

Deshpande, Advait

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# AI regulation and policy pathways in China, European Union, and the USA

Advait Deshpande  
School of Computing & Communications  
The Open University  
United Kingdom

## Abstract

With the emergence of generative Artificial Intelligence (AI) tools (including large language models) in the popular discourse, the debate on managing, governing, and regulating the impacts of AI on society has grown considerably. In part due to the unique breadth of AI's impacts and its varying implications for the various strata of human workforce, and society, approaches to AI regulation appear to diverge significantly. This combination of scale and potential disruption has caught the attention of regulators worldwide, with China, European Union (EU), and the United States of America (USA) as the forerunners in the regulatory activity.

The aim of this paper is to examine the current state-of-play vis-à-vis regulatory approaches to AI and related technologies in China, EU, and the USA. The paper draws on documentary sources and peer-reviewed literature to examine the political and market dynamics at work, the policy pathways, including the processes, the decision-making approaches, and the intended outcomes of these regulatory and legislative approaches. The findings suggest that China's state-directed approach is aimed at integration of technical oversight, social harmony, and the growth of its sovereign AI capabilities. The EU's approach is a comprehensive, risk-based regulatory framework for AI building on its strengths in exporting technology-related rule-making. The USA's approach to AI regulation is decentralised with multi-agency legislation targeting specific AI applications and outcomes while retaining its advantages in AI innovation. The findings are expected to be of interest to academics, researchers, and key stakeholders from government, industry, and the third sector actively engaged in regulation and governance of AI.

**Keywords:** AI regulation, AI policy, China, European Union, Technology policy, USA

# 1. Introduction

Due to the growth in scalable high-performance hardware, ever-increasing availability of structured and unstructured data on all forms of human activity at a previously unimaginable rate, and advancements in computationally-intensive analytical methods, Artificial Intelligence (AI) technologies, and products and services using AI technologies are expected to dramatically transform the way humans, businesses, governments, and societies operate. Industry 4.0 and the Fourth Industrial revolution (4IR) are the oft-described metaphors to summarise the scale and breadth of transformation AI could bring to the human society. AI systems may be manifested in multiple forms including software and hardware based on generative AI, natural language processing, machine learning, deep learning, recurrent neural networks, autonomous systems, and sentient systems (to name a few). In particular, frontier AI models present a two-fold societal challenge: the use of the models can proliferate very quickly; and there is limited scope to prevent the misuse of the model in practice (Anderljung *et al.*, 2023).

With the emergence of generative AI tools (including large language models) in the popular discourse, the debate on managing, governing, and regulating the impacts of AI on society has grown considerably (Roberts *et al.*, 2024) resulting in a ‘race to AI regulation’ (Smuha, 2021; Lobel, 2024). Given the essential role of compute providers in the deployment of AI infrastructure and intermediary to AI services provision, Heim *et al.* (2024) have argued that their activities should also be under the purview of any regulatory provisions. Judge, Nitzberg and Russell (2025) argue that to address the unique challenges posed by AI, effective regulatory or governance oversight will likely require consolidated authority, licensing regimes, mandated training data and modelling disclosures, formal verification of system behaviour, and the capacity for rapid intervention. In part due to the unique breadth of AI's impacts and its varying implications for the various strata of human workforce, and society, approaches to AI regulation appear to diverge significantly (Hutson, 2023; Roberts *et al.*, 2023; Wu and Liu, 2023).

The pace of developments, scale of impact, and potential disruption posed by the growth of AI sector has caught the attention of regulators worldwide, with China, European Union (EU), and the United States of America (USA) as the forerunners in the regulatory activity (Hutson, 2023; Cole, 2024; Davtyan, 2024; Vujicic, 2024b). China has identified regulatory measures at national, regional, and local levels aimed at supervising deep-fake technologies and services, addressing monopolistic behaviours, and promoting safe development of generative AI (Hu and Liu, 2024). EU has taken a framework-based approach to similar to the General Data Protection Regulation (GDPR) to develop the EU AI act which introduces a risk-based classification of AI systems to determine the regulatory requirements (Floridi, 2021; Mökander *et al.*, 2022; Vujicic, 2024a). The USA, as yet, does not have a central approach but a patchwork of state-level laws and legislations combined with executive orders. However, there is now work taking place in the USA to which could result in several horizontal and vertical federal AI laws being legislated in 2024 and beyond (Finocchiaro, 2024; Lancieri, Edelson and Bechtold, 2024; Vujicic, 2024a). Each of these approaches covers a wide variety of AI's perceived impacts from individual privacy and security, impacts on businesses and

current rules governing them, human welfare, labour laws, national security, to existential risk.

The aim of this paper is to examine the current state-of-play vis-à-vis regulatory approaches to AI and related technologies in China, EU, and the USA. The paper will consider the following research questions:

- What are the currently proposed / legislated approaches to AI regulation in China, EU, and the USA?
- What are the political and market dynamics shaping the regulatory regimes in China, EU, and the USA?
- What are the intended outcomes, and the processes and decision-making approaches driving the regulatory and legislative regimes in China, EU, and the USA?
- What are the perceived gaps in these approaches and the potential policy measures to address these gaps?

To address these questions, the rest of the paper is organised as follows:

- Section 2 briefly describes the methodology adopted for the paper.
- Detailed case studies on China, EU, and the USA primarily focussed on factual information on the status of the regulatory approaches are presented in section 3.
- Section 4 discussion covers the policy pathways and causal mechanisms which shape these regulatory regimes in China, EU, and USA.
- Section 5 concludes the paper by drawing on the findings from section 3 and 4.

## **2. Methodology adopted in the paper**

This paper used a desk research strategy combining documentary sources of regulatory and legislative activities on AI in conjunction with peer-reviewed, high-quality literature analysing the AI regulation in China, EU, and the USA:

- The documentary sources were identified through recursively researching the web for published news items and commentaries of ongoing regulatory and legislative developments from 2015 to 2025. Based on these searches, the source documents for regulatory and legislative activities were chosen provided they had a clearly defined AI-related objective, and were either in active development, close to completion, or approved for implementation. Despite of the recursive, iterative nature of the web searches however, some relevant regulatory and legislative activity may have been overlooked.
- The peer-reviewed literature was identified through searches on Google Scholar with a focus on articles published from 2020 to 2025 to ensure that any analysis and insights in the academic literature were aligned with the rapidly changing nature of the AI developments. The articles were selected based on relevance to the research questions targeted by this paper.
- Following combination of search strings informed the searches for documentary sources and literature review: '(AI or artificial intelligence or machine learning or

ml) + regulation + China'; '(AI or artificial intelligence or machine learning or ml) + regulation + (EU or European Union or EC or European Commission)'; '(AI or artificial intelligence or machine learning or ml) + regulation + (US or USA or United States of America)'

- From the documentary sources, data was extracted for each of the following four key components of regulatory approach (Coglianese, 2012):
  - Regulator, the entity that creates the rule and dispenses the consequences.
  - Target, which is the individual or organisation to which a regulatory instrument applies.
  - Command, which is the rule that can direct the target to adopt means or achieve specific ends; and
  - Consequences, which can be either negative or positive depending on how the target meets the predicate conditions identified in the Command.

The resulting data extraction informs the overview of AI regulation (and governance) in China, EU, and the USA presented in section 3. Although the regulation of AI is still at a formative stage, without effectively proven ex-ante or ex-post approaches, there is already a growing body of literature on AI regulation (Smuha, 2021; Anderljung *et al.*, 2023; Hutson, 2023; Wu and Liu, 2023; Cole, 2024; Davtyan, 2024; Heim *et al.*, 2024; Lobel, 2024; Vujicic, 2024b, 2024a; Judge, Nitzberg and Russell, 2025). There appears to be increased attention to examining the strengths and weaknesses, long-term effects of the regulatory approaches in China (Sheehan, 2023; Dong and Chen, 2024; Franks, Lee and Xu, 2024; Ma, 2024; Xu, 2024; Zhang, 2025), EU (Glauner, 2021; Gstrein, 2022; Justo-Hanani, 2022; Hacker, 2023; Musch, Borrelli and Kerrigan, 2023; Wachter, 2023; Cantero Gamito and Marsden, 2024; Gstrein, Haleem and Zwitter, 2024), and the USA (Chae, 2020; Gutierrez Gaviria, 2022; Davtyan, 2025; DePaula *et al.*, 2025). There is also growing literature aimed at comparing these regulatory regimes (Rádi, 2023; Chun, Witt and Elkins, 2024; Cihanová, 2024; Kuzior *et al.*, 2024; Gonzalez Torres and Ali-Vehmas, 2025; Vasconcelos Novaes and Wanderley Júnior, 2025). The aim of this paper is to examine the political and market dynamics which shape the Chinese, EU, and USA's AI regulatory regimes rather than compare, critique or analyse the specific strengths and weaknesses of these approaches. The discussion in sections 3 and 4 is therefore focussed on the intended outcomes, and the processes, the decision-making approaches influencing these regulatory and legislative regimes. As a result, this paper prioritises the documentary sources as part of the discussion. The peer-reviewed literature is primarily used to corroborate the details identified in the documentary sources. To distinguish the different nature of the sources, the documentary sources are listed as footnotes and the peer-reviewed literature is cited in-line in the author-year format, followed by detailed bibliography at the end of the paper.

Given that there are multiple definitions of AI, this paper uses the definition of AI covering both AI-based and enabled hardware and software. AI therefore refers to systems that display intelligent behaviour by analysing their environment and taking actions – with some degree of autonomy – to achieve specific goals. AI-based systems can be purely software-based, acting in the virtual world (e.g. voice assistants, image analysis software, search engines, speech and face recognition systems) or AI can be embedded in hardware devices (e.g.,

advanced robots, autonomous cars, drones or Internet of Things applications) (European Commission, 2018; Lucero, 2019; Ulnicane, 2022). The following discussion also recognises that the most common use of AI in popular discourse mainly refers to the use of algorithms for automated decision-making and autonomous machines in different industries (Lucero, 2019).

