ARTIFICIAL INTELLIGENCE AND SUPERCOMPUTING: NEWS FROM THE EUROPEAN UNION

Artificial intelligence (AI) involves the use of digital technology to create systems that can perform tasks typically requiring human intelligence. These tasks range from problem-solving and decision-making to language understanding and visual perception. The implementation of AI has the potential to significantly enhance various sectors, leading to a more sustainable and competitive economy, while improving safety, education, and healthcare and contributing to the fight against climate change. However, as AI technology continues to advance, there is a growing recognition of its potential risks, such as privacy concerns and misuse. This has led to a consensus on the importance of regulating AI to foster an ethical and human-centric approach.

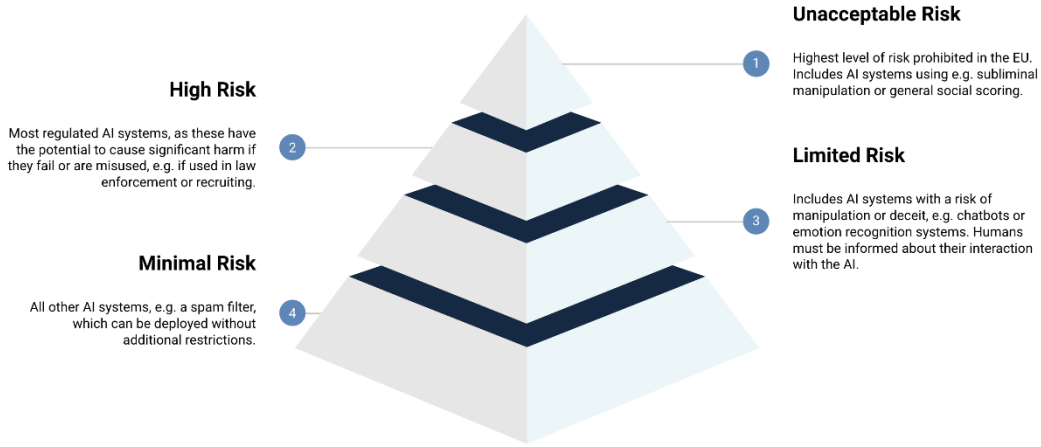
The European Union has adopted a comprehensive approach to AI, aiming at harnessing the benefits of AI while ensuring the protection of its citizens and businesses. The EU seeks to enhance its global competitiveness and to establish itself as a global leader in AI innovation and application. In May, the EU made significant advancements in the fields of AI and supercomputing with two major announcements. On May 21st, the Council gave its final approval to the Artificial Intelligence Act, marking a pivotal step in establishing comprehensive regulations. On May 23rd, the Council reached a political consensus on the use of supercomputing technologies to advance AI development. These efforts highlight the EU's commitment to fostering a regulated and innovative AI ecosystem.

Artificial intelligence act:

The Artificial Intelligence Act is the world's first comprehensive legislation regulating AI technology. Its primary goal is to promote the adoption of safe, trustworthy, and lawful AI across the EU single market, ensuring the respect of the fundamental rights of EU citizens. Central to the AI Act is a commitment to greater transparency in the use and development of AI systems. This legislation adopts a "risk-based" approach, meaning that the level of regulatory scrutiny depends on the potential risk an AI system poses to society.

The AI Act categorizes AI systems into four risk levels:

1) **Minimal or no risk:** systems, deemed to pose minimal or no risk, will remain unregulated and can continue to be used without interference.
2) **Limited risk:** systems that present limited risks will face minimal transparency requirements.
3) **High risk:** systems that pose high risk will be allowed in the market but they must meet specific requirements and obligations to ensure safety and compliance.
4) **Unacceptable risk:** systems identified as causing unacceptable risks will be banned outright. Example of these are systems used for cognitive behavioural manipulation, predictive policing, emotion recognition and social scoring. Moreover, the use of biometric identification systems, including facial recognition, will also be prohibited, with limited exceptions.



The AI act applies exclusively to areas within EU jurisdiction, providing exemptions for systems used solely for military, defence, or research purposes. To ensure proper enforcement, several governing bodies will be established, including an AI Office within the European Commission, a scientific panel of independent experts, an AI Board with representatives from member states, and an advisory forum for stakeholders. Moreover, before deploying AI systems for public services, an assessment of their impact on fundamental rights will be required.

Lastly, the Act introduces AI regulatory sandboxes, that is controlled environments where innovative AI systems can be developed, tested, and validated within a legal framework that supports innovation.

Political agreement on the use of super-computing for AI development:

The EuroHPC Joint Undertaking, established in 2018, is a public-private partnership aimed at coordinating the efforts of EU member states in advancing European supercomputing capabilities. Currently, it oversees nine supercomputers strategically located across Europe. The initiative's primary goals include developing and maintaining a robust ecosystem for supercomputing, quantum computing, and data infrastructure within the EU. Additionally, it focuses on fostering the development of supercomputing system components, technologies, and knowledge.

On January 24, 2024, the European Commission proposed a regulation to amend the existing legal framework, specifically the 2018 Council Regulation (EU) 2021/1173. This amendment seeks to introduce a new objective for the EuroHPC Joint Undertaking: supporting the development of an AI ecosystem within the Union through the establishment and operation of AI Factories. These AI Factories will serve as entities providing supercomputing service infrastructure tailored for AI.

The regulation explicitly mentions that startups and small-medium enterprises should be primary beneficiaries of these. Thus, it aims at making these technologies more accessible and facilitating the training and development of their AI models. Following the political agreement, hosting entities

will be eligible for Union financial contributions covering up to 50% of the acquisition and operating costs of AI supercomputers. The primary use of these AI supercomputers will be to develop, test, evaluate, and validate large-scale, general-purpose AI training models and emerging AI applications, thus furthering AI innovation within the Union.

In conclusion, the European Union's strategic initiatives in AI and supercomputing underscore its commitment to fostering innovation while ensuring ethical standards and safety. Moving forward, it is crucial for the EU to continuously adapt its regulatory and technological frameworks to address emerging challenges and opportunities in AI. By doing so, the EU can maintain its leadership, driving economic growth and societal benefits while upholding fundamental rights and ethical standards.

Sources

Graph

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Artificial intelligence (AI) act: Council gives final green light to the first worldwide rules on AI.

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