INTRODUCTION

I. General remarks

The regulation of artificial intelligence (AI) has been the subject of intense ethical, legal, technical, and theological debate and reflection. Numerous frameworks set out the fundamental principles that should govern AI. These are usually summarised as the principles of value, fairness, accountability, and transparency, but they are not limited to these: the principles of well-being, security, and sustainability are equally important.[1] All major international organisations and related NGOs have articulated the fundamental basic principles of AI in the context of soft-law instruments. Their adoption, however, was far from self-evident. The drafting process was marked by heated disagreements, particularly regarding the appropriate degree of regulatory stringency.[2] On the one hand, strict rules provide legal certainty and stability for the market; on the other, they risk stifling innovation and research. Hence the pressing need to strike a balance between these constitutionally protected, yet often conflicting goods.

The first attempt at a comprehensive, binding regulation of AI is the European Regulation on Artificial Intelligence (EU) 2024/1689 (the Artificial Intelligence Act, or AI Act). The AI Act marks an important milestone for the European Union,[3] as it is the first piece of legislation world-

[1] Christiane Wendehorst, "Art. 1," in *KI-VO, Kommentar, Verordnung über künstliche Intelligenz*, ed. Mario Martini and Christiane Wendehorst (Munich: C.H. Beck, 2024), para. 1.

[2] Ibid., para. 2.

[3] In the United States, the *National Defence Authorization Act for Fiscal Year 2019* preceded this development. This federal law determines the budget, expenditures, and policies of the U.S. Department of Defence. Article 238 of the Act regulates joint activities of research, development, and transition in the field of AI. The Secretary of Defence established a range of activities within the Department to coordinate efforts aimed at developing, maturing, and transitioning artificial intelligence technologies to operational use. These activities apply AI and machine learning solutions to operational problems and coordinate AI-related initiatives within the Department. No later than one year after the Act entered into force, the Secretary was required to desig-

wide that seeks to regulate a global technological challenge which, while posing risks, also creates opportunities for our societies and economies.[4]

This study provides an initial analysis of the AI Act. It is structured into four parts: the Introduction, the General Part, the Special Part, and the Concluding Remarks. The Introduction sets out the general framework of the study and provides some brief terminological clarifications. The General Part traces the legislative process leading to the AI Act and its related instruments, followed by a comparative overview of the Act. The question of the necessity of this legislation is then examined. Next, the philosophy and objectives of the legislative text are outlined, and the guiding principles that should govern AI are analysed. Then comes an analysis of the scope of its application, along with an outline of its similarities with the General Data Protection Regulation (EU) 2016/679 (GDPR). The main pillars of the AI Act are then analysed, the obligations of the parties (providers, importers, distributors, implementing bodies, authorised representatives) are identified, and the issue of control and supervision of AI at both national and supranational levels is discussed. This is followed by a systematisation of the sanctions regime and liability, along with an analysis of the entry into force of the regulatory framework. The study continues with the Special Part, focusing on key areas that raise significant constitutional concerns, such as biometric identification, labour, democracy, education, health, and innovation. A dedicated section examines whether the revising legislator should incorporate AI into the revised constitutional text. Lastly, there are some concluding remarks. The aim is to critically outline the main aspects of the new regulatory framework and to shed selective light on specific constitutional issues that call for deeper reflection.

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nate a senior Department official with primary responsibility for coordinating AI and machine learning development and demonstration. The designated official's duties include preparing a detailed strategic plan for the development, maturation, adoption, and transition of AI technologies to operational use; accelerating AI development and deployment; governing and overseeing AI and machine learning policy; conducting studies on AI matters; and defining the concept of AI.

[4] Council of the European Union, "Artificial Intelligence Act: Council Gives Final Green Light to the First Worldwide Rules on AI," press release, May 21, 2024, https://www.consilium.europa.eu/el/press/press-releases/2024/05/21/artificial-intelligence-ai-act-council-gives-final-green-light-to-the-first-worldwide-rules-on-ai

Part of this work draws on, and significantly extends, my earlier study titled "The European Artificial Intelligence Act (AI Act): An initial constitutional-ethic reflection", published in epoliteia.

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II. Terminology and characteristics of artificial intelligence

A. Artificial intelligence (AI)

According to Recital 4 of the Regulation, "AI is a fast-evolving family of technologies that contributes to a wide array of economic, environmental and societal benefits across the entire spectrum of industries and social activities. By improving prediction, optimising operations and resource allocation, and personalising digital solutions available for individuals and organisations, the use of AI can provide key competitive advantages to undertakings and support socially and environmentally beneficial outcomes, for example in healthcare, agriculture, food safety, education and training, media, sports, culture, infrastructure management, energy, transport and logistics, public services, security, justice, resource and energy efficiency, environmental monitoring, the conservation and restoration of biodiversity and ecosystems and climate change mitigation and adaptation".

According to Article 3(1) of the Regulation, 'AI system' means a machine-based system 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.