### **3. AI regulation and governance-related activities in China, EU, and the USA**

#### **3.1 China**

Since 2015, China has released several national-level policy documents with the aim of developing and deploying AI in a variety of sectors. While some of these documents considered AI as one of the technologies as part of approaches aimed at ensuring equitable economic growth, since 2016 policy documents specifically focussed on AI have been published. The ‘New Generation Artificial Intelligence Development Plan’ (AIDP) (新一代人工智能发展规) released by the China’s State Council in July 2017 (Webster *et al.*, 2017)<sup>1</sup>, outlined China’s aims to become the world leader in AI by 2030, to monetise AI into a trillion-yuan (US\$150 billion) industry, and to emerge as the driving force in defining ethical norms and standards for AI (Roberts *et al.*, 2019). With the publication of the AIDP, AI rose to the core of China’s strategy to achieve goals of economic, regional and national development. Since the publication of AIDP, multiple additional regulations and provisions in the form of the Deep Synthesis Provisions (2023), Interim Measures for Generative Artificial Intelligence Service Management (2023), Internet Information Service Algorithmic Recommendation Management Provisions (2021), and Personal Information Protection Law (2021), each aimed at regulating AI at the national level have been published. At the provincial and local level, the Shanghai Regulations on Promoting the Development of the AI Industry (2022), and the Regulations on Promoting Artificial Intelligence Industry in Shenzhen Special Economic Zone (2022) are the notable developments.

##### **3.1.1 Regulator**

The actors involved in shaping the regulation and governance of AI in China include the State Council, the Ministry of industry and Commerce, the Chinese Academy of Information and Telecommunications, Institute for Standardization of Electronic Technologies of the People’s Republic of China, the Academy of Social Sciences of the People’s Republic of China, Office of the Central Cyberspace Affairs Commission, Cyberspace Administration of China, and the Chinese Ministry of Industry and Information Technology (MIIT). The Chinese Communist Party (CCP) has a broad oversight of all aspects of governance and administration at national and state-level, and is therefore a crucial actor when China’s approach to AI regulation is considered.

Overall, Lucero (2019) argues, the CCP’s approach appears aimed at regulation of AI as part of managing its future influences and the rhetorical and physical spaces that such an

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<sup>1</sup> The original Chinese-language document issued by China’s State Council is available here: [http://www.gov.cn/zhengce/content/2017-07/20/content\\_5211996.htm](http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm)

influence could cover. Beyond scientific or technological aims of defining or clarifying goals of AI deployment, the approach is aimed at making China one of the pioneers and leaders of the legitimate use, definition, and description of the technology and its potential benefits. The recent regulatory measures, devised at national, regional, and local levels, are aimed at supervising deep-fake technologies and services, addressing monopolistic behaviours, and promoting safe development of generative AI (Hu and Liu, 2024).

At the company level, China is also seeking to participate in the development of international standards in the field of AI. Thus, Baidu became the first Chinese company to join the "Partnership on AI" (PAI).<sup>2</sup> This non-profit organisation founded in 2016, develops ethical guidelines for AI research and has Amazon, Google, Facebook, IBM, and Microsoft on its board. However, as of late 2020, Baidu had left this organisation citing the cost of membership and financial pressures (Knight, 2020).

### 3.1.2 Target

Given the top-down nature of regulatory activity, there is no single target aimed at as part of this regulatory and governance activity. After the publication of AIDP, the importance of strengthening organisation and implementation, between provinces and ministries has been emphasised in subsequent documents without specific details of how this coordination would function in practice. As a result, the nature of guidance adopted by various provinces and incentives available to universities, research centres, and companies is likely to differ significantly depending on the type of stakeholder (Roberts *et al.*, 2019).

Relying on local governments, China has supported Beijing, Shanghai, Harbin and other local governments to carry out artificial intelligence technology demonstration, policy experiment and social experiment, as part of its innovation and development pilot zones (Duan *et al.*, 2022).

Tech giants such as Baidu, Alibaba and Tencent (BAT) have been named as 'National Champions in AI' to help stimulate and steer AI innovation and development in China (Kumar, 2021). Alibaba, in particular, is considered to have the advantages of economies of scale, a deep technical foundation, a clear development direction and strategy, and a perfect enterprise system and governance system. Baidu has been tasked with the development of autonomous driving, Alibaba with the development of smart cities, and Tencent with computer vision for medical diagnoses (Jing and Dai, 2017; Roberts *et al.*, 2019). Although other companies can compete in these fields, historically the status of 'national champion' has helped larger companies receive preferential contract bidding, easier access to finance, and sometimes market share protection (Graceffo, 2017; Roberts *et al.*, 2019). In other cases, however, there is no specific endorsement in other cases. For example, the AIDP promotes smart courts instead of having a national champion for the administration of justice in China. The goal appears to be developing AI for evidence collection, case analysis, and legal document reading (Roberts *et al.*, 2019). Despite being accorded the status of 'national champions' each of these companies is also likely to face regulatory and legislative interventions as China seeks to strengthen financial supervision, implement anti-monopoly measures, and safeguard market stability and consumer rights and interests (Duan *et al.*, 2022).

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<sup>2</sup> <https://partnershiponai.org/>.

Since 2021, China has been more proactive in regulating AI technologies, and in 2023 it introduced multiple pieces of AI regulation at the national level, with a strong focus on digital platforms and AI-generated content such as deep fakes. For example, Deep Synthesis Provisions (2023) are aimed strengthening China's supervision over 'deep fake' technologies and services, and are expected to change how AI-generated content is produced for and consumed by Chinese citizens. Internet Information Service Algorithmic Recommendation Management Provisions (2021) are considered parallel to the EU's Digital Markets Act (DMA) and Digital Services Act (DSA). These provisions aim to address monopolistic behaviour by platforms and require that providers of AI-based personalised recommendations in mobile applications uphold user rights. China's Algorithmic Registry<sup>3</sup> includes a security assessment of registered algorithms. However, the registry is not exclusively focussed on AI technologies and platforms and the extent to which it can provide meaningful insight into black box technologies is not fully understood at this stage.

### 3.1.3 Command

Following table provides a detailed listing of notable AI-related plans, policy activities, and principles published by China in relation to governance and regulation of AI since 2015.

**Table 1 List of AI regulation and governance-related activities in China**

Year	Activity	Actor(s)	Command
2023	Interim Measures on Generative AI Services Management <sup>4</sup>	Office of the Central Cyberspace Affairs Commission, Cyberspace Administration of China	To promote the safe development and application of generative AI through adherence to China's core values and taking action against bias and other harmful outputs
2023	Deep Synthesis Provisions <sup>5</sup>	Office of the Central Cyberspace Affairs Commission, Cyberspace Administration of China (CAC)	To strengthen China's supervision over 'deep fake' technologies and services, these provisions aim to change how AI-generated content is produced in China
2022	Shanghai Regulations on Promoting the Development of AI Industry <sup>6</sup>	Shanghai Municipal Authority	To promote innovative development of AI by the industry. It introduces a graded management system and enforces sandbox supervision, where companies are given a designated space to test and explore technologies.

<sup>3</sup> <https://carnegieendowment.org/posts/2022/12/what-chinas-algorithm-registry-reveals-about-ai-governance?lang=en>

<sup>4</sup> [https://www.cac.gov.cn/2023-07/13/c\\_1690898327029107.htm](https://www.cac.gov.cn/2023-07/13/c_1690898327029107.htm)

<sup>5</sup> [https://www.cac.gov.cn/2022-12/11/c\\_1672221949318230.htm](https://www.cac.gov.cn/2022-12/11/c_1672221949318230.htm)

<sup>6</sup> <https://english.shanghai.gov.cn/en-LocalRules/20240913/4395d1563dd548b39406cbe8833c9ef6.html>

Year	Activity	Actor(s)	Command
2022	Regulations on Promoting AI Industry in Shenzhen Special Economic Zone <sup>7</sup>	Justice Bureau of Shenzhen Municipality	To encourage governmental organisations in China, specifically in the Shenzhen Special Economic Zone, to be at the forefront of AI adoption and development, by increasing financial support for these endeavours.
2022	A proposal to utilise the effectiveness of AI	Chinese Ministry of Industry and Commerce	To utilise the effectiveness of AI in many aspects, such as epidemic control, office, education, diagnosis, vaccine development, etc.
2021	Personal Information Protection Law <sup>8</sup>	National People's Congress of the People's Republic of China	To protect the privacy and personal information of Chinese citizens and imposes obligations on Chinese organisations and foreign companies operating in China.
2021	Next Generation Artificial Intelligence AI Code of Ethics <sup>9</sup>	China's Ministry of Science and Technology	To cover the entire life cycle of AI and provide guidance for natural and legal persons, as well as other relevant institutions.
2021	Internet Information Service Algorithmic Recommendation Management Provisions <sup>10</sup>	Cyberspace Administration of China (CAC), Ministry of Industry and Information Technology, and Ministry of Public Security, and the State Administration for Market Regulation (SAMR)	To address monopolistic behaviour by platforms and require that providers of AI-based personalised recommendations in mobile applications uphold user rights.
2019	"New Generation AI Governance Principles:	Chinese Ministry of Science and Technology	To improve coordination between AI development and governance to ensure that AI is safe, controllable and reliable,

<sup>7</sup> [https://sf.sz.gov.cn/fggzywyb/content/post\\_11216296.html](https://sf.sz.gov.cn/fggzywyb/content/post_11216296.html)

<sup>8</sup> [http://en.npc.gov.cn.cdurl.cn/2021-12/29/c\\_694559.htm](http://en.npc.gov.cn.cdurl.cn/2021-12/29/c_694559.htm)

<sup>9</sup> [https://www.most.gov.cn/kjbgz/202109/t20210926\\_177063.html](https://www.most.gov.cn/kjbgz/202109/t20210926_177063.html); <https://ai-ethics-and-governance.institute/2021/09/27/the-ethical-norms-for-the-new-generation-artificial-intelligence-china/>

<sup>10</sup> <https://digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-effective-march-1-2022/>

Year	Activity	Actor(s)	Command
	Developing Responsible AI” <sup>11</sup>		<p>and promote sustainable economic, social and ecological development [based on AI].</p> <p>This plan identified eight principles of AI governance: Harmony and Friendship; Fairness and Justice; Tolerance and Sharing; Respecting Privacy; Safe and Controllable; Share Responsibilities; Open Collaboration; and Agile Governance.</p>
2018	‘Three-Year Action Plan for Promoting Development of a New Generation Artificial Intelligence Industry (2018–2020)’ <sup>12</sup>	Chinese Ministry of Industry and Information Technology (MIIT)	<p>To identify the concept of intelligence + and developed responsible artificial intelligence with an emphasis on developing smart intelligence to reflect the characteristics and requirements of socialist countries.</p> <p>The initiatives included coverage of products, service and technologies powered by AI in industry, healthcare, transportation, agriculture, finance, logistics and education. Development of intelligent and Connected Vehicle (ICV), intelligent sensors and neural network semiconductors, smart manufacturing, and AI industry standards systems are the other areas targeted for development.</p>
2018	The first AI Innovation Action	Chinese Ministry of Education	To establish China’s universities as hotbeds for AI talent by 2030. The Plan aimed to establish 50 AI research centres, bring out 50 world class

