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Artificial Intelligence Act - European draft Regulation on artificial intelligence

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CONTEXT, SCOPE AND PURPOSE

Artificial Intelligence Act

Artificial Intelligence Act

CONTEXT

BUILDING THE EUROPEAN LEGAL FRAMEWORK FOR AI

2018   European Strategy on AI

Coordinated Plan on AI

2019   Guidelines for Trustworthy AI

2020   Assessment List for Trustworthy AI

White paper on AI

2021   Proposal for a Regulation laying down harmonised rules on artificial intelligence (Artificial Intelligence Act)
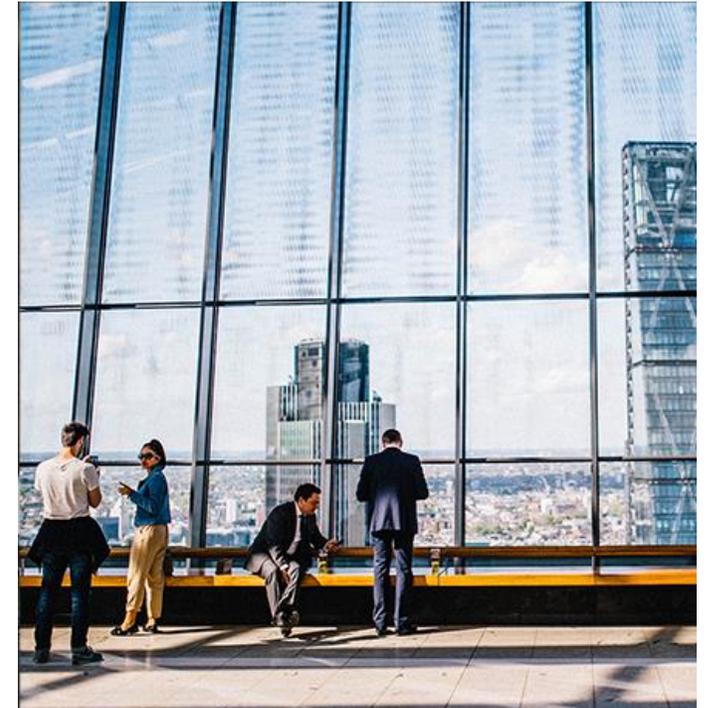
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OBJECTIVES OF THE REGULATION

SAFETY

Guaranteeing safety for citizens and businesses

UNIVERSALITY

Popularization of solutions based on artificial intelligence

GROWTH

Increase innovation and investment in artificial intelligence across the European Union

LEGAL FRAMEWORK OF THE REGULATION

Artificial Intelligence Act

Artificial Intelligence Act

THE SCOPE OF THE REGULATION

◇ harmonized rules for the placing on the market, putting into service and use of artificial intelligence systems within the European Union;

◇ prohibitions on specific artificial intelligence practices;

◇ the specific requirements for high-risk artificial intelligence systems and the obligations on those who operate such systems;

◇ harmonized rules on transparency for artificial intelligence systems designed to interact with natural persons, emotion recognition and biometric categorization systems, and artificial intelligence systems used to generate or manipulate images, audio or video content;

◇ post-market monitoring and market surveillance provisions.
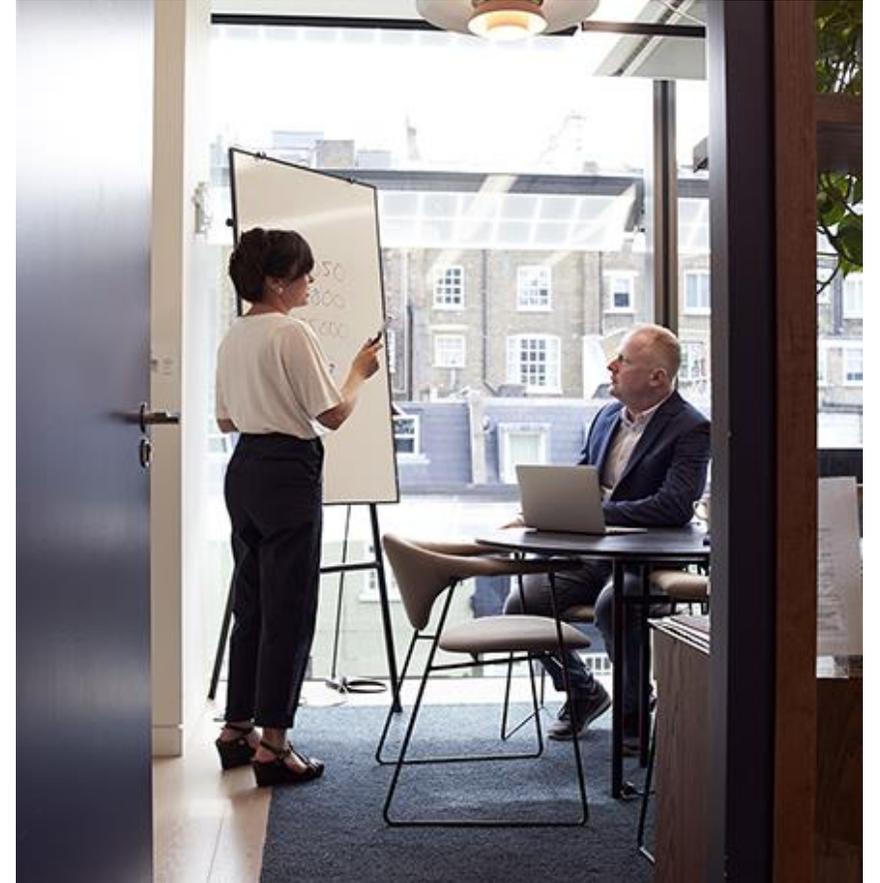
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DEFINITION OF ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE SYSTEM