Moreover, in the everyday use of AI, irrespective of the specific purpose, numerous legal issues arise which can be resolved independently of the definition adopted. This is because the regulation of AI is addressed primarily to AI providers, namely, the manufacturers, developers, and distributors of AI applications.[5]

AI is the field of computing concerned with designing and implementing systems that emulate aspects of human intelligence, such as

[5] Michael Rohrlich, *KI und Recht* (Munich: Hanser, 2025), 6.

learning, adaptation, inference, contextual understanding, and problem-solving, and so on.[6]

Machine learning was first conceived by the British mathematician Alan Turing.[7] During World War II, Turing built a machine designed to decode German messages. He later devised another mechanism, which was named in his honour the 'Turing machine'. The machine in question was simple in its design, yet capable of performing any computation. Its creation gave rise to the question of whether a machine could think like a human being. If the answer were affirmative, a further question would arise: to what extent could human thought be controlled or determined? Turing proposed a simple test, based on a game known as 'the imitation game', played by three participants who do not know each other. Two of them, called the witnesses, are a man and a woman, while the third assumes the role of the interrogator. The third player, the so-called interrogator, must determine the gender of each participant without seeing them, relying only on their written answers. The players must try to prevent the interrogator from guessing their gender. The entire game is played, as mentioned, without the aid of external clues such as appearance or vocal characteristics. For that reason, communication takes place via teletypes, revealing only the internal element of communication (the content) and not the external traits of the players (their personal attributes). Turing then replaced one of the human players with a computer. The goal of the game was no longer for the interrogator to identify the players' gender, but to distinguish the human from the machine. If the interrogator could not tell the machine from the human, then the machine had successfully passed the test. This test was regarded as a reliable criterion for identifying human-like thought in a computer, and constitutes the famous Turing Test, which is a way to determine whether a machine, lacking human appearance, could produce speech resembling that of an average person in comparable circumstances. Such a machine could take part in human conversations as if it were a person. According to Turing himself, when computers win the imitation game, they do

[6] John McCarthy, *What is Artificial Intelligence?*, November 12, 2017, http://www-formal.stanford.edu/jmc/whatisai/node1.html

[7] "Turing Machine," Stanford Encyclopedia of Philosophy, https://plato.stanford.edu/entries/turing-machine/

so because humans have programmed them to do so. Humans, on the other hand, take part in the game without having been programmed by any designer.[8]

John McCarthy is also one of the fathers of AI. A pioneer in artificial intelligence, computer science, and interactive computing, he coined the term "artificial intelligence" in 1955. Among his most significant contributions was the development of a programming language designed specifically for AI research, which went on to become one of the field's most influential. AI is a branch of computer science concerned with equipping machines with capabilities that require mental functions similar to those of humans.[9] These include abilities such as reasoning, learning, and self-correction. The aim is to develop computer systems capable of autonomously solving complex problems. It is in this context that the term "artificial intelligence" was coined to encompass computer applications that could imitate specific areas of human knowledge and experience.[10] AI seeks to understand specific areas of human thought and mimic them.[11] It should be noted that the more accurate term is "computational intelligence", as intelligence itself cannot be technologised.[12]

AI differs from conventional software primarily in its ability to solve problems autonomously, to learn and analyse, to adapt to new situations, and to perform more complex tasks not precisely defined by programmers. The basic premise of AI is that intelligence, but not "self-awareness", is independent of the medium in which it is expressed and can therefore be implemented in computers.[13]

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[8] A. M. Turing, "Computing Machinery and Intelligence," *Mind* 59, no. 236 (1950): 442.

[9] Michael Rohrlich, *KI und Recht* (Munich: Hanser, 2025), 1.

[10] Giorgos Giannopoulos, *Introduction to Legal Informatics* (Athens: Nomiki Vivliothiki, 2018), 218.

[11] Ibid.

[12] Fereniki Panagopoulou and Metropolitan of Mesogaia and Lavreotiki Nikolaos (Chatzinikolaou), "Ethical, Philosophical, and Theological Approaches to the Impact of Artificial Intelligence on Human Life," in *Artificial Intelligence, Human Rights, Democracy and the Rule of Law*, ed. Evripidis Stylianidis (Athens: Nomiki Vivliothiki, 2025), 549 ff. (563).

[13] Michael Rohrlich, *KI und Recht* (Munich: Hanser, 2025), 1.

AI refers to systems that exhibit intelligent behaviour by analysing their environment and taking steps, with a certain degree of autonomy, to achieve their objectives.[14] In this sense, AI systems are designed by humans and are capable of perceiving and interpreting data from their environment, making optimal decisions, and reproducing human cognitive functions, such as learning, planning and decision-making.

The discipline of AI engages all five human senses and encompasses various approaches and techniques: (a) machine learning, including deep learning and reinforcement learning; (b) machine reasoning, covering design, programming, knowledge representation and reasoning, search, and optimisation; and (c) robotics, which involves control, perception, sensors, and actuators, as well as the integration of all these techniques into cyber-physical systems.[15]

AI contrasts with human intelligence, as it does not originate from living beings.[16] In reality, it constitutes automated decision-making without human mediation, through sequences of logical operations derived from machine learning or deep learning. Machine learning is divided into supervised and unsupervised. In the first case, algorithms are "trained" to draw conclusions based on data provided by their programmers.[17] By contrast, in unsupervised machine learning, algorithms have not been trained and are left without guidance in drawing conclusions.[18] This in-

[14] European Commission, *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on Artificial Intelligence for Europe*, COM(2018) 237 final, Brussels, April 25, 2018.

[15] High-Level Expert Group on Artificial Intelligence, *A Definition of Artificial Intelligence: Main Capabilities and Scientific Disciplines* (Brussels, December 18, 2018), https://ec.europa.eu/futurium/en/system/files/ged/ai_hleg_definition_of_ai_18_december_1.pdf

[16] Konstantinos N. Christodoulou, "Legal Issues Arising from Artificial Intelligence," in *Law and Technology: 22nd Scientific Symposium of the University of Piraeus and the Hellenic Court of Audit, 28–29 March 2019*, ed. Kornilia Delouka-Igglesi, Anna Ligomenou, and Aristea Sinanioti-Maroudi (Athens–Thessaloniki: Sakkoulas, 2019), 117 ff.

[17] ICO, *Big Data, Artificial Intelligence, Machine Learning and Data Protection* (2017), 7, https://ico.org.uk/media/for-organisations/documents/2013559/big-data-ai-ml-and-data-protection.pdf

[18] Ethem Alpaydin, *Introduction to Machine Learning* (Cambridge, MA: MIT Press, 2020).

volves the capacity for efficient action with little or no supervision.[19] It is important, however, to emphasise the following: (a) machines do not act independently (though they may give the impression of doing so), but mimic human behaviour;[20] (b) the knowledge base is the result of human effort; (c) machines do not learn on their own: they are guided by us; and (d) they do not display discriminatory behaviour on their own (for example, on the basis of race, ethnicity, or gender), but reproduce patterns of human behaviour which they copy.[21]

B. General Purpose Artificial Intelligence (GPAI)

According to Article 3(63) of the Regulation, a General Purpose AI (GPAI) model is defined as an AI model trained on very large volumes of data using self-supervision at a scale that demonstrates significant generality. Such a model can competently perform a wide range of discrete tasks, regardless of how it is brought to market, and may be integrated into a variety of downstream systems or applications. This definition does not cover AI models used, prior to market release, for research, development, or prototyping activities.

A GPAI system is an AI system based on a GPAI model that has the potential to serve a variety of purposes, both for direct use and for integration into other AI systems.

GPAI systems may be used as, or integrated into, high-risk AI systems. GPAI models that do not pose systemic risks will be subject to limited requirements, for example on transparency, whereas those that do pose systemic risks will be required to comply with stricter rules. GPAI systems, unlike task-specific AI systems, do not have a single specified purpose of use. For example, a single bot could be used to generate both love poems

[19] Giorgos Giannakopoulos, *Artificial Intelligence: A Discreet Demystification* (Athens: Ropi, 2020), 129.

[20] Georgios I. Zekos, *Internet and Artificial Intelligence in Greek Law* (Athens–Thessaloniki: Sakkoulas), 73.

[21] Georgios Giannopoulos, presentation at the webinar of the European Laboratory of Bioethics, Technoethics and Law on Artificial Intelligence, May 16, 2022, https://bioethics.panteion.gr/webinar-%cf%84%ce%b5%cf%87%ce%bd%ce%b7%cf%84%ce%ae%cf%82-%ce%bd%ce%bf%ce%b7%ce%bc%ce%bf%cf%83%cf%8d%ce%bd%ce%b7%cf%82/

and hate speech. The system can be likened to digital plasticine: from the same raw material one can fashion outputs of very different risk profiles, depending on how it is used. From the same digital plasticine, one could fashion a harmless toy water pistol, or, if adapted maliciously, something far more dangerous.[22]

C. The parties involved

According to Article 3(3-8), the parties involved are defined as follows:

'Provider' means a natural or legal person, public authority, agency or other body that develops an AI system or a general-purpose AI model or that has an AI system or a general-purpose AI model developed and places it on the market or puts the AI system into service under its own name or trademark, whether for payment or free of charge.

'Deployer' means a natural or legal person, public authority, agency or other body using an AI system under its authority except where the AI system is used in the course of a personal non-professional activity.

'Authorised representative' means a natural or legal person located or established in the Union who has received and accepted a written mandate from a provider of an AI system or a general-purpose AI model to, respectively, perform and carry out on its behalf the obligations and procedures established by this Regulation.

'Importer' means a natural or legal person located or established in the Union that places on the market an AI system that bears the name or trademark of a natural or legal person established in a third country.

'Distributor' means a natural or legal person in the supply chain, other than the provider or the importer that makes an AI system available on the Union market.

'Operator' means a provider, product manufacturer, deployer, authorised representative, importer or distributor.

[22] Rolf Schwartmann, Kristin Benedikt, Moritz Köhler, and Markus Wünschelbaum, *Erste Hilfe zur KI-Verordnung: KI-Kompetenz, Rechte, Pflichten* (Munich: C.H. Beck, 2025), 7.