<sup>11</sup> [https://english.www.gov.cn/state\\_council/ministries/2019/06/18/content\\_281476721086770.htm](https://english.www.gov.cn/state_council/ministries/2019/06/18/content_281476721086770.htm)

<sup>12</sup> <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/translation-chinese-government-outlines-ai-ambitions-through-2020/>

Year	Activity	Actor(s)	Command
	Plan for Colleges and Universities <sup>13</sup>		AI textbooks and set up 50 national-level high-quality online AI courses by 2020. Along with this, the Ministry of Education also planned to train 5,000 students and 500 teachers in AI within five years
2021, 2018	White Paper on the Standardization of Artificial Intelligence <sup>14</sup>	30 organizations including the Institute for Standardization of Electronic Technologies of the People's Republic of China, the Academy of Social Sciences of the People's Republic of China, as well as Baidu, Alibaba, Tencent and Huawei.	To propose a comprehensive system of standards development that would regulate both the fundamental concepts of AI, and end products, and areas of technology application.
2017	Artificial Intelligence: A National Strategic Initiative <sup>15</sup>	Chinese Academy of Information and Telecommunications in collaboration with Tencent	To identify ethical issues and legal regulation of AI, including the problem of artificial superintelligence - when a machine reaches human-like thinking and can set goals for itself. The book argued that international cooperation is necessary to develop measures regulating the basic moral and ethical principles of AI
2017	'New Generation Artificial Intelligence Development Plan' (新一代人工智能)	China's State Council	To identify China's aim to become the world leader in AI by 2030, to monetise AI into a trillion-yuan (\$150 billion) industry, and to emerge as the driving force in defining ethical norms and standards for AI.

<sup>13</sup> [http://en.moe.gov.cn/features/ChinaEducationEndeavor2018/Pressreleases/201806/t20180612\\_339230.html](http://en.moe.gov.cn/features/ChinaEducationEndeavor2018/Pressreleases/201806/t20180612_339230.html)

<sup>14</sup> <http://www.cesi.cn/images/editor/20210721/20210721160350880.pdf>;

<https://cset.georgetown.edu/publication/artificial-intelligence-standardization-white-paper-2021-edition/>

<sup>15</sup> <https://link.springer.com/book/10.1007/978-981-15-6548-9>

Year	Activity	Actor(s)	Command
	人工智能发展规划) <sup>16</sup>		The plan emphasised societal responsibility; companies chosen by the Chinese state to be AI champions follow national strategic aims, and state institutions determine the ethical, privacy, and trust frameworks around AI
2016	China's 13th Five-Year Plan <sup>17</sup>	Central Committee of the Communist Party of China	AI was as one of the six critical areas for developing the country's emerging industries.
2015	Guidelines on China's 'Internet+' action <sup>18</sup>	State Council	To identify the importance of emerging AI industries and investing in their research and development.
2015	'Made in China 2025' plan <sup>19</sup>	Central Committee of the Communist Party of China	To identify the plan to transform China into the dominant player in global high-tech manufacturing, including AI

Additional sources: Webster *et al.* (2017); Kewalramani (2018); McBride and Chatzky (2019); Roberts *et al.* (2019); Kumar (2021); Middleton *et al.* (2022); and Mikhailovna (2022)

### 3.1.4 Consequences

The main objectives of the AIDP, along with recent legislations such as Deep Synthesis Provisions, the Personal Information Protection Law, appear to be to promote the modernization of social governance system and governance capacity in China while engendering public trust. The aim is to improve the quality of public services and promote common prosperity through accurate management of public service demand driven by big data (Duan *et al.*, 2022). The role of the national AI regulations appears to be 'facilitative and restrictive' to mitigate the harms associated with the development and deployment of AI systems, and harness the growth and technological prowess of China's AI capabilities, in equal measure (Ma, 2024). In contrast to the stringent requirements of some of the national regulations, the regional regulations are mainly 'facilitative' and aimed at supporting best practices for promoting the development of AI in industry and regional government (Ma, 2024). The result is a 'state-centric multilateral model' to AI regulation similar to China's approach to regulation of online platforms, with the aim of balancing political objectives,

<sup>16</sup> <https://digichina.stanford.edu/work/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>

<sup>17</sup> <https://en.ndrc.gov.cn/policies/202105/P020210527785800103339.pdf>

<sup>18</sup> <https://english.www.gov.cn/2016special/internetplus/>

<sup>19</sup> [https://cset.georgetown.edu/wp-content/uploads/t0432\\_made\\_in\\_china\\_2025\\_EN.pdf](https://cset.georgetown.edu/wp-content/uploads/t0432_made_in_china_2025_EN.pdf)

societal outcomes, market dynamics, and continued growth of China's AI industry (Xu, 2024; Zhang, 2025).

AI is intended to address systemic weaknesses related to digital infrastructure, asymmetric information along with data barriers to improve its public services. This is intended to enable a real-time monitoring platform for public services to enable China to emerge at the forefront of the new round of industrial revolution. The aim is to apply artificial intelligence in finance, industry, medical treatment and social governance to promote economic development. Effectively, the consequence is to deliver rapid, stable and sustainable development of the intelligent economy in China (Duan *et al.*, 2022). With a focus on online platforms and AI-generated content such as deep fakes, according to Franks, Lee and Xu (2024), China's AI regulation has the potential to set market precedents and identify best practices on mitigating potential AI harms. For example, the New Generation AI Ethics Specification, covers the entire life cycle of AI and provides guidance for natural and legal persons, as well as other relevant institutions. With the Deep Synthesis Provisions, China's approach to generative AI emphasises legal responsibility, contractual obligations, and ethical responsibility by the AI providers (Dong and Chen, 2024). Although the requirements and restrictions of China's AI regulation is mainly directed at China's AI products, the default settings it imposes on China's technology exports has the potential to influence everything from language models in Indonesia to the safety features of autonomous vehicles in Europe (Sheehan, 2023).

### 3.2 European Union

The EU faces two critical challenges in relation to AI (Mikhailovna, 2022):

- USA is a leader in the development of hardware and software. The data of Europeans is stored in cloud services developed, operated, and controlled by American technology companies.
- It has to ensure effective control of access to data necessary for AI due to the changing geopolitical scenario with China.

In 2018, the EU presented an AI development strategy and later a coordinated action plan based on it, designed for a period up to 2027 (Mikhailovna, 2022; European Commission, 2023). On 19 February 2020, the European Commission published the "White Paper on Artificial Intelligence," aiming to foster a European ecosystem of excellence and an ecosystem of trust. The White Paper presented the policy framework setting out measures to align efforts at the European, national and regional levels (Cyman, Gromova and Juchnevicius, 2021). Taking into account the proposals, ultimately the goal was to develop a European approach to AI (Kop, 2021). The document focussed on two areas (Cyman, Gromova and Juchnevicius, 2021; Mikhailovna, 2022):

- Development of a set of policies and regulatory documents that would align efforts in the field of AI development at the European, national and local levels. the aim is to enable businesses and the European states to mobilize their resources to create an "ecosystem of excellence" - from the start of research and development to the implementation of AI-based solutions, including in the segment of medium and small businesses (SMB).

- Policy objective: Development of key elements of the regulatory framework that would create a unique "ecosystem of trust". Such a regulatory framework will be aimed at ensuring compliance with fundamental rights and consumer rights when using AI systems that carry high risks.

The European Commission proposal for a legal framework to comprehensively regulate Artificial Intelligence (AI) came after lengthy public consultation and deliberation. Most prominently, in 2018 the AI High Level Expert Group (AI HLEG) prepared ethical guidelines and policy recommendations (High-Level Expert Group on AI (AI HLEG), 2019a, 2019b).

In 2019, Ursula von der Leyen (EU president) and Angela Merkel (then the chancellor of Germany), called for the European Union to create a GDPR for AI. The stated aim of such an act was to influence AI development on par with what the General Data Protection Regulation (GDPR) achieved leading to changes in products offered in several non-EU countries (a de facto Brussels Effect) and influenced regulation adopted by other jurisdictions (a de jure Brussels Effect) (Siegmann and Anderljung, 2022).

In 2021, the European Commission's proposal (AI Act or AIA) sought to establish regulatory standards with global relevance for AI (European Commission, 2021; Gstrein, 2022). As part of this process the EC processed 1,200 questionnaire responses and 133 written comments, and undertook extensive deliberations with inputs from interested parties, including business. The concerns expressed by some of the stakeholders to the Commission's white paper on AI, released in February 2020 were also taken into consideration (Broadbent and Arrieta-Kenna, 2021).

On April 21, 2021, the European Commission transmitted a draft proposal, the Artificial Intelligence Act (AIA) for an EU-wide legal regime for AI to the European Parliament (European Commission, 2021). This act became operational in August 2024, with its provisions applicable in practice over the next 3 years. In particular, the AI Act rules on general-purpose AI will become effective in August 2025. Recognising the growth in general-purpose AI models and their ability to perform a wide range of tasks, in early 2025 the EU's AI Office also initiated the work on a General-Purpose AI (GPAI) Code of Practice to act as a central tool for providers to demonstrate compliance with the AI Act. In parallel to the Code of practice process, the AI Office is also developing a template for the summary of training data that general-purpose AI model providers are required to make public according to Article 53(1)d) of the AI Act.

Despite the EU setting a precedence in AI regulation with the AI Act, in recognition of the advantageous position China and the USA hold in AI software and hardware, the EU has also developed an AI innovation package to "support European startups and SMEs in the development of trustworthy Artificial Intelligence (AI) that respects EU values and rules."<sup>20</sup> The AI innovation package includes:

- AI Office to support the development and use of trustworthy AI, while protecting against AI risks.

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<sup>20</sup> [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_383](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_383)

- AI Factories to leverage the supercomputing capacity of the European High-Performance Computing (EuroHPC) Joint Undertaking to develop trustworthy cutting-edge generative AI models.
- GenAI4EU, an initiative aimed at the development of novel use cases and emerging applications in Europe's 14 industrial ecosystems, as well as the public sector. Application areas include robotics, health, biotech, manufacturing, mobility, climate and virtual worlds.
- Support for member states in the creation of
  - The Alliance for Language Technologies' (ALT-EDIC) to develop a common European infrastructure in language technologies to address the shortage of European languages data for the training of AI solutions, as well as to uphold Europe's linguistic diversity and cultural richness. ALT-EDIC will support the development of European large language models.
  - CitiVERSE EDIC which will apply state-of-the-art AI-tools to develop and enhance Local Digital Twins for Smart Communities, helping cities simulate and optimise processes, from traffic management to waste management.