„Artificial intelligence system" means software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with

AI TECHNIQUES AND APPROACHES

◇ Machine learning approaches, including supervised, unsupervised and reinforcement learning, using a wide variety of methods including deep learning;

◇ Logic- and knowledge-based approaches, including knowledge representation, inductive (logic) programming, knowledge bases, inference and deductive engines, (symbolic) reasoning and expert systems;

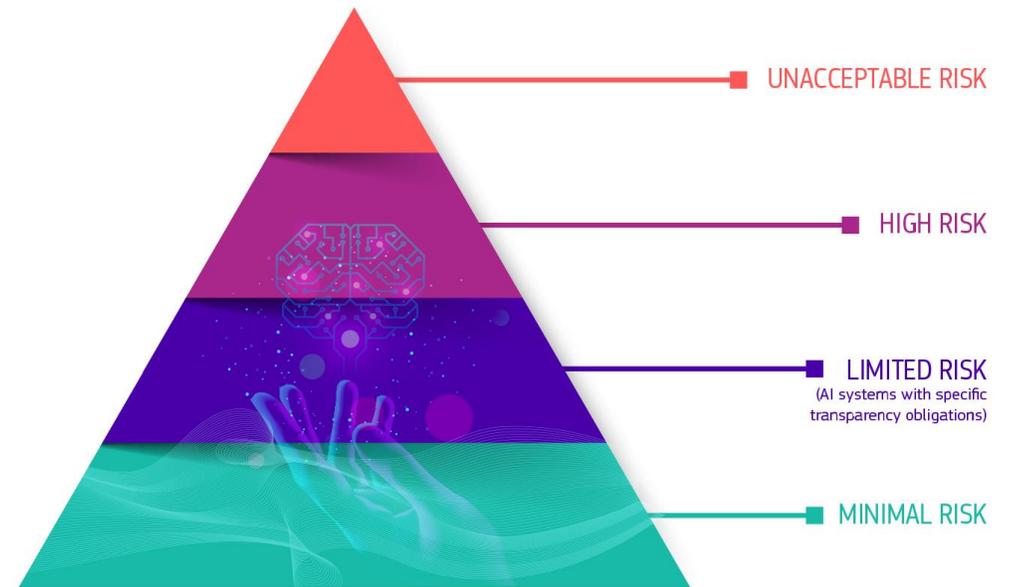◇ Statistical approaches, Bayesian estimation, search and optimization methods.

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CLASSIFICATION OF AI SYSTEMS

RISK-BASED CLASSIFICATION

◇ **Unacceptable risk**– artificial intelligence systems which, because they are contrary to the values of the Union, for example because they infringe fundamental rights, have been prohibited.

◇ **High risk**- High risk - artificial intelligence systems that carry significant risks, to security, and thus should be subject to strict regulations and requirements.

◇ **Limited risk**- artificial intelligence systems that do not involve significant risk such as chatbots. However, these systems should be subject to certain minimum transparency obligations so that users of these systems are aware that they are interacting with artificial intelligence.

◇ **Minimal risk**- other artificial intelligence systems such as AI-based computer games, the use of which has minimal or no security risk. These systems are not subject to the provisions and requirements of the Regulation.

UNACCEPTABLE RISK

HIGH RISK

LIMITED RISK
(AI systems with specific transparency obligations)

MINIMAL RISK

Source: https://ec.europa.eu

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UNACCEPTABLE RISK

PROHIBITED AI PRACTICES

◇ practices that show significant potential for manipulating people, based on subliminal techniques acting on their subconscious or exploiting the weaknesses of specific vulnerable groups,

◇ practices that allow public authorities to use social scoring systems,

◇ practices that use real-time remote biometric identification in public spaces for law enforcement purposes (unless certain limited exceptions apply)
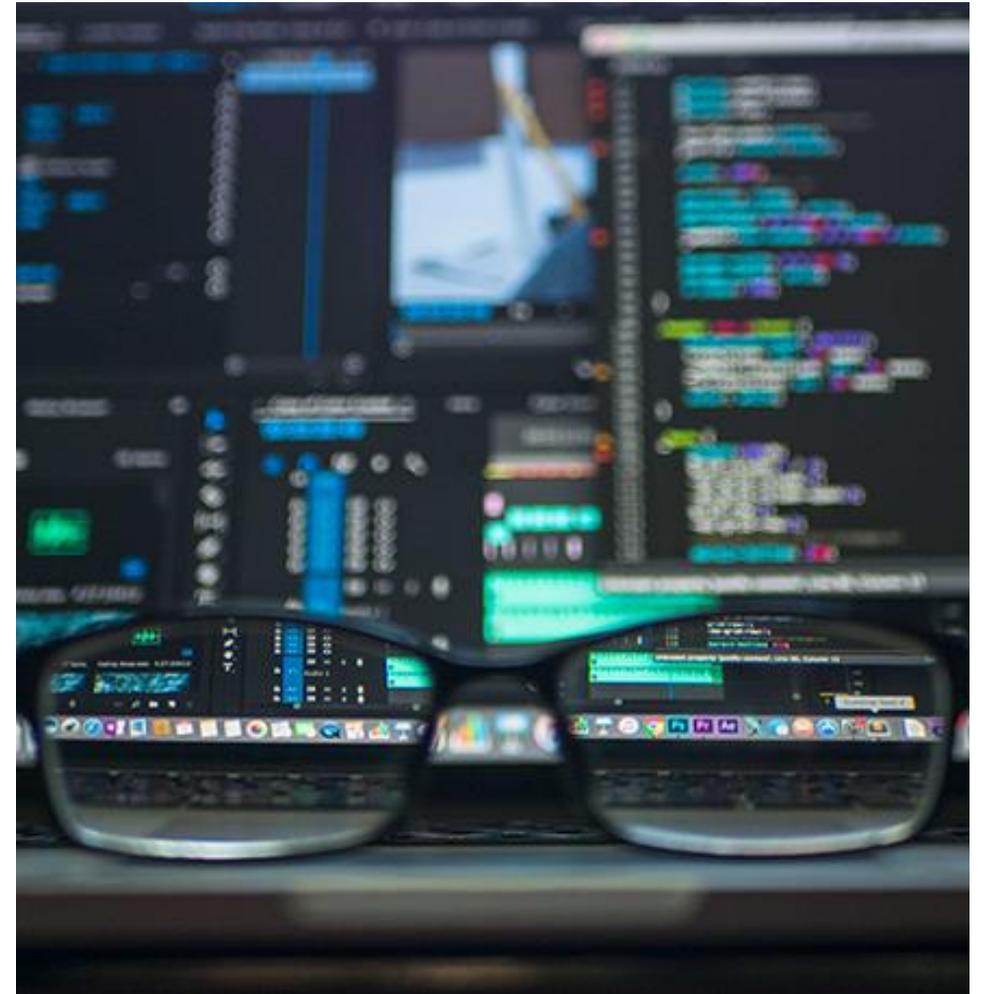
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HIGH RISK AI

HIGH RISK AI DEFINITION

High risk AI systems include the scope of artificial intelligence technology used:

◇ in the vocational education and training system (access to education, assessment of exams),

◇ in management and operation of critical infrastructure,

◇ in biometric identification and categorization of individuals,

◇ in hiring, workforce management and access to self-employment,

◇ in terms of access to and use of basic private services and public services and benefits (e. g. credit rating),

◇ to prosecute crimes and enforce the law,

◇ to manage migration, asylum and border control,

◇ In the administration of justice and the democratic process.

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HIGH RISK AI

REQUIREMENTS FOR HIGH RISK AI

◇ an obligation to have an adequate system of risk assessment and mitigation;

◇ an obligation to use high-quality datasets to feed the artificial intelligence algorithm, aimed at minimizing the risk of discriminatory behavior of the algorithm;

◇ an obligation to keep records of artificial intelligence activity to enable assessment of algorithm performance and traceability of results, including an obligation to keep logs;

◇ an obligation to draw up and keep up to date a documentation containing all information about the artificial intelligence system and the purpose for which it is being used, so that compliance of the artificial intelligence system with the requirements can be assessed by the relevant authorities;

◇ an obligation to ensure human oversight over the artificial intelligence algorithm;

◇ an obligation to provide users with sufficiently clear information about the artificial intelligence system;

◇ an obligation to ensure a high level of robustness, security and accuracy of the artificial intelligence algorithm.
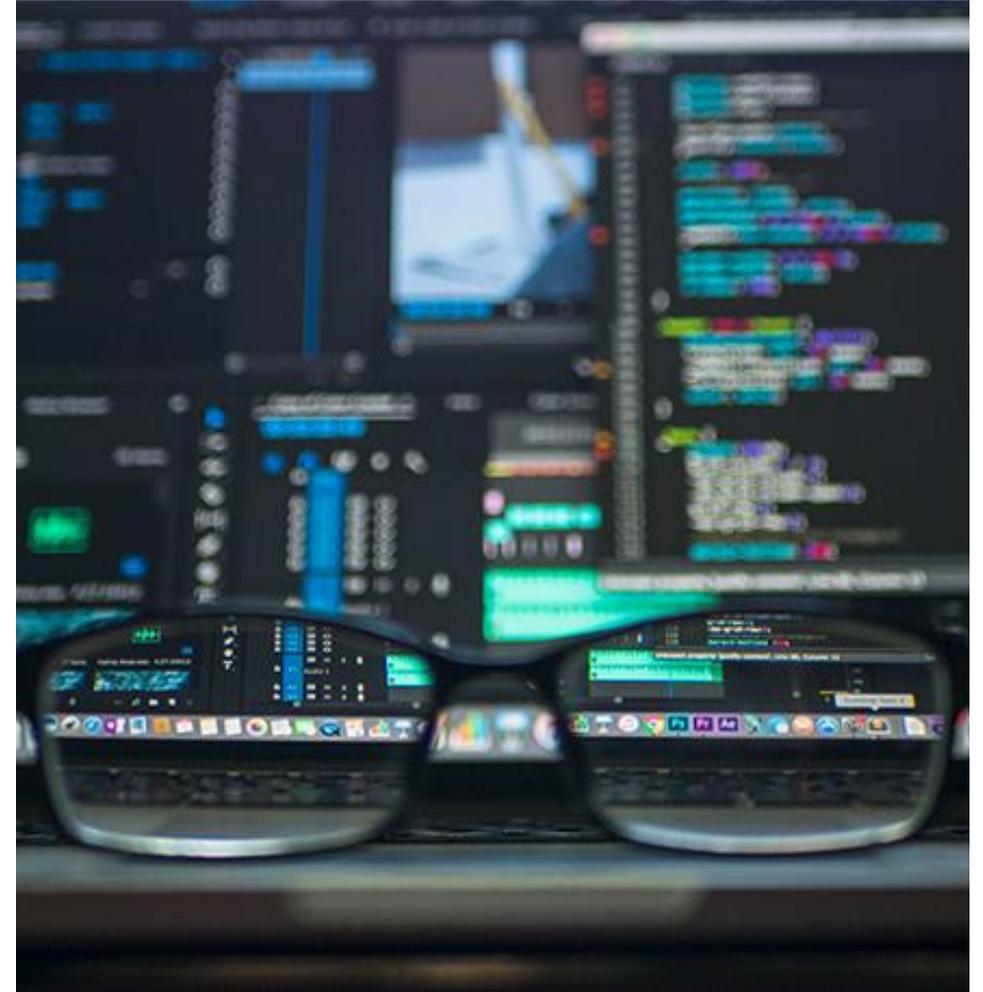
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SYSTEM OF PENALTIES

PENALTIES FOR NON-COMPLIANCE WITH THE REGULATION

◇ up to **30 000 000 EUR** or, if the offender is company, up to **6 %** of its total worldwide annual turnover for the preceding financial year, whichever is higher for:

    ◇ non-compliance with the prohibition of the artificial intelligence practices;

    ◇ non-compliance of the artificial intelligence system with the data quality requirements used by artificial intelligence;

◇ up to **20 000 000 EUR** or, if the offender is a company, up to **4 %** of its total worldwide annual turnover for the preceding financial year, whichever is higher for the non-compliance of the AI system with any other requirements or obligations under the regulation;

◇ up to **10 000 000 EUR** or, if the offender is a company, up to **2 %** of its total worldwide annual turnover for the preceding financial year, whichever is higher for supplying incorrect, incomplete or misleading information to notified bodies and competent national authorities in response to a request from them.
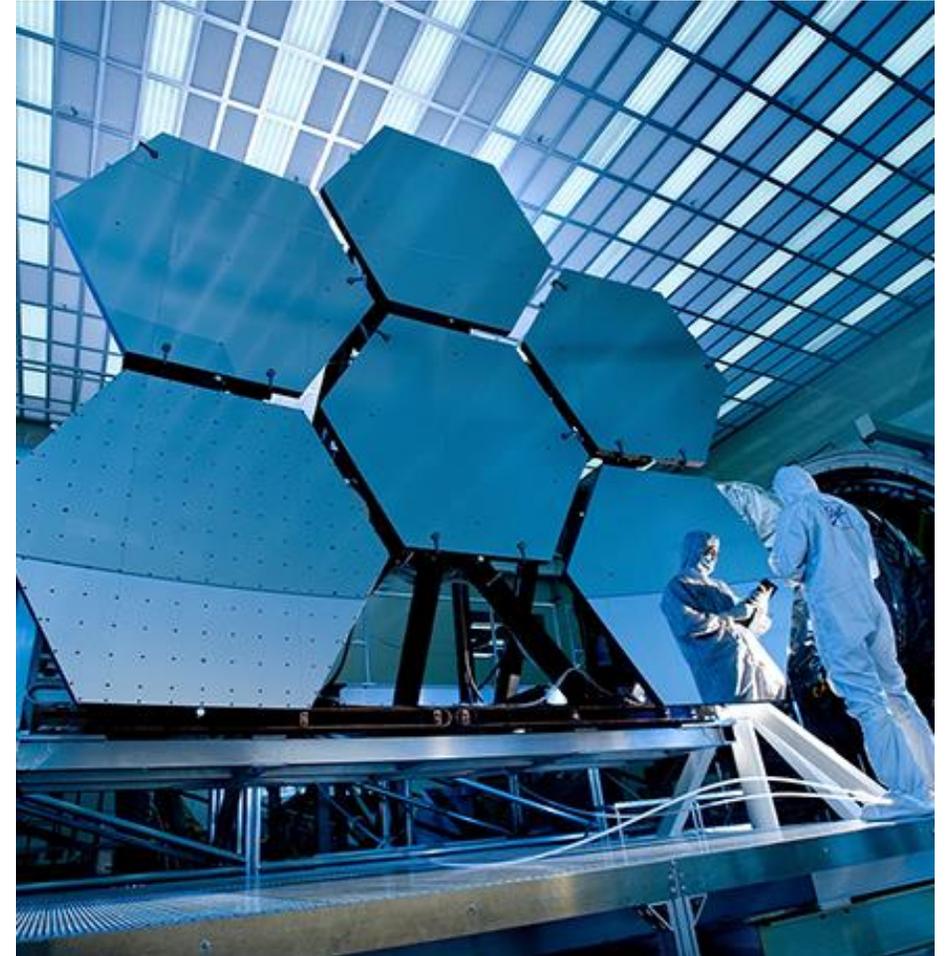
THE FUTURE OF AI REGULATION

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UPCOMING CHALLENGES AND DOUBTS

DEFINITIONS

◇ Is the definition of artificial intelligence too broad?

◇ Doesn't the definition of artificial intelligence also include pseudo-intelligent solutions?

◇ Is the used definition of high-risk artificial intelligence precise and does it really include all AI solutions that may carry a high security risk?

◇ Are the definitions technology neutral?

CONTROL OVER AI

◇ In practice, with the development of AI technology, could it become a challenge to ensure the intelligibility of the algorithm?

◇ With the increasing complexity of algorithms and the use of machine learning technologies, could human control and oversight of the algorithm be difficult in the future?

COMPETITIVENESS

◇ Will the establishment of additional AI requirements natively affect the competitiveness of entities operating in the European Union?

DATA QUALITY

◇ What is the impact of data quality on the effects of the algorithm based on artificial intelligence solutions?

◇ Is providing high-quality data powered by artificial intelligence a challenge?