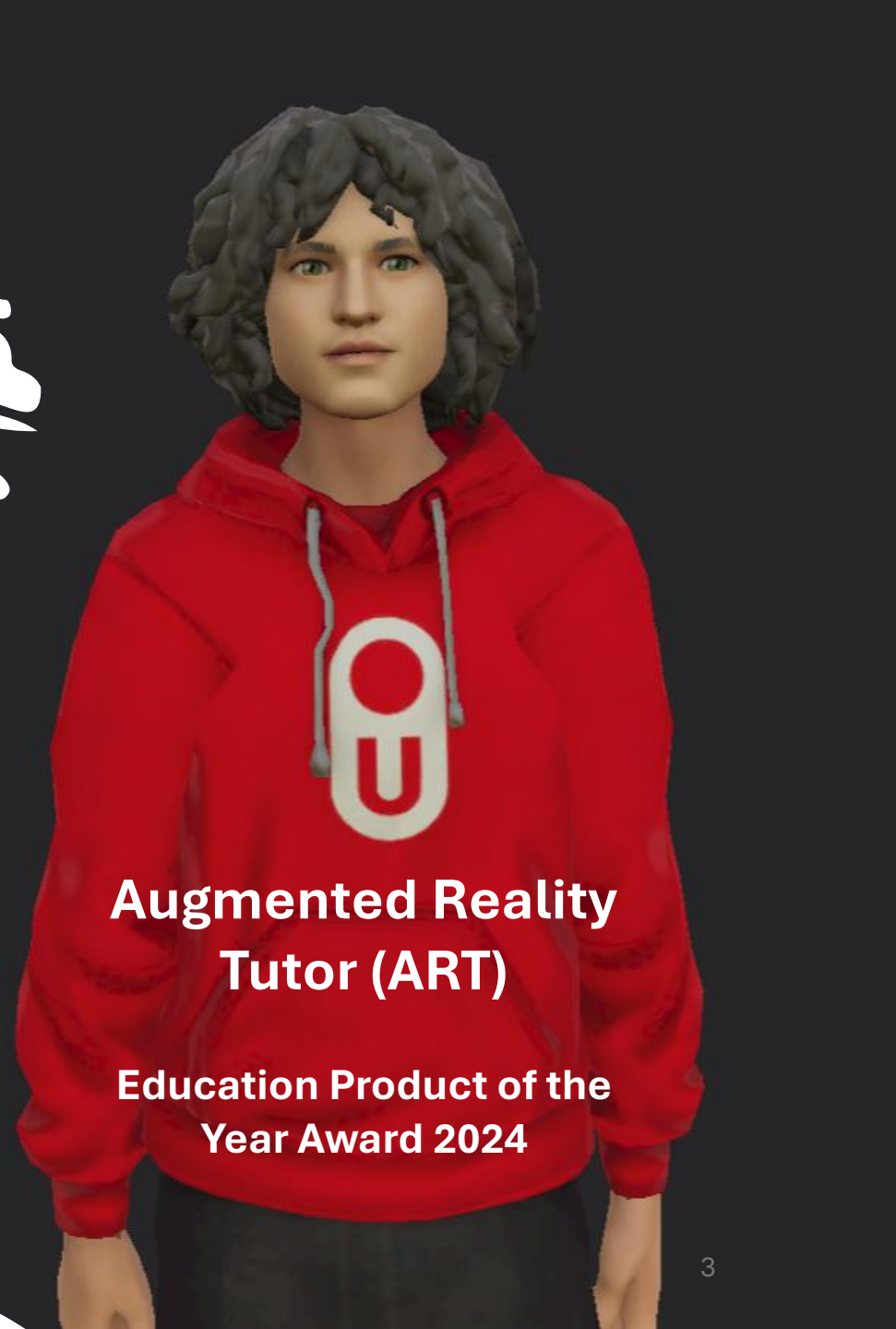

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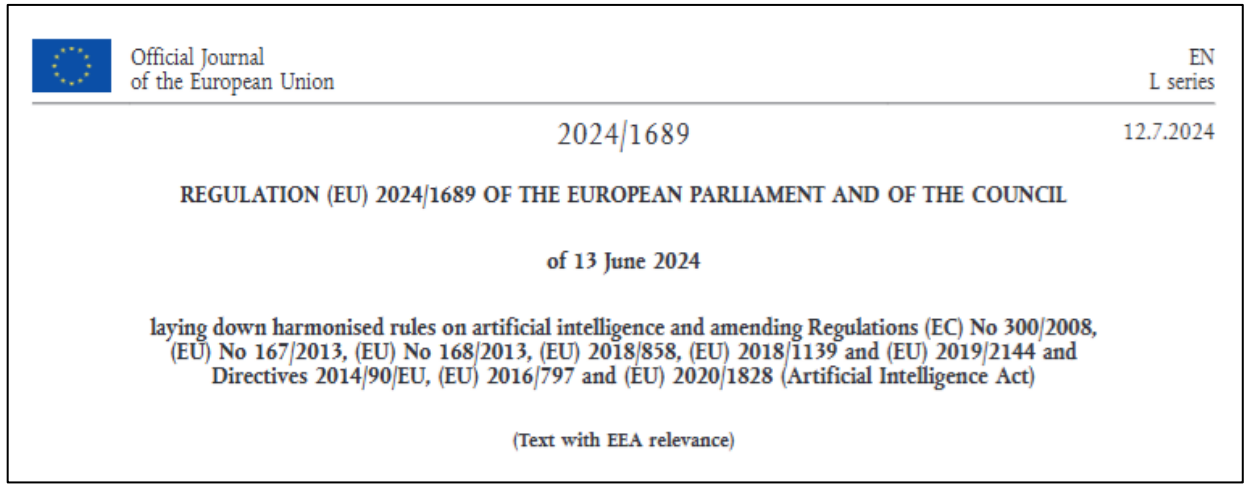
AI Act & Guidelines

This presentation selectively addresses parts of the AI Act and the commission guidelines relevant to education contexts. Therefore, it is not comprehensive. Also, it is not meant as legal advice.

AI Act [1]
REGULATION (EU) 2024/1689



Official Journal of the European Union — EN L series

2024/1689 — 12.7.2024

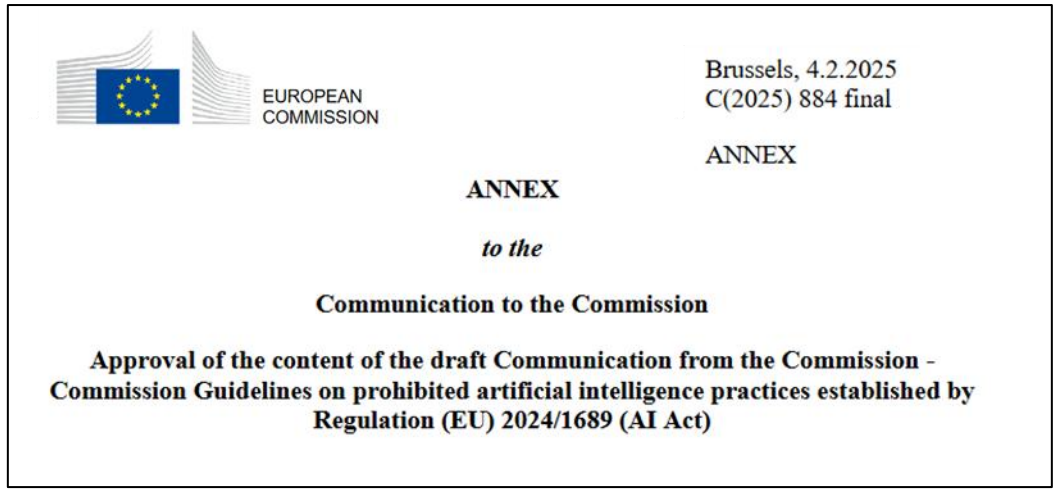
REGULATION (EU) 2024/1689 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 13 June 2024

laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act)

(Text with EEA relevance)

EC-2025-1
Guidelines on prohibited AI practices [2]



EUROPEAN COMMISSION

Brussels, 4.2.2025
C(2025) 884 final

ANNEX

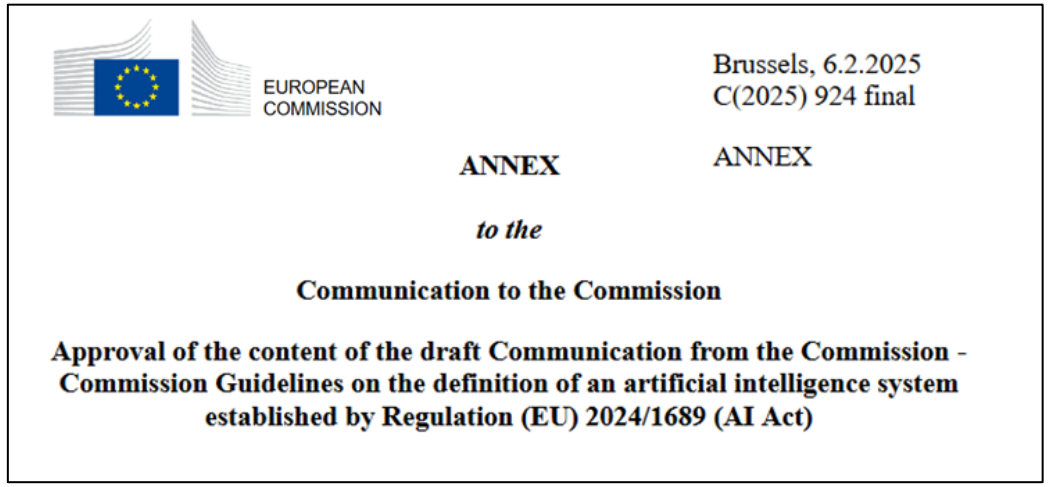
ANNEX

to the

Communication to the Commission

Approval of the content of the draft Communication from the Commission - Commission Guidelines on prohibited artificial intelligence practices established by Regulation (EU) 2024/1689 (AI Act)

EC-2025-2
Guidelines on AI system definition [3]



EUROPEAN COMMISSION

Brussels, 6.2.2025
C(2025) 924 final

ANNEX

ANNEX

to the

Communication to the Commission

Approval of the content of the draft Communication from the Commission - Commission Guidelines on the definition of an artificial intelligence system established by Regulation (EU) 2024/1689 (AI Act)

[1] https://eur-lex.europa.eu/eli/reg/2024/1689/
[2] Guidelines on prohibited AI practices
[3] Guidelines on AI system definition

AI Act – History & Milestones

- April 2021: European Commission unveiled proposal for the new AI Act
- December 2022: European Council adopted its common position on the AI Act
- June 2023: European Parliament adopted more than 700 amendments to draft AI Act text
- July-December 2023: Trilogue meetings between European Commission, Parliament and Council
- December 2023: European Council and Parliament reached provisional Agreement
- March 2024: European Parliament endorsed the AI Act
- May 2024: European Council endorsed the final text (419 pages)
- July 2024: AI Act was published in the EU's Official Journal
- August 2024: AI Act went into force
- February 2025: Prohibitions and AI literacy requirements went into effect, first Guidelines were published
- August 2025: Deadline for general-purpose AI providers: Transparency disclosures, explainability and accountability. Penalties will apply.
- August 2026: All high-risk AI systems must fully comply with the AI Act.

Sources:

https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-regulation-on-artificial-intelligence

https://artificialintelligenceact.eu/implementation-timeline/

AI Act – Structure

AI Act & Commission Guidelines

- Subject matter and scope: Articles 1-2
- Definitions: Article 3
- Key Actors
  - Provider: Article 3 (3)
  - Deployer: Article 3 (4)
  - Authorised representative: Article 3 (5)
  - Importer: Article 3 (6)
  - Distributor: Article 3 (7)
  - Operator: Article 3 (8)
- AI system definition: Article 3 (1) & EC-2025-2
- Biometric data definition: Article 3 (34)
- Emotion recognition system: Article 3 (39)
- Testing in real-world conditions definition: Article 3 (57)
- General-purpose AI model and system definition: Article 3 (63) and Article 3 (66)

- AI literacy: Article 4
- Prohibited AI practices: Article 5
  - Subliminal, manipulative, deceptive techniques: Article 5 (1) (a)
  - Exploiting vulnerabilities: Article 5 (1) (b)
  - Emotion recognition in education and workplace: Article 5 (1) (f)
  - Biometric categorization: Article 5 (1) (g)
- High-risk AI systems: Article 6
  - Emotion recognition systems: Article 6 (2) & Annex III
- Requirements for high-risk AI systems: Article 8
  - Risk management system: Article 9
  - Data and data governance: Article 10
  - Technical documentation: Article 11
  - Record keeping: Article 12
  - Transparency: Article 13
  - Human oversight: Article 14
  - Accuracy, robustness, and cybersecurity: Article 15
- Obligations
  - of providers of high-risk AI systems: Article 16
  - of deployers of high-risk AI systems: Article 26
- Transparency obligations for providers and deployers of certain AI systems - Article 50

AI Act – Subject Matter

Article 1 AI Act

Purpose:

- Improve the functioning of the internal market
- Promote human-centric and trustworthy AI
- Ensure a high-level protection of health, safety, and fundamental rights against harms of AI

AI Act lays down:

- Rules for placing on the market, putting into service, and the use of AI systems
- Prohibitions of certain AI practices
- Specific requirements for high-risk AI systems
- Transparency rules for certain AI systems
- Rules for deploying general-purpose AI models
- …

AI Act – Scope

Article 2 AI Act

AI Act applies to:

- **Providers** placing into market or putting into service AI systems in the EU (regardless of the provider's location)
- **Deployers** of AI systems in the EU
- Importers, distributors, product manufacturers, authorized representatives
- Affected persons located in the EU

AI Act does <u>not</u> apply to:

- Deployment and use outside the EU
- Military, defence, and national security
- Models that are developed solely for **scientific research**

AI Act – Key Actors

1. Provider (developer)

- An entity (or natural person) that develops an AI system or has it developed and places it on the market or puts it into service under its own name or trademark.
- Responsibilities: Ensuring compliance, performing conformity assessments, maintaining documentation, providing instructions for use, post-market monitoring, and incident reporting.
- Example: **EdTech providers**

Article 3 (3) AI Act

2. Deployer (user)

- Any person or organization that uses an AI system under its authority, except where the AI system is used for personal, non-professional activity.
- Responsibilities: Using the AI system in accordance with the instructions, ensuring human oversight (when required), and reporting serious incidents.
- Example: **Schools** and **universities**, e.g., Open Universiteit

Article 3 (4) AI Act

Other roles:

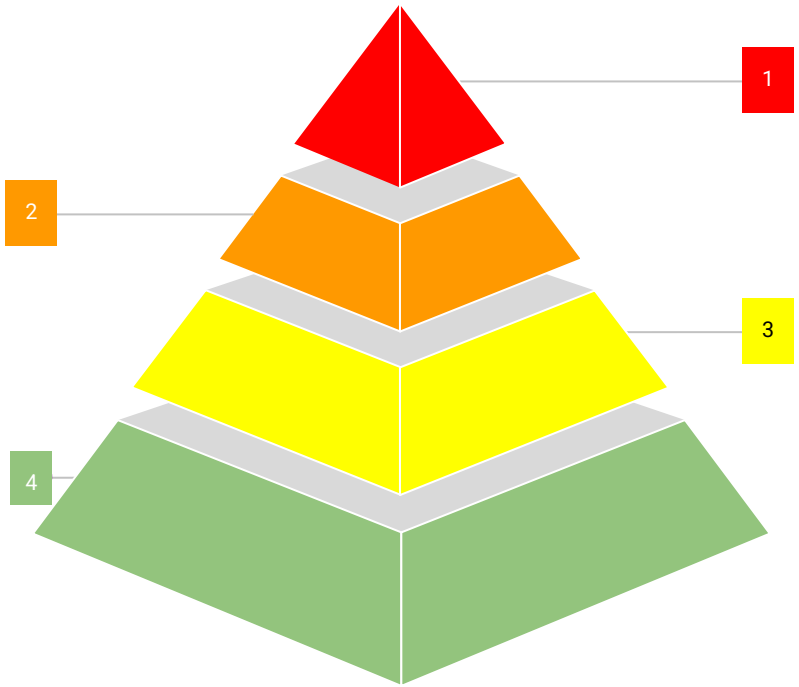
3. Importer
4. Distributor
5. Authorised Representative

Article 3 (5)-(8) AI Act

AI Act – Risk Categories

Article 5 AI Act

Article 6 AI Act



1 **Unacceptable risk** — **Prohibited**

High risk 2 — **Permitted** subject to compliance with AI requirements and ex-ante conformity assessment

3 **Limited risk** — **Permitted** but subject to information/transparency obligations

Minimal risk 4 — **Permitted** with no restrictions

AI Act – AI Literacy

> *"Providers and deployers of AI systems shall* ***take measures*** *to ensure, to their best extent,* ***a sufficient level of AI literacy of their staff*** *and other persons dealing with the operation and use of AI systems on their behalf, taking into account their technical knowledge, experience, education and training and the context the AI systems are to be used in, and considering the persons or groups of persons on whom the AI systems are to be used."*

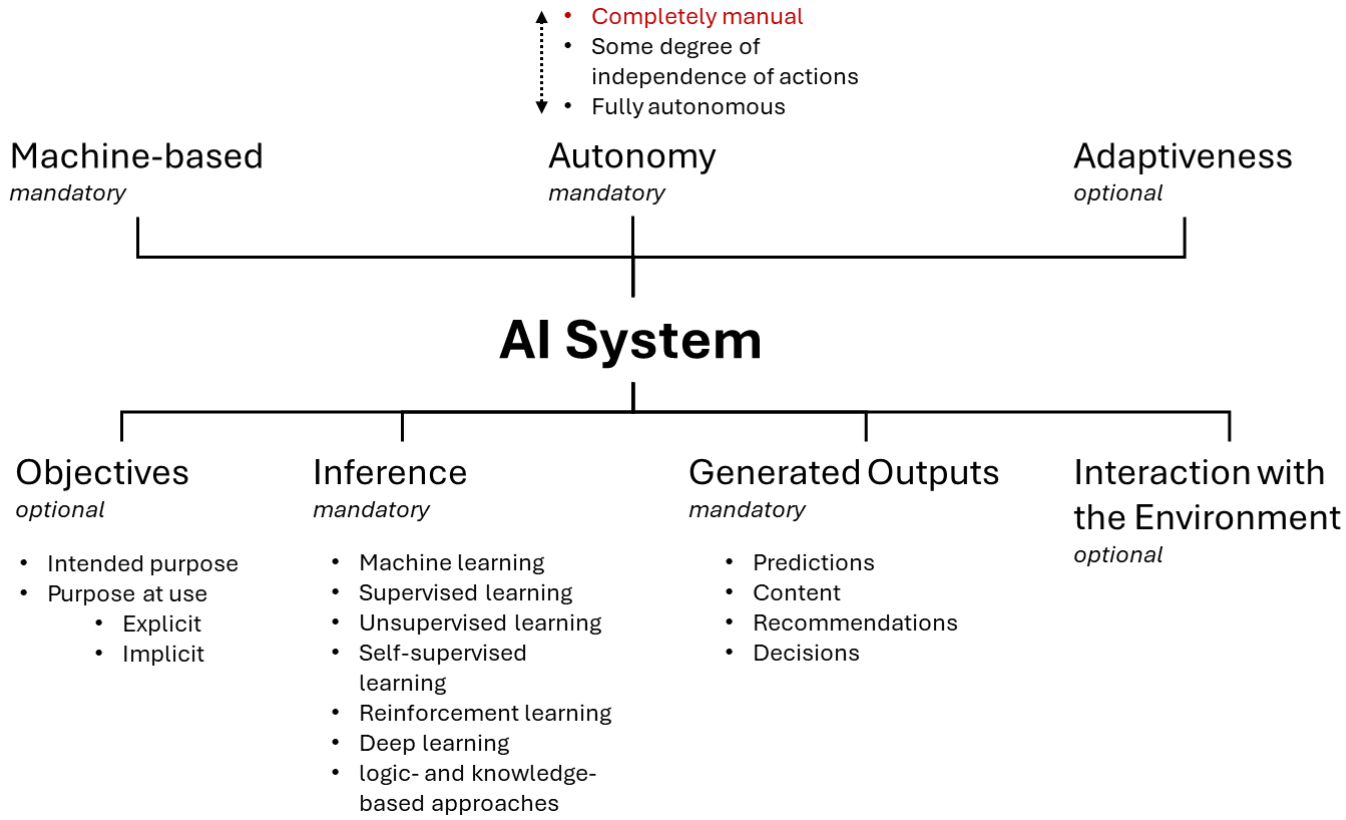
Article 4 AI Act

AI literacy requirements are in effect since February 2025 !

Definition of AI System

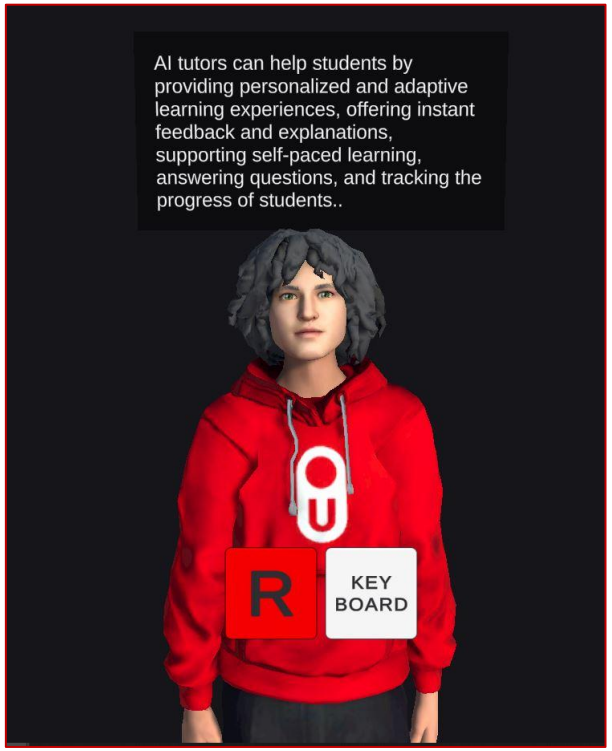
> *"'AI system' means a* ***machine-based*** *system that is designed to operate with varying levels of* ***autonomy*** *and that may exhibit* ***adaptiveness*** *after deployment, and that, for explicit or implicit* ***objectives***, ***infers***, *from the input it receives, how to generate* ***outputs*** *such as predictions, content, recommendations, or decisions that* ***can influence physical or virtual environments***"

Article 3 (1) AI Act | EC-2025-2 (8)



Example – Is ART an AI System?

Criterion	Assessment	Verdict
Machine-based system	ART is a software system that require computational infrastructure (hardware and software) to function.	**Yes**
Autonomy	ART is designed to operate with a high degree of independence from human involvement after configuration, meaning it can autonomously generate responses based on prompts.	**Yes**
Adaptiveness	ART is capable of learning student preferences and needs, and changes its behavior accordingly. Therefore, it is adaptive.	**Yes**
AI system objectives	ART has explicit and implicit objectives regarding many of its functions as a tutor and a virtual assistant.	**Yes**
AI techniques that enable inference	ART infers how to generate outputs (e.g., responses, recommendations) from student prompts and learning activities as inputs.	**Yes**
Outputs that can influence physical or virtual environments	ART generates predictions, content, recommendations, and decisions as its output, which can be used to support actions or responses in both digital and real-world contexts.	**Yes**
Interaction with the environment	ART offers interaction with users and other elements of the environment such as learning management systems.	**Yes**



Research Exemption

> *"This Regulation **does not apply to any research, testing or development activity** regarding AI systems or AI models p**rior to their being placed on the market or put into service**.(…). Testing in **real world conditions** shall not be covered by that exclusion."*

Article 2 (8) AI Act

- Good news for academics, but…
- What's the point of scientific research if the findings cannot be applied in practice?
- Funding for research may be negatively impacted once it is known that application of the outcomes is prohibited.

- Research prior to deployment is exempt from AI Act regulations.
- Even prohibited practices listed in Article 5 can be conducted as a part of research. (see [EC-2025-1] (30))
- This is because AI Act recognizes the importance of scientific research… (see [EC-2025-1] (31))
- However, real-world testing is not covered by this exclusion (see [EC-2025-1] (32))

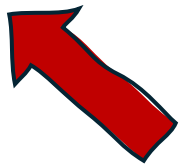
EC-2025-1 (30)-(33)

Prohibited Practices

Article 5

EC-2025-1

- Deploying **manipulative** of **subliminal** techniques to change behavior
- Using **vulnerabilities** of persons or groups to change behavior
- Classification of persons with **scores** that lead to consequences in different contexts
- Risk assessments to **predict** criminal behavior of a person
- **Scraping** facial images from the internet
- Biometric **categorization** of persons in groups based on race and sexual orientation amongst others
- **Real-time remote biometric identification** in publicly accessible spaces for law enforcement purposes
- AI systems that infer **emotions** in the workplace or educational institutes



Prohibited Practices

limited to education

> *"the **placing on the market**, the **putting into service** (…) or the **use** of **AI systems to infer emotions** of a natural person in the areas of workplace and **education institutions**, except where the use of the AI system is (…) for **medical or safety** reasons"*

Article 5 (1) (f) AI Act

Because such practices "*can lead to 'discriminatory outcomes and can be intrusive to the rights and freedoms of the concerned persons' (…) especially in education and training institutions where (…) students are in vulnerable positions"* due to asymmetric relationships in education.

EC-2025-1 (241)

Four cumulative conditions must be fulfilled for the prohibition:

- Practice must constitute **placing on the market**, **putting into service**, or **use**
- AI system to **infer emotions**
- In the areas of **education institutions** and workplace
- Excluded from prohibitions if the AI system is intended for **medical** and **safety**.

EC-2025-1 (242)

Prohibited Practices - Clarifications

limited to education

What are emotions?

"(…) the concept of emotions or intentions should be understood in a wide sense and not interpreted restrictively. Recital 18 AI Act provides some detail, listing emotions 'such as happiness, sadness, anger, surprise, disgust, embarrassment, excitement, shame, contempt, satisfaction and amusement'. These examples are not exhaustive."

EC-2025-1 (248)

Detecting readily apparent expressions is not banned.

"(…) emotion recognition systems do not include 'the mere detection of readily apparent expressions, gestures or movements, unless they are used for identifying or inferring emotions"

EC-2025-1 (249)

What is the coverage of the term **education institutions**?

*"The reference to **education institutions** is **broad** and should be understood to include both public and private institutions. There is no limitation as regards the types or ages of pupils or students or of a specific environment (online, in person, in a blended mode etc)"*

EC-2025-1 (255)

Prohibited Practices - Examples

limited to education

Allowed:
AI-based application using emotion recognition for learning language outside an education institution (allowed, because it is not in an education institution)

Prohibited:
If students are required to use that application by an education institution

Prohibited:
Using an emotion recognition AI system by an education institution to infer the interest and attention of students)

Allowed:
if only used for learning purposes in the context of role-play (e.g., for training actors or teachers)

Allowed:
An education institution using eye tracking when examining students online e.g., to detect unauthorized material use (allowed, because it does not recognize emotions)

Prohibited:
If that system also recognizes emotions, e.g., arousal or anxiousness

Prohibited:
Using an emotion recognition AI system by an education institution during admissibility tests for new students

Prohibited:
An education institution employing an emotion recognition AI system on both teachers (workplace) and students (education)

Prohibited Practices - Examples

limited to education

AI-based emotion recognition can **enhance utility, comfort, and wellbeing** in educational institutions:

- Emotion recognition tools that improve the **usability and accessibility** of digital systems, thus contributing to a more inclusive society
- Systems that monitor emotional states of a student for the **early-detection and prevention of burnout**
- **Online learning systems** that adapt the content and teaching style to the affective state of the student
- Affective systems that enhance the quality of interaction during **video conferencing**
- **Social robots** that understand and respond to human emotions, deployed in education institutions

These practices are unfortunately prohibited!

Special attention to education

*"Considering the **imbalance of power** in the context of work or **education**, combined with the intrusive nature of these (emotion recognition) systems, such systems could lead to detrimental or unfavourable treatment of certain natural persons or whole groups thereof…"*

Recital (44)

*"The extent of the adverse impact caused by the AI system on the **fundamental rights** (…) is of particular relevance when classifying an AI system as **high risk**. Those rights include (…) the right to **education**."*

Recital (48)

*"AI systems used in education or vocational training, in particular for **determining access or admission**, for **assigning persons to educational and vocational training institutions** or programmes at all levels, **for evaluating learning outcomes** of persons, for **assessing the appropriate level of education for an individual** and materially influencing the level of education and training that individuals will receive or will be able to access or for **monitoring and detecting prohibited behaviour of students during tests** should be classified as **high-risk AI systems**, since they may determine the educational and professional course of a person's life and therefore may affect that person's ability to secure a livelihood."*

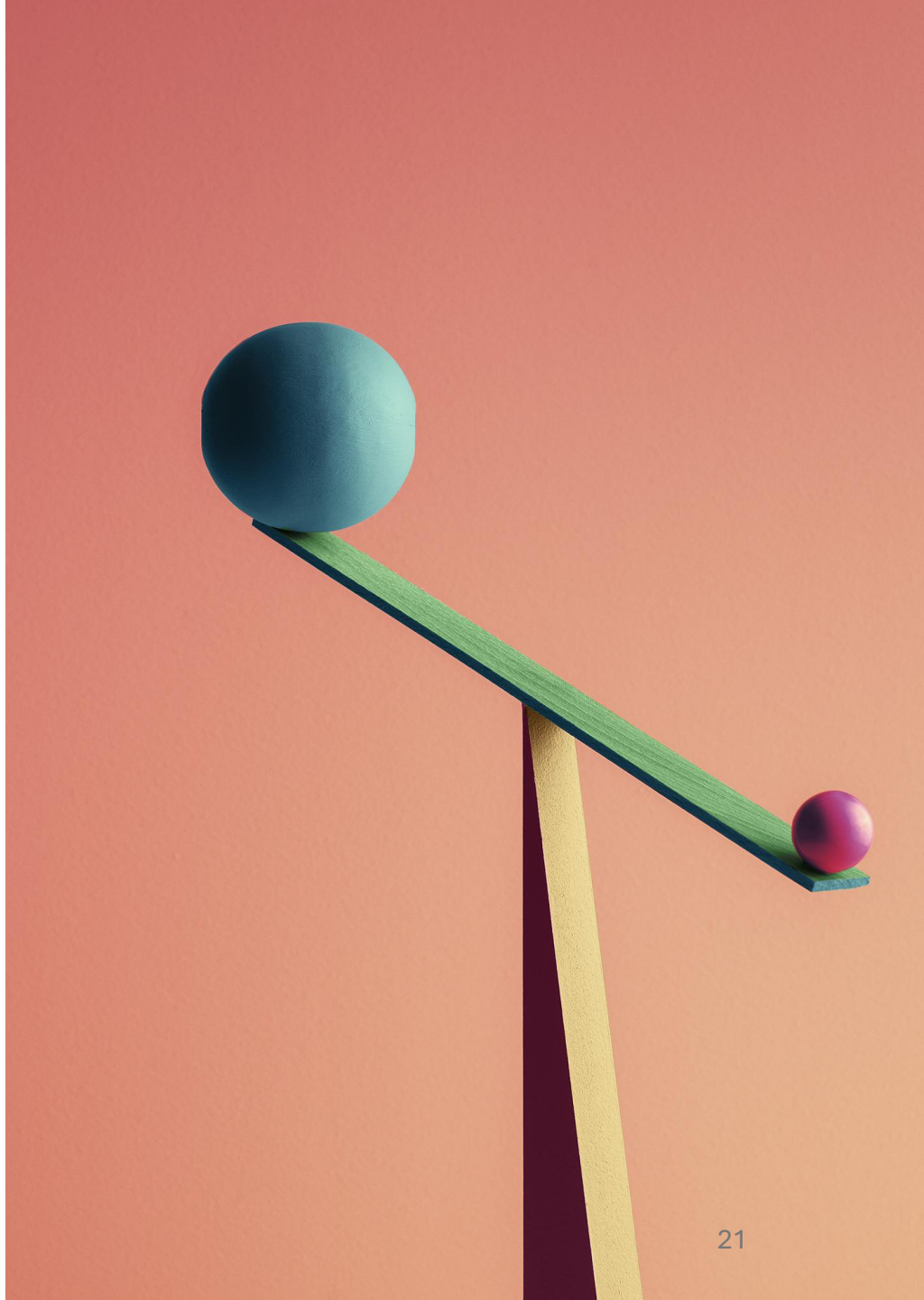
Recital (56)

High-risk Practices

limited to education

> Education and vocational training:
>
> (a) AI systems intended to be used to determine **access or admission** or to assign natural persons **to educational and vocational training** (…)
>
> (b) AI systems intended to be used to **evaluate learning outcomes**, including when those outcomes are used to steer the learning process of natural persons in educational (…) institutions at all levels;
>
> (c) AI systems intended to be used for the purpose of **assessing the appropriate level of education** that an individual will receive or will be able to access, in the context of or within educational (…) institutions at all levels;
>
> (d) AI systems intended to be used for **monitoring and detecting prohibited behaviour of students during tests** in the context of or within educational and vocational training institutions at all levels.

Annex III (and Article 6(2))



Requirements for High-risk AI Systems

Risk management system	*A risk management system shall be established, implemented, documented and maintained in relation to high-risk AI systems*	Article 9
Data and governance	*High-risk AI systems (…) involving the training of AI models with data shall be developed on the basis of training, validation and testing data sets that meet the quality criteria…*	Article 10
Technical documentation	*The technical documentation of a high-risk AI system shall be drawn up before that system is placed on the market or put into service and shall be kept up-to date.*	Article 11
Record keeping	*High-risk AI systems shall technically allow for the automatic recording of events (logs) over the lifetime of the system.*	Article 12
Transparency and provision of information to deployers	*High-risk AI systems shall (…) ensure that their operation is sufficiently transparent to enable deployers to interpret a system's output and use it appropriately.*	Article 13
Human oversight	*High-risk AI systems shall be designed and developed (…) (to) be effectively overseen by natural persons (…) use.*	Article 14
Accuracy, robustness, and cybersecurity	*High-risk AI systems shall (…) achieve an appropriate level of accuracy, robustness, and cybersecurity, and (…) perform consistently (…) throughout their lifecycle.*	Article 15

Obligations

of providers of high-risk AI systems

- Ensure compliance with the requirements of high-risk AI systems
- Have a quality management system in place
- Keep the documentation
- Keep logs automatically generated by their high-risk AI systems
- Conformity assessments
- …

Article 16

of deployers of high-risk AI systems

- Make sure that the high-risk AI system is used in accordance with the instructions
- Shall assign –qualified- human oversight
- Shall monitor the operation of the high-risk AI system
- Shall keep the logs automatically generated by the AI system
- Before putting into service or using a high-risk AI system at the workplace, shall inform workers…
- …

Article 26

Transparency Obligations

of providers of high-risk AI systems

- Providers shall ensure that AI systems inform their users that they are interacting with an AI system
- AI-generated outputs shall be marked in a machine-readable format and detectable as artificially generated

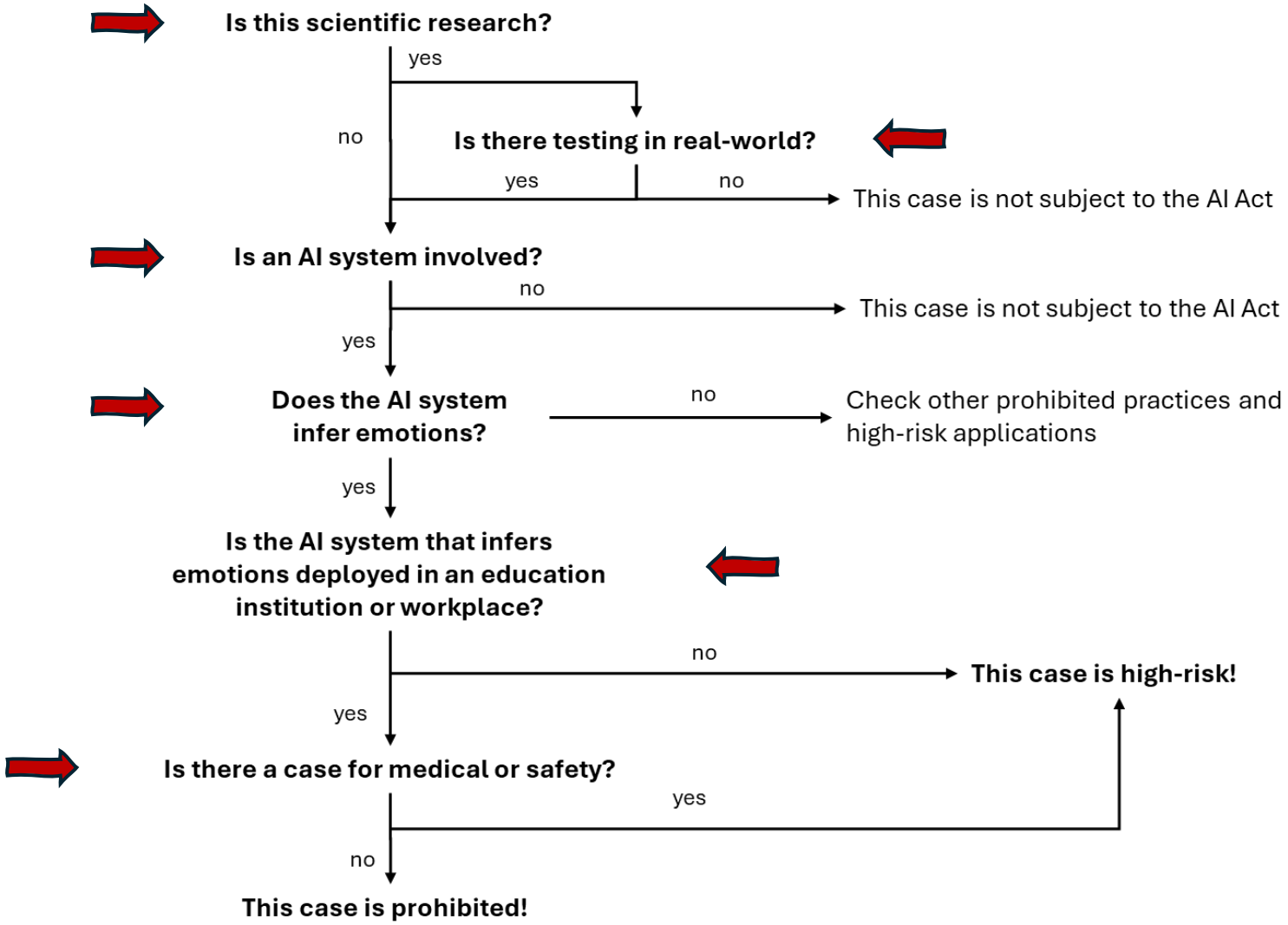
of deployers of high-risk AI systems

- Deployers of an emotion recognition system (…) shall inform the natural persons exposed to the operation of the system
- Deployers of an AI system that generates or manipulates image, audio or video content constituting a deep fake, shall disclose that the content has been artificially generated or manipulated.

Article 50

Decision Flowchart for Risk Assessment

limited to emotion recognition



Discussion

Do you use –or plan to use- AI in your teaching, research, or institution?

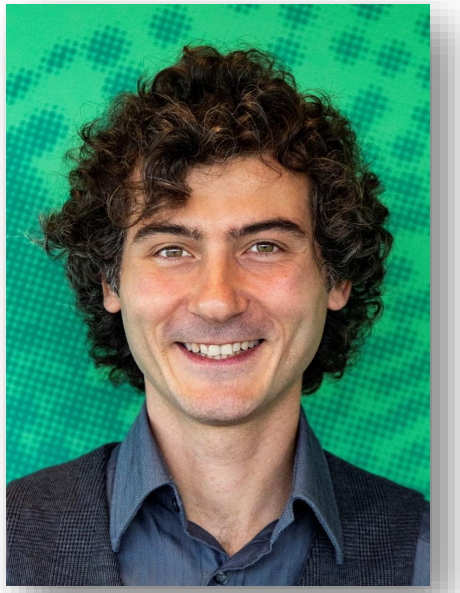
Would your use of AI count as deployment, research, or real-world testing?

Does anything you use fall under prohibited or high-risk AI systems?

What do you think about the prohibition of emotion recognition in education?

Do you think the AI Act hinder innovation in the EU?

Let's connect!



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