In addition to these initiatives, in early 2025 the European Commission launched InvestAI, an initiative to mobilise €200 billion for investment in AI, including a new European fund of €20 billion for AI gigafactories.<sup>21</sup>

### 3.2.1 Regulator

Two different actors have been involved when the European Union's regulatory approach to AI is considered: the HLEG and European Commission. The HLEG's role is research and advisory, EC's role is to establish frameworks and regulatory approach with legal implementation devolved to individual member states.

In June 2018, the High-Level Expert Group on Artificial Intelligence (AI HLEG) was established. to support the implementation of the European Strategy on Artificial Intelligence. This included the elaboration of recommendations on future-related policy development and on ethical, legal and societal issues related to AI, including socio-economic challenges (Cyman, Gromova and Juchnevicius, 2021).

To develop the GPAI Code of Practice (CoP), the AI Office engaged in an iterative drafting process with a broad range of stakeholders participating, including general-purpose AI model providers, downstream providers, industry organisations, civil society, rightsholders and other entities, as well as academia and independent experts.<sup>22</sup> The Commission received the final version of the CoP on July 10, 2025.<sup>23</sup> On August 1, 2025, the Commission and the AI Board approved the code via the Adequacy Decisions process.<sup>24</sup>

### 3.2.2 Target

The EU's regulatory activity on AI does not have a specific target (companies or state) which it applies to. The AI Act is intended to establish a framework for AI regulation which will

<sup>21</sup> <https://digital-strategy.ec.europa.eu/en/news/eu-launches-investai-initiative-mobilise-eu200-billion-investment-artificial-intelligence>

<sup>22</sup> <https://digital-strategy.ec.europa.eu/en/policies/ai-code-practice>

<sup>23</sup> <https://digital-strategy.ec.europa.eu/en/news/general-purpose-ai-code-practice-now-available>

<sup>24</sup> <https://digital-strategy.ec.europa.eu/en/news/general-purpose-ai-code-practice-now-available>

then be implemented by its member states. However, given that the AI Act is modelled similar to GDPR, it is highly likely that the ‘target’ of the EC’s approach will extend beyond how AI technologies operate in the EU.

A common European approach to AI is to reach sufficient scale and avoid the fragmentation of the European Single Market. Improving the coordination between European research centres to develop the best technology and use to the utmost the opportunities offered by AI are the other targets of the EC’s approach. With USA and China’s lead in technology development, the EC’s focus is on artificial intelligence based on ethics and shared European values recognising that the impact of AI systems extends beyond national borders, and therefore will require cooperation among all of the players states, international organizations and corporations, and particularly regulatory and legislative decision-making bodies when it concerns regulation of AI (Cyman, Gromova and Juchnevicius, 2021; European Commission, 2023).

Recognising that not all AI systems are alike, the EC has used a risk-based classification. The main focus of the EC’s regulatory approach is the high-risk systems where the AI system is “used as a safety component of a product, or is itself a product” (European Commission, 2023). The intended requirement is therefore that the AI system should be covered by current (and future) EU product safety and conformity legislation (Voss, 2021).

The EC’s approach appears to recognise that ex-ante regulation of AI systems is likely to be difficult in practice and may limit growth of European AI start-ups. The AI Act therefore adopts a proportionate, risk-based approach that only imposes ex ante regulatory procedures on AI systems classified as “high risk.” Additionally, total prohibitions are only intended to be applicable to a narrow set of specific applications of “AI incompatible with EU values,” such as real-time, remote biometric identification in public spaces for the purpose of law enforcement. Even this ban lists a few exceptions in which such use could be considered “strictly necessary” and allowed. Without resorting to a moratorium on all facial recognition technology, the proposal includes “AI systems intended to be used for the ‘real-time’ and ‘post’ remote biometric identification of natural persons” as high-risk systems (Broadbent and Arrieta-Kenna, 2021). The Code of Practice is focussed on general-purpose AI and is intended to complement the provisions of the AI Act by enabling the providers of GPAI models to demonstrate their compliance with the act.

### **3.2.3 Command**

The AI act targets an ethical and legal framework in line with the Charter for Fundamental Rights. This includes guidance on regulation in particular in areas of safety and liability, cooperation of stakeholders and development of AI ethics guidelines with the aim to champion “an approach to AI that benefits people and society as a whole” and “place the power of AI at the service of human progress” (High-Level Expert Group on AI (AI HLEG), 2019a; Ulnicane, 2022; European Commission, 2023). The EU’s approach to AI regulation is aimed at limiting the autonomy of military AI systems (Middleton *et al.*, 2022).

**Table 2 List of AI regulation and governance-related activities in the EU**

Year	Activity	Actor(s)	Command
2025	EU general-purpose AI Code of Practice <sup>25</sup>	EU AI Office, AI Board, and member states	To demonstrate compliance with the AI Act
2024	EU AI Act <sup>26</sup>	European Commission, member states	To regulate the providers of AI systems and entities using all types of AI across a broad range of sectors, with exceptions for AI systems used solely for military, national security, research and non-professional purposes. The Act classifies non-exempt AI applications by their risk of causing harm.
2022	AI Liability Directive <sup>27</sup>	European Commission, European Parliament	To establish a directive on adapting non-contractual civil liability rules to artificial intelligence.

Notably, the AI Liability Directive (ALID) was withdrawn in 2025 after multiple rounds of deliberations including key stakeholders such as the European Economic and Social Committee (EESC), the European Data Protection Supervisor (EDPS), Committee on Legal Affairs (JURI), and European Parliamentary Research Service (EPRS). The withdrawal was recommended by the Internal Market and Consumer Protection Committee (IMCO) which considered such a directive as premature and unnecessary.

The AI Act is a regulation based on Article 114 of the Treaty on the Functioning of the European Union (TFEU). It is focussed on the approximation of laws to improve the functioning of the internal market and combines reduction of trade barriers with broad fundamental rights concerns. It draws on the 2008 Decision establishing a framework for certain regulations concerning product safety, used in a wide array of subsequent legislation. The main enforcement bodies of the proposed AI Act, ‘market surveillance authorities’ (MSAs), are common in EU product law (Veale and Borgesius, 2021).

With the EU AI Act the EC has adopted an assurance-based regulatory environment using yet-to-be-defined AI assurance standards. Its approach is to build upon GDPR data governance, and it does so by mapping the AI systems into five risk categories (Veale and Borgesius, 2021) (Middleton *et al.*, 2022): unacceptable risks; high risks; general-purpose AI; limited risks; and minimal risks. The general-purpose AI risk category was not part of original draft proposals and was added in 2023 to address the growth and adoption of foundational

<sup>25</sup> <https://digital-strategy.ec.europa.eu/en/policies/ai-code-practice>

<sup>26</sup> <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai>

<sup>27</sup> <https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-ai-liability-directive>

models, particularly large language models in the market. For minimal risks, the Member States and the Commission ‘encourage’ and ‘facilitate’ voluntary codes of conduct. Effectively,

- The lowest risk categories self-regulate with transparency obligations.
- The highest risk categories require first-party or third-party assessments enforced by national authorities.
- Some applications are banned outright to protect individual rights and vulnerable groups.

Article 71 of directs EU members to establish rules for penalties and administrative fines of up to 6 percent of a company’s total worldwide annual turnover for the preceding financial year for infringements of the regulations. With the rapidly changing technological landscape, the proposal enables the Commission to expand the existing list of high-risk areas without going through a legislative process. Any expansion of the high-risk list will need to conform to specified criteria and a risk assessment methodology set forth in Article 7 (Broadbent and Arrieta-Kenna, 2021).

The final version of the GPAI Code of Practice has three separate chapters: Transparency, Copyright, and Safety and Security:<sup>28</sup>

- The Transparency chapter offers a user-friendly Model Documentation Form to allow providers to easily document the information necessary to comply with their obligations under Article 53 of the AI Act to ensure sufficient transparency.<sup>29</sup>
- The Copyright chapter offers providers practical solutions to meet their obligations under Article 53 of the AI Act to put in place a policy to comply with EU copyright law.<sup>30</sup>
- The Safety and Security chapter identifies concrete state-of-the-art practices for managing systemic risks, i.e. risks from the most advanced models. Providers of general-purpose AI models with systemic risk can rely on this chapter to comply with their obligations under Article 55 of the AI Act.<sup>31</sup>

Other examples of EU-based approach to regulating AI include the European city of Vienna which became the first city in the world to earn the IEEE AI Ethics Certification Mark with sets standards for transparency, accountability, algorithmic bias, and privacy of AI products (Middleton *et al.*, 2022).

### 3.2.4 Consequences

The AI Act is intended to introduce new standards conformity assessment, auditing requirements, and post-market monitoring requirements for “high-risk” AI products sold in the EU which are likely to cover 5–15% of the EU AI market (Siegmann and Anderljung, 2022).

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<sup>28</sup> <https://digital-strategy.ec.europa.eu/en/policies/contents-code-gpai>

<sup>29</sup> <https://ec.europa.eu/newsroom/dae/redirection/document/118120>

<sup>30</sup> <https://ec.europa.eu/newsroom/dae/redirection/document/118115>

<sup>31</sup> <https://ec.europa.eu/newsroom/dae/redirection/document/118119>

- Any AI systems that are either a product or safety component of a product already subject to an EU conformity assessment, such as products in financial services, medical devices, machinery, and toys, will be considered high risk.
- The proposal lists eight standalone sectors “with fundamental rights implications” for which any AI systems would automatically also be considered high risk. (Broadbent and Arrieta-Kenna, 2021)

Parts of the AI Act also appear to recognise the potential for growth of China’s indigenous AI industry with national champions supported by a form of state capitalism. The AI Act is intended to enable it to adapt to China’s growth and dominance in relation to development of independent national standards in China, potential barriers to trade and access, and intellectual property protection (Roberts *et al.*, 2019).

The AI Act is a framework drawing on significant EU work in areas such as AI ethics and data protection. While not a “hard law” applicable to AI systems, it could become the de facto legislation on AI on par with the GDPR, an extension of the EU’s soft power on legislative standards for technology. It focuses on AI activity through a development of legal certainty and trust, and its extraterritoriality could hold long-term implications for US and China-based companies with their dominance of AI R&D and product development (Voss, 2021). Due the EU’s focus on creating an enforceable framework, the AI Act is effectively a hybrid regulation with a focus on product and service safety, standardisation, and protection of fundamental rights (Gstrein, Haleem and Zwitter, 2024). AI model providers who voluntarily sign the GPAI Code of Practice can show they comply with the AI Act by adhering to the code. The Commission’s main objective with the Code of Practice is to reduce the potential administrative burden on the model providers. Compliance with the CoP is intended to give the model providers legal certainty instead of requiring them to prove compliance through other methods.<sup>32</sup>

By establishing a link between risk regulation and integration of AI products and services in the digital market economy, the EU is in the position to lead in not only defining the problems related to risks posed by AI but also setting the agenda and decision-making on its oversight (Justo-Hanani, 2022). Similar to GDPR, with the AI Act and the GPAI Code of Practice, the EU could become a superpower in matters of ethics, morality and cybersecurity in connection with the development and use of AI. As noted in the introduction, this gives the EU unique arbitrage when its market position is considered in conjunction with the technology dominance of US and China. The EU’s strategy is intended strengthen cooperation on AI R&D, regulation, and standards-making on the one hand. On the other hand, it is aiming to address the challenge of foreign direct investment absorbing technology leaders with subsequent localisation of acquired technologies. Despite these perceived strengths of the AI Act however, Wachter (2023) has argued that the AI Act is over-reliant on self-regulation, self-certification, weak oversight and investigatory mechanisms, and far-reaching exceptions for both the public and private sectors. Whether the Act would enable the member states to effectively manage the challenges of socially, democratically disruptive generative AI content, environmental concerns, and regulate access to high-performance open-source AI systems developed outside the EU is also unclear (Hacker, 2023). From the member state perspective, Cantero Gamito and Marsden (2024) posit the need for a co-regulatory approach

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<sup>32</sup> <https://digital-strategy.ec.europa.eu/en/policies/contents-code-gpai>

with localised risk assessments that consider national contexts, languages, institutions, and culture.

### **3.3 USA**

The USA's approach to AI regulation differs significantly from the EU and Chinese approach. The USA's approach since 2016 has been decentralised to limit over-regulation with the responsibility delegated to specific agencies. Given the USA's market lead in AI technologies, it is unlikely to mirror the EU's approach of horizontal risk-based rules, pre-market conformity assessments, and post-market monitoring on AI (MacCarthy and Propp, 2021). Most of the AI regulation activity in the USA has been at the state level along with some industry and third sector-initiatives (MacCarthy and Propp, 2021).

Despite the lack of central oversight however, there is an increased activity vis-a-vis AI regulation since 2019. Unlike the EU which adopts a risk-based approach and China which is focussed on social cohesion and mitigating harms, this activity also appears to cover a very broad spectrum of AI and AI-enabled technologies including: autonomous vehicles, algorithmic accountability, facial recognition technology, and transparency (Chae, 2020). This activity was not specifically about law-making on AI and included executive orders, resolutions, plans, federal bills on research and governance issues-related to AI (Chae, 2020).

#### **3.3.1 Regulator**

The regulatory actors in the US include federal and state-level agencies, private and third-sector organisations such as the White House's Office of Science and Technology Policy, the National Institute of Standards and Technology (NIST), Environmental Protection Agency (EPA), Task Force on Artificial Intelligence in the Financial Services (FS), the Department of Defense Innovation Board, the Federal Trade Commission (FTC), Federal Election Commission (FEC), National Science Foundation (NSF), Department of Labor (DOL), Department of Defense (DOD), the Office of Management and Budget (OMB), and National Security Commission on Artificial Intelligence (NSCAI) (Broadbent and Arrieta-Kenna, 2021).

Industry coalitions such as Partnership on AI (which has Amazon, Microsoft, Google, Facebook, and Apple on its board) has presented best practices, tools and techniques to shape the future of AI technologies. Civil society organisations such as AI Now Institute have published multiple reports on AI algorithms, their impact on society, civil rights, and individual citizens (Lucero, 2019).

#### **3.3.2 Target**

The lack of comprehensive regulation establishing horizon rules systems (such as the EU AI Act) indicates that the US approach to AI regulation and governance does not have an explicit target company or set of companies.

An example of the target companies can be found in the Algorithmic Accountability Act (2023, 2022, and 2019) which defines "automated decision system" as "any computational process, including one derived from machine learning, statistics, or other data processing or artificial intelligence techniques, that makes a decision or facilitates human decision making, that impacts consumers." The companies covered by this definition include: Companies that make \$50 million or more per year; Hold data for over one million consumers or consumer devices; or Act as data brokers that buy and sell personal information (Chae, 2020). Similar

examples can be identified in other pieces of legislation, including the Stop Spying Bosses Act (2023), or No Robot Bosses Act (2023).

The target of the AI regulation in the USA are a broad range of activities impacted by AI rather than specific organisations. The aim is to facilitate innovation, protect consumer rights, and encourage companies to sign up for voluntary standards of responsibility in relation to collection and use of individual data (Choquette and Jones, 2021).

### 3.3.3 Command

Following table provides a detailed listing of various US executive orders, resolutions, plans, federal bills, and state-level bills on AI. This considers the use of AI/ML in various smart or intelligence technologies products and services including smart speakers, facial recognition technology, and biometric identifiers (amongst other things).

**Table 3 List of AI regulation and governance-related activities in the USA**

Year	Activity	Actor(s)	Command
2025	Removing Barriers to American Leadership in AI <sup>33</sup>	US President's Executive order	To enhance America's global AI dominance.
2024	No AI Fraud Act <sup>34</sup>	Not confirmed	This act provides for individual property right to voice and likeness, and give them legal ground to sue to protect identities from AI abuse, including deepfakes.
2024	Artificial Intelligence Environmental Impact Act 2024 <sup>35</sup>	NIST, EPA, the Department of Energy, and the Office of Science and Technology Policy	NIST to develop standards to measure and report AI's environmental impacts, and create a voluntary framework for AI developers to report environmental impacts.
2023	Preventing Deep Fake Scams Act <sup>36</sup>	Task Force on Artificial Intelligence in the Financial Services (FS)	This act establishes a Task Force on Artificial Intelligence in the Financial Services (FS) Sector to report to Congress on AI issues in FS.
2023	Protect Elections from Deceptive AI Act <sup>37</sup>	FEC	This act prohibits the distribution of materially deceptive AI-

<sup>33</sup> <https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/>

<sup>34</sup> <https://www.congress.gov/bill/118th-congress/house-bill/6943/text/ih>

<sup>35</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/3732/text>

<sup>36</sup> <https://www.congress.gov/bill/118th-congress/house-bill/5808/text>

<sup>37</sup> <https://www.congress.gov/bill/119th-congress/senate-bill/1213/text/is>

Year	Activity	Actor(s)	Command
2023	AI Disclosure Act of 2023 <sup>38</sup>	FTC	generated media of candidates for Federal office This act requires AI-generated outputs to be accompanied with a specified disclosure stating that such outputs have been generated by AI.
2023	Candidate Voice Fraud Prohibition Act <sup>39</sup>	FEC	This act amends the Federal Election Campaign Act of 1971 to ban the distribution (within 60 or 90 days before an election depending on the type) of some political communications containing materially deceptive AI-generated audio that impersonates a candidate's voice and is intended to harm their reputation or to deceive voters.
2023	Federal Artificial Intelligence Risk Management Act <sup>40</sup>	NIST, OMB	This act makes the National Institute of Standards and Technology's (NIST) voluntary AI Risk Management Framework legally binding for government agencies.
2023	TEST AI Act of 2023 <sup>41</sup>	NIST, Secretary of Commerce, Secretary of Energy, and the Department of Energy	This act directs the NIST to coordinate with the Department of Energy to create testbeds to advance trustworthy AI tools, and to improve interagency coordination in the development of such tools.
2023	Stop Spying Bosses Act <sup>42</sup>	DOL	This act establishes requirements for employers with more than 10 employees (including government employers) that engage in worker surveillance and collect employee or applicant data.
2023	No Robot Bosses Act <sup>43</sup>	DOL	This act prohibits certain uses of automated decision systems (ADS) by employers, require employers

<sup>38</sup> <https://www.congress.gov/bill/118th-congress/house-bill/3831/text>

<sup>39</sup> <https://www.congress.gov/bill/118th-congress/house-bill/4611/text>

<sup>40</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/3205/text>

<sup>41</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/3162/text>

<sup>42</sup> <https://www.congress.gov/bill/118th-congress/house-bill/7690>

<sup>43</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/2419/text>

Year	Activity	Actor(s)	Command
2023	REAL Political Advertisements Act <sup>44</sup>	FEC	to disclose how and when ADS are being used, and to add protections for employees and applicants related to ADS. This act also known as the Requires the Exposure of AI-Led Political Advertisements Act. It amends the Federal Election Campaign Act of 1971 for further transparency and accountability when using AI-generated content in political ads by requiring disclaimers, outlining specifications for clear disclaimers on different media types
2023, and 2022	Political Emails Act of 2023 <sup>45</sup> or Political Bias in Algorithm Sorting Emails Act of 2022 <sup>46</sup>	FTC	This act makes it unlawful for commercial email service providers to use a filtering algorithm to label an email from a political campaign unless specific action was taken to apply such a label. The FTC will enforce this act, and violations shall be treated as violations of rules defining unfair or deceptive acts or practices under FTC acts.
2023	Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence <sup>47</sup>	US President's Executive order	This order was aimed at promoting competition in the AI industry, preventing AI-enabled threats to civil liberties and national security, and ensuring U.S. global competitiveness in the AI field.
2023, 2022, and 2019	Algorithmic Accountability Act <sup>48</sup>	FTC, Bureau of Technology	This act requires businesses that use automated decision systems to make critical decisions to report on the impact of such systems on consumers.
2022	Platform Accountability and	NSF, FTC	This act increases access to data of large technology platforms (with more the 50 million unique

<sup>44</sup> <https://www.congress.gov/bill/118th-congress/senate-bill/1596/text>

<sup>45</sup> <https://www.congress.gov/bill/118th-congress/house-bill/5495/text>

<sup>46</sup> <https://www.congress.gov/bill/117th-congress/senate-bill/4409>

<sup>47</sup> <https://www.federalregister.gov/documents/2023/11/01/2023-24283/safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence>

<sup>48</sup> <https://www.congress.gov/bill/117th-congress/house-bill/6580>

Year	Activity	Actor(s)	Command
	Transparency Act <sup>49</sup>		monthly users in US), specifically requiring platforms to disclose data to researchers in a programme jointly established by the NSF and the FTC. Also provides providing secure pathways for independent research on data held by large internet companies to support research about the impact of digital communication platforms on society.
2021	U.S. National Security Commission on AI report <sup>50</sup>	U.S. National Security Commission for Artificial Intelligence	This report outlined a market-led regulatory environment, with government focus areas of robust and reliable AI, human-AI teaming, and a standards-led approach to testing, evaluation, and validation. It argued for the adoption of a cohesive and comprehensive federal AI strategy.
2021	Strengthening and Democratizing the U.S. Artificial Intelligence Innovation Ecosystem <sup>51</sup>	National Artificial Intelligence (AI) Research Resource Task Force	This document emphasised the strategic importance of AI and AI innovation for the US economy and security; and the implications of AI for human rights.  Specific regulatory solutions were not identified in this document.
2021	Guidance on AI <sup>52</sup>	FTC	This guidance warned companies against biased, discriminatory, deceptive, or unfair practices in AI algorithms
2020	AI Bill of rights <sup>53</sup>	OMB	This document identified a set of policy principles for regulating AI articulated around the objective to promote innovation while

<sup>49</sup> <https://www.congress.gov/bill/117th-congress/senate-bill/5339/text>

<sup>50</sup> <https://reports.nscai.gov/final-report/>

<sup>51</sup> <https://www.ai.gov/wp-content/uploads/2023/01/NAIRR-TF-Final-Report-2023.pdf>

<sup>52</sup> <https://www.ftc.gov/news-events/news/public-statements/ai-related-programmatic-advances-ftc-june-2021-january-2025>; [https://www.ftc.gov/system/files/ftc\\_gov/pdf/ai-accomplishments-1.17.25.pdf](https://www.ftc.gov/system/files/ftc_gov/pdf/ai-accomplishments-1.17.25.pdf)

<sup>53</sup> <https://bidenwhitehouse.archives.gov/ostp/ai-bill-of-rights/>

Year	Activity	Actor(s)	Command
			protecting privacy, civil rights and American values.
2020	Anti-Eavesdropping Act (A.B. 1395) <sup>54</sup>	California state	This bill prohibits manufacturers of smart speakers from installing devices "without prominently informing" the user.
2020	Ordinance to ban the use of facial recognition software <sup>55</sup>	San Francisco and Oakland, California, and Somerville, Massachusetts	This ordinance seeks to ban the use of facial recognition software by the police and other government agencies
2020	A series of ethical principles for the design, deployment and adoption of military applications of AI <sup>56</sup>	DOD	<p>These principles prescribe an AI norm that goes much further than corporate voluntary standards.</p> <p>The principles establish inter alia that human beings must remain responsible for the development, deployment, use and outcomes of AI systems; algorithms used in combat must avoid unintended bias; and AI systems must be programmed to stop themselves if they see that they might be causing problems.</p>
2019	Bolstering Online Transparency ("B.O.T.") Act (S.B. 1001) <sup>57</sup>	California state	This act prohibits the use of "a bot to communicate or interact with another person in California online, with the intent to mislead the other person about its artificial identity" for commercial or political purposes. The law defines a "bot" as "an automated online account where all or substantially all of the actions or posts of that account are not the result of a person."

<sup>54</sup> [https://apcp.assembly.ca.gov/sites/privacyp.assembly.ca.gov/files/201920200AB1395\\_AB\\_1395\\_ABPCA\\_04-08-2019\\_Assembly\\_Privacy\\_And\\_Consumer\\_Protection\\_Committee\\_87026.pdf](https://apcp.assembly.ca.gov/sites/privacyp.assembly.ca.gov/files/201920200AB1395_AB_1395_ABPCA_04-08-2019_Assembly_Privacy_And_Consumer_Protection_Committee_87026.pdf)

<sup>55</sup> [https://www.aclunc.org/docs/ORD\\_Acquisition\\_of\\_Surveillance\\_Technology.pdf](https://www.aclunc.org/docs/ORD_Acquisition_of_Surveillance_Technology.pdf)

<sup>56</sup> <https://media.defense.gov/2021/May/27/2002730593/-1/-1/0/IMPLEMENTING-RESPONSIBLE-ARTIFICIAL-INTELLIGENCE-IN-THE-DEPARTMENT-OF-DEFENSE.PDF>

<sup>57</sup> [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180SB1001](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB1001)

Year	Activity	Actor(s)	Command
2019	Maintaining American Leadership in Artificial Intelligence <sup>58</sup>	US President's Executive order	The Order explained that the federal government plays an important role in facilitating AI research and development ("R&D") and in promoting trust, training people for a changing workforce, and protecting national interests, security, and values.'
2019	The No Biometric Barriers to Housing Act of 2019 (H.R. 4008) <sup>59</sup>	US Congress	This bill aims to "prohibit the use of biometric recognition technology in certain federally assisted dwelling units." This bill required the Secretary of Housing and Urban Development ("HUD") to submit a report describing "the impact of such technology on the residents 20 of such covered federally assisted rental dwelling units" and the potential impacts on vulnerable communities of additional usage of such technology in covered federally assisted rental dwelling units, including impacts on "resident privacy, civil rights, and fair housing," among other required details.
2019	Artificial Intelligence Video Interview Act (H.B. 2557) <sup>60</sup>	Illinois	The act aims to regulate an employer's ability to use AI analysis on video interviews
2019	Plan for Federal Engagement in Developing AI Technical Standards <sup>61</sup>	NIST	As part of this plan, nine areas of technical AI standards including AI safety, risk management, and some aspects of trustworthiness such as explainability or security,

<sup>58</sup> <https://www.federalregister.gov/documents/2019/02/14/2019-02544/maintaining-american-leadership-in-artificial-intelligence>

<sup>59</sup> <https://www.congress.gov/bill/116th-congress/senate-bill/2689/text>

<sup>60</sup> <https://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=101-0260>

<sup>61</sup> <https://www.nist.gov/artificial-intelligence/plan-federal-engagement-developing-ai-technical-standards-and-related-tools>

Year	Activity	Actor(s)	Command
			and three areas of "non-technical" AI standards that inform policy decisions, such as "societal and ethical considerations," "governance" and "privacy." were identified
2019	H.R. 3875 bill on facial recognition technology <sup>62</sup>	US Congress	This bill aimed to "prohibit Federal funding from being used for the purchase or use of facial recognition technology."
2019	The Facial, Analysis, Comparison, and Evaluation ("FACE") Protection Act of 2019 (H.R. 4021) <sup>63</sup>	US Congress	The aim of the bill was to prohibit a federal agency from applying "facial recognition technology to any photo identification issued by a State or the Federal Government or any other photograph otherwise in the possession of a State or the Federal Government unless the agency has obtained a Federal court order determining that there is probable cause for the application of such technology."
2019	Senate Bill S6623 <sup>64</sup>	New York state senate	The bill aimed to propose a temporary stop to the use of facial recognition technology in public schools.
2019	Federal bill S. 1558 on the Artificial Intelligence Initiative Act ("AI-IA") <sup>65</sup>	US Congress	The bill aimed to establish a coordinated federal initiative to accelerate research and development on AI.
2019	Federal bill H.R. 2575 and S. 1363, on the AI in Government Act <sup>66</sup>	US Congress	The aim of the bill was to establish an AI Center of Excellence

<sup>62</sup> <https://www.congress.gov/bill/116th-congress/house-bill/3875/text>

<sup>63</sup> <https://www.congress.gov/bill/116th-congress/house-bill/4021/text>

<sup>64</sup> <https://www.nysenate.gov/legislation/bills/2019/S6623>

<sup>65</sup> <https://www.congress.gov/bill/116th-congress/senate-bill/1558/text>

<sup>66</sup> <https://www.congress.gov/bill/116th-congress/house-bill/2575>

Year	Activity	Actor(s)	Command
2019	Bill A.B. 5430, titled "New Jersey Algorithmic Accountability Act". <sup>67</sup>	New Jersey state	This bill required covered entities to conduct impact assessments on "high-risk" automated decisions systems and information systems. The bill also required the covered entities to work with independent third-parties, record any bias or threat to the security of consumer's personally identifiable information discovered through the impact assessments, and provide any other information that is required by the Director of the Division of Consumer Affairs in the Department of Law and Public Safety.
2019	Bills for the Algorithmic Accountability Act (S. 1108, H.R. 2231) <sup>68</sup>	US Senate	The bills were aimed at addressing on the risks of AI's biased outcomes.
2019	Federal bill H.R. 2202 the Growing Artificial Intelligence Through Research ("GrAITR") Act <sup>69</sup>	US Congress	The aim of this bill was to grow AI through research & development activity
2019	House Resolution 153 on Supporting the Development of Guidelines for Ethical Development of Artificial Intelligence <sup>70</sup>	House of Representatives	<p>The aim of this Resolution was to strike a balance between promoting AI's "potential to enhance wellbeing, foster economic growth, and improve care and services for many people" with the need for its "safe, responsible, and democratic development."</p> <p>Other aims included transparency and explainability, information</p>

<sup>67</sup> [https://pub.njleg.state.nj.us/Bills/2018/A9999/5430\\_I1.PDF](https://pub.njleg.state.nj.us/Bills/2018/A9999/5430_I1.PDF)

<sup>68</sup> <https://www.congress.gov/bill/116th-congress/senate-bill/1108>

<sup>69</sup> <https://www.congress.gov/bill/116th-congress/house-bill/2202>

<sup>70</sup> <https://www.congress.gov/bill/116th-congress/house-resolution/153/text>

Year	Activity	Actor(s)	Command
			privacy and the protection of personal data, accountability and oversight for all automated decision-making, access and fairness regarding technological services and benefits, and safety, security, and control of AI systems
2019	House bill A.B. 1215 <sup>71</sup>	California state	The aim of the bill was to prohibit law enforcement agencies and officials from using any "biometric surveillance system," including facial recognition technology, in connection with an officer camera or data collected by the camera
2019	House bill, A.B. 1281 <sup>72</sup>	California state	This bill required California businesses that use facial recognition technology to disclose such usage on a physical sign that is "clear and conspicuous at the entrance of every location that uses facial recognition technology."
2019	Bills S.B. 5527 <sup>73</sup> and H.B. 1655 <sup>74</sup>	Washington State	This bill targeted GDPR-like prohibitions against algorithmic discriminations, although likewise limited to government's procurement and use
2019	Senate Bill 1385 <sup>75</sup>	Massachusetts Senate	This bill established a moratorium on the use of face recognition systems by state and local law enforcement
2019	Bills S.B. 5528 <sup>76</sup> and H.B. 1654 <sup>77</sup>	Washington state	This bill concerned the procurement and use of facial recognition technology by government entities and privacy

<sup>71</sup> [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=20190200AB1215](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=20190200AB1215)

<sup>72</sup> <https://apcp.assembly.ca.gov/sites/privacyp.assembly.ca.gov/files/AB%201281.pdf>

<sup>73</sup> <https://app.leg.wa.gov/BillSummary/?BillNumber=5527&Year=2019>

<sup>74</sup> <https://app.leg.wa.gov/bills/summary/BillNumber=1655&Year=2019>

<sup>75</sup> <https://malegislature.gov/Bills/191/s1385>

<sup>76</sup> <https://app.leg.wa.gov/BillSummary/?BillNumber=5528&Year=2019>

<sup>77</sup> <https://app.leg.wa.gov/bills/summary/BillNumber=1654&Year=2019>

Year	Activity	Actor(s)	Command
			rights relating to facial recognition technology.
2019	Bill, S. 120 <sup>78</sup>	Massachusetts state	This act focussed on consumer data privacy [in relation to AI technologies]
2018	Assembly Concurrent Resolution 215 <sup>79</sup>	California state	This legislative resolution supported using the 23 Asilomar AI Principles as the "guiding values for the development of artificial intelligence and of related public policy"
2018	California Consumer Privacy Act ("CCPA") <sup>80</sup>	California state	This act is aimed at enhancing privacy rights and consumer protection for residents of California, United States.
2018	A Local Law in relation to state automated decision systems used by agencies (Int. No. 1696-2017) <sup>81</sup>	New York City	This was New York city's first algorithmic accountability act
2017	Federal bill S. 2217 <sup>82</sup> and H.R. 4625 <sup>83</sup> on the FUTURE of Artificial Intelligence Act of 2017	Department of Commerce	The aim of these bills was to establish a new committee to advise on topics related to the development and implementation of AI.
2017	The bill on Biometric Identifiers <sup>84</sup>	Washington state	This bill legislated the commercial use of biometric identifiers

<sup>78</sup> <https://malegislature.gov/Bills/191/S120>

<sup>79</sup> [https://leginfo.ca.gov/faces/billStatusClient.xhtml?bill\\_id=201720180ACR215](https://leginfo.ca.gov/faces/billStatusClient.xhtml?bill_id=201720180ACR215)

<sup>80</sup> <https://www.oag.ca.gov/privacy/ccpa>

<sup>81</sup> <https://www.nyc.gov/assets/adtaskforce/downloads/pdf/ADS-Report-11192019.pdf>

<sup>82</sup> <https://www.congress.gov/bill/115th-congress/senate-bill/2217/text>

<sup>83</sup> <https://www.congress.gov/bill/115th-congress/house-bill/4625>

<sup>84</sup> <https://app.leg.wa.gov/RCW/default.aspx?cite=19.375&full=true>

Year	Activity	Actor(s)	Command
2016	National AI R&D Strategic Plan (2016) <sup>85</sup>	US Science and Technology Council	This plan defined a high-level framework to be used to identify scientific and technological needs in AI, and to track progress and maximise the impact of R&D investments to address those needs

Additional sources: Chae (2020); Broadbent and Arrieta-Kenna (2021); Choquette and Jones, (2021); MacCarthy and Propp (2021); and Middleton *et al.* (2022)

In addition to these efforts, the NSCAI recommended the Five Eyes Alliance (USA, UK, Canada, Australia and New Zealand) as a first locus of collaboration "advance the development of artificial intelligence, machine learning, and associated technologies to comprehensively address the national security and defense needs of the United States". In 2020 the Pentagon expanded this to a group of 13 countries through the AI Partnership for Defence (Australia, Canada, Denmark, Estonia, Finland, France, Israel, Japan, Norway, the Republic of Korea, Sweden, and the United Kingdom) (Choquette and Jones, 2021).

The USA has also aimed to leverage AI for military purposes through improved systems for asset protection and information processing as an essential measure to preserve national security and remain competitive with China and Russia. Protecting the USA's military AI systems from foreign interference is therefore a key priority of these governance approaches (Choquette and Jones, 2021).

From the perspective of the USA's market power in AI technologies, executive orders are also crucial when their influence in shaping in AI regulation and governance is considered. The executive Order for Removing Barriers to American Leadership in AI, issued in 2025, explicitly focuses on enhancing America's global AI dominance.<sup>86</sup> It supersedes the 2023 Executive Order for the Safe, Secure, and Trustworthy Development and Use of AI which targeted a coordinated federal government wide approach to the development and use of AI safely and responsibly.<sup>87</sup> It was aimed at promoting competition in the AI industry, preventing AI-enabled threats to civil liberties and national security, and ensuring the USA's global competitiveness in the AI field. The 2019 Executive Order on Maintaining American Leadership in Artificial Intelligence which highlighted that the federal government plays an important role in facilitating AI research and development ("R&D") and in promoting trust, training people for a changing workforce, and protecting national interests, security, and values<sup>88</sup>, is also noteworthy since it resulted in the "American AI Initiative" which had five principles (Chae, 2020):

1. Driving technological breakthroughs.

<sup>85</sup> [https://www.nitrd.gov/PUBS/national\\_ai\\_rd\\_strategic\\_plan.pdf](https://www.nitrd.gov/PUBS/national_ai_rd_strategic_plan.pdf)

<sup>86</sup> <https://www.whitehouse.gov/presidential-actions/2025/01/removing-barriers-to-american-leadership-in-artificial-intelligence/>

<sup>87</sup> <https://bidenwhitehouse.archives.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/>

<sup>88</sup> <https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-maintaining-american-leadership-artificial-intelligence/>

2. Driving the development of appropriate technical standards.
3. Training workers with the skills to develop and apply AI technologies.
4. Protecting American values, including civil liberties and privacy, and fostering public trust and confidence in AI technologies; and
5. Protecting USA's technological advantage in AI, while promoting an international environment that supports innovation.

Following this initiative, the FTC issued guidance emphasising the transparent, explainable, and fair use of AI tools (Broadbent and Arrieta-Kenna, 2021). Additionally, the OMB also released a set of policy principles for regulating AI in 2020. These principles were aimed at promoting innovation while protecting privacy, civil rights and American values (Chae, 2020). However, as the table above shows that the most of regulatory activity on AI in the USA has originated from local and state administrations - consistent with the goals of the 2019 Presidential executive order on Maintaining American Leadership in Artificial Intelligence and the 2016 Future of AI and National AI R&D Strategic Plan.

### 3.3.4 Consequences

Due to the decentralised nature of the USA's approach, the consequences to the technology companies or organisations using AI are not fully known at this stage. Most USA companies have adopted some voluntary codes, but the lack of a federal-level law or regulation means there are variations at the state-level resulting caution from companies, particularly technology companies vis-à-vis AI as the innovation is perceived to be in the high growth stage as of 2024-25. Given the distributed role of federal and state legislature in technology regulation in the USA, Gutierrez Gaviria (2022) has argued that most regulatory gaps caused by AI products and services can be resolved with adjustments to existing rules. In contrast, Davtyan (2025) suggests that such a fragmented, diverse regulatory environment is likely to pose challenges addressing critical issues such as privacy, security, and accountability. This is echoed by DePaula *et al.* (2025) who highlight that although AI regulation across USA's states is expanding the role of the public sector in AI governance and AI policies, issues of AI ethics, such as bias, are unevenly addressed across states, and very few states have comprehensive AI governance frameworks.

When considered in relation the EU's AI Act, the USA has traditionally indicated a willingness to work with allies on AI aligned with its values and commitments to protecting the rights and dignity of its citizens. However, as the EU progresses with its horizon-rules based pre- and post- market assessment strategy, the USA's approach is likely to be predicated on the impact of EU's position on USA's advantages in AI software, hardware, and standards. Additionally, the effects of China's governance model to AI also appears to be a crucial component of the USA's approach. Although historically, there has been a significant consensus between the USA and EU approaches concerning the safety of AI, USA is likely to adopt a more active role in shaping a standards-based AI regulatory framework that retains USA-based companies' advantages in Europe and globally (Broadbent and Arrieta-Kenna, 2021).

## 4. AI policy pathways in China, EU, and the USA

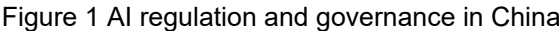
### 4.1 China

China's AI regulation is notable given the presence of multi-level regulation covering different jurisdictions at national, provincial, and local levels. Other unique aspects of China's approach to AI regulation include integration of technical oversight with ethical guidelines through the use of algorithmic registries and the resulting focus on understanding 'black box' technologies. Chinese regulations such as the Internet Information Service Algorithmic Recommendation Management Provisions, and the Personal Information Protection Law, parallel the features in the EU's DSA and DMA, and GDPR respectively. This suggests a consideration to the potential influence and footprint of the AI rulemaking beyond China. Strong protections for users in the form of mandatory opt-out options for users and prohibitions for discriminatory pricing based on use data, specific requirements for automated decision-making, and significant penalties for violations indicate that China's AI regulations have broad ranging ambitions covering societal, individual, and industrial outcomes.

China's approach to AI regulation includes several policy pathways aimed at balancing the need for technological advancement while reinforcing social stability and state control:

- The use of mandatory algorithm registration is aimed at increasing transparency, and thereby public trust to drive adoption and market expansion. Any market growth would then form the input for further regulatory refinement and enforcement. Any such expansion of regulatory control however holds implications for the cost of compliance it poses on the industry. For example, the regulations for deep synthesis and content creation technologies, and the significant financial penalties (up to 50M RMB) are indicative of the potential reach and spread of China's approach.
- State oversight of AI development enables China to track and curate AI developments which could undermine social stability. However, this poses the risk of excessive control on technological developments which drive AI innovation, market expansion, and Chinese influence on AI technologies. Such an oversight therefore requires China to achieve a trade-off between intended social/economic outcomes. The integration of technology governance with socio-political focus is also a crucial, distinctive aspect of China's approach to AI regulation compared to other regulatory regimes.
- Privacy protections have a crucial role in developing the public trust in AI. The privacy protections are crucial as the role of AI in state and private surveillance society gains prominence. However, such privacy protections also limit data usage by platforms, and constrain the data pipeline crucial for AI development, a crucial component of scaling AI model capabilities.
- China's large market size offers potential for its sovereign AI champions to expand to other markets. China's approach to legislation, and the extent to which it maintains long-term rule-making consistency is likely to prove crucial to its role in development of global AI standards, and its ability to lead on global AI governance.

Figure 1 depicts these policy pathways as part of a causal loop diagram.



## 4.2 European Union

The EU AI Act is a comprehensive, risk-based regulatory framework for AI. It establishes a unified horizontal regulatory approach across 27 member states, with the EU AI Office serving as the central coordination body. With risk-based approach, the EU's approach to AI oversight emphasises precautionary regulation with extensive compliance requirements for high-risk AI systems. Notable features of the EU's approach to AI regulation are that by relying on risk-based classification, it can identify different requirements and consequences for AI system outcomes, particularly when it manifests risk. Recognising the growth in general-purpose AI and foundational models in the marketplace, the EU has made specific provisions for managing risks for such AI systems. Given the lack of EU-based sovereign AI champions, the EU is also aiming to balance regulation with its digital sovereignty goals. This offers the EU the opportunity to extend the role it played in shaping global standards through legislation like GDPR. Although the AI Act and the Code of Practice are the main instruments of regulation in the EU, the EU has other initiatives such as the AI factories, GenAI4EU, ALT EDIC, and CitiVERSE EDIC to support the AI ecosystem in the EU aligned the goals of the AI Act.

The EU's approach to AI regulation includes several policy pathways which whilst advancing the risk-based classification as a global norm also target increased social acceptance of AI and improving EU's technological competitiveness:

- The EU is investing in AI infrastructure to enhance its capabilities, improve competitiveness, and therefore attract further investment through a promise of consistent rule-making process. This investment is also in the form of AI academy and fellowships to strengthen the EU's innovation capacity. This could help establish technological sovereignty given the EU's lack of leading companies in the AI software and hardware space.
- The emphasis of the AI Act on managing risks signals a mandate to safety measures aimed at building public confidence in AI and generating economic benefits that AI adoption could bring in conjunction with social acceptance crucial for wider AI deployment. The regulatory mandates for transparency, stakeholder information regarding risks, particularly systematic incident reporting which could facilitate improved safety measures, better decision-making and outcomes based on real-world experiences of the evolution of different AI systems in practice.
- The requirements for identifying systemic risks and risk control are potential barriers for EU-based local/regional innovation capacity if the compliance costs of precautionary measures exceed costs and returns on such innovation. The EU appears to have balanced such outcomes with compensatory support programs such as the InvestAI, AI GigaFactories, and the AI Innovation packages including GenAI4EU for SMEs to support the EU start-up ecosystem and aid sovereign competitiveness.
- The comprehensive nature of the AI Act and the Code of Practice is likely to reinforce the EU's advantages in establishing regulatory norms, global standards. This offers the opportunity for the EU to lead on coordinating international efforts on AI regulation, and further EU competitive advantages on exporting regulation, an outcome it achieved with the GDPR.

Figure 2 depicts these policy pathways as part of a causal loop diagram.

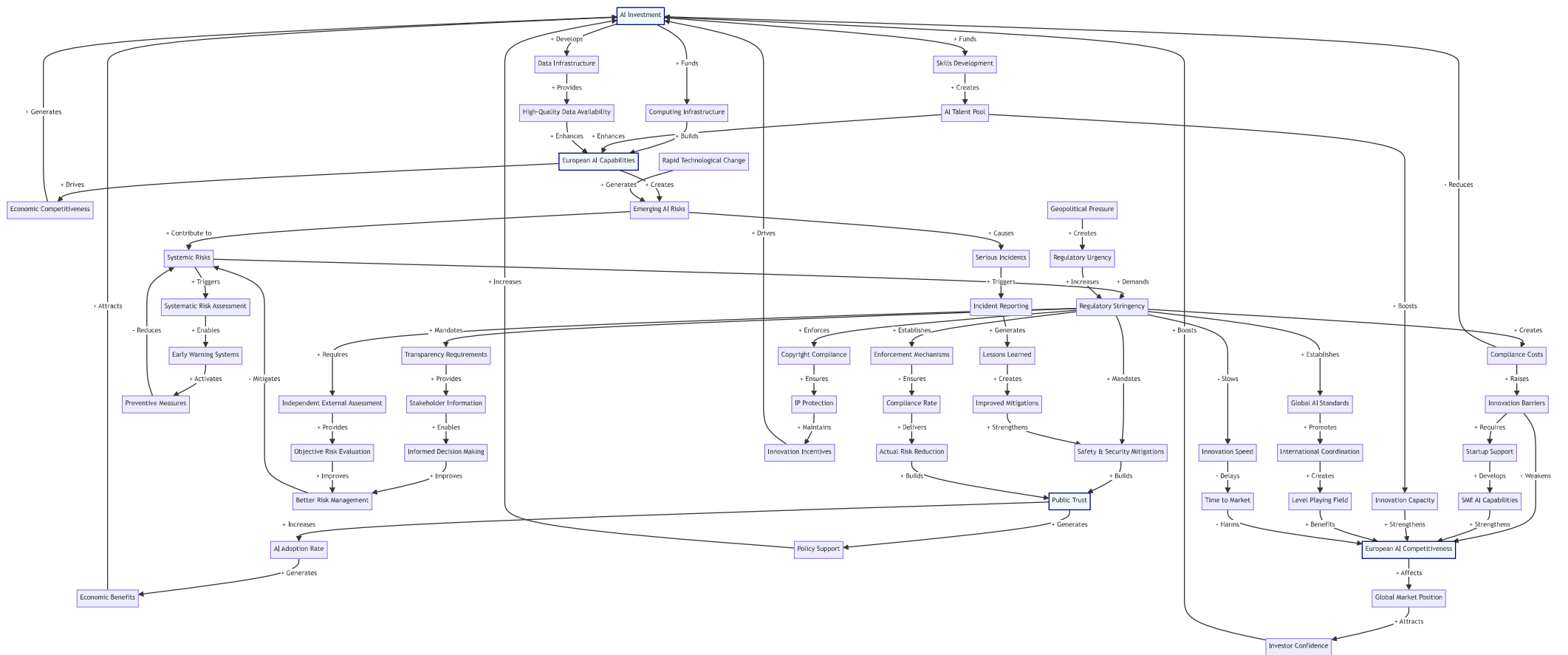


Figure 2 AI regulation and governance in the EU

### 4.3 USA

Unlike China or the European Union, the USA's approach to AI regulation is a sectoral, multi-agency with different types of legislation targeting specific AI applications and outcomes. With the exception of presidential executive orders which typically have a national footprint, the AI regulation in the USA is a form of highly distributed enforcement with multiple federal agencies (e.g. FTC, DOL, NIST, FEC) actively engaged in rule-making instead of a centralised regulatory body. Towards this end, the AI regulation appears to cover four main legislative areas: horizontal legislation which targets all AI systems, features, and potential end-users; legislation which is concerned with specific protections in employment contexts; legislation which targets content generation technologies, so different forms of generative AI; and legislation aimed at large technology platforms using AI.

In recognition of the USA's strengths in AI software and hardware, the regulation is also focussed on ensuring that the USA's competitive advantages are maintained. This means that there is significant emphasis on ensuring that the cost of regulatory compliance does not outweigh the speed and growth in AI innovation. The USA's approach to AI regulation therefore includes several policy pathways which aim to further USA's global advantages in AI development while ensuring that safeguards exist to mitigate any negative consequences in a domestic context:

- The focus on election integrity and privacy protections is combined with impact assessments to increase public trust in AI systems and enhanced transparency. Potentially higher public trust in AI systems forms the basis of political support and decision-making for improved oversight of AI technologies.
- The legislative responses to perceived risks of AI draw on testing and validation of AI systems as mitigation strategies. The extent to which these mitigation strategies prove effective will be a key indicator of whether the scope of additional regulatory rulemaking and intervention at state- and federal-level reduces or expands.
- The USA's competitive advantage relies on maintaining the speed at which AI innovation continues in software and hardware. Any requirements for regulatory compliance therefore require a trade-off between innovation speed and safety, a feature the USA system has in common with the China and EU approaches.
- The emphasis on human oversight, particularly in the workplace, financial lending, and criminal prosecution is an interesting feature of the USA's regulatory approach. This focus on monitoring and reporting data in relation to AI systems has the potential to strengthen overall system accountability, leading further growth and adoption of AI technologies.

Figure 3 depicts these policy pathways as part of a causal loop diagram.

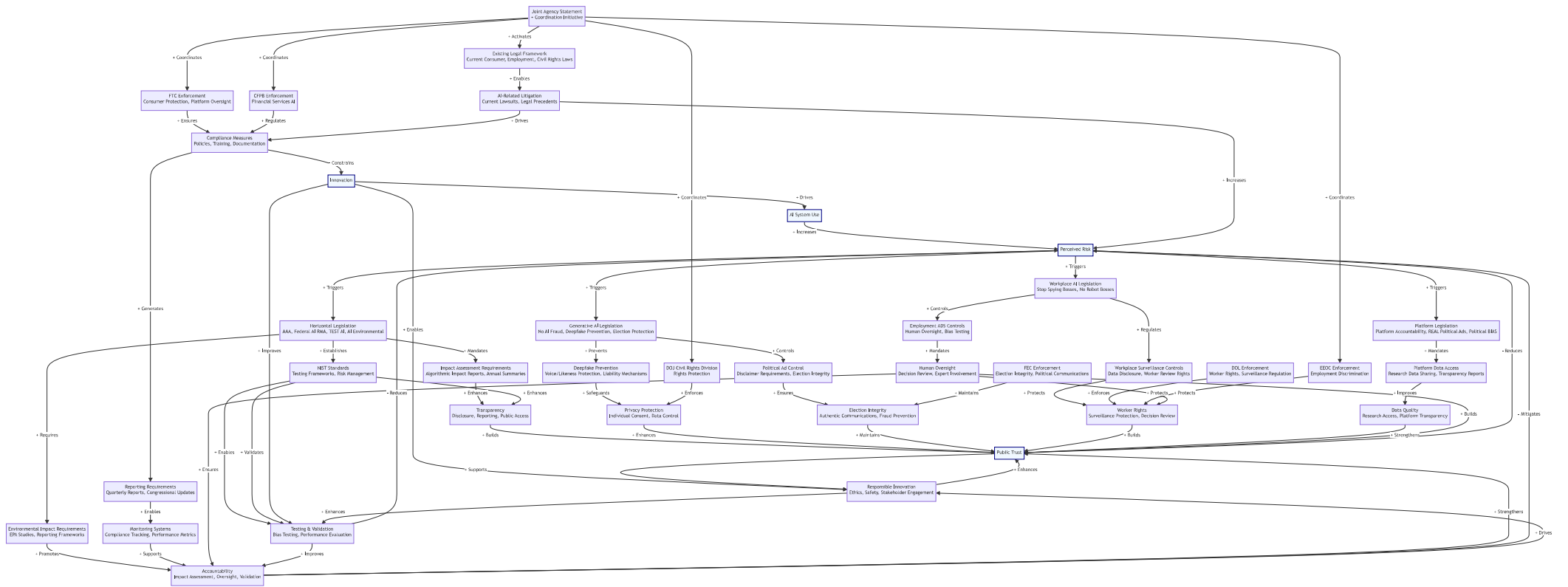


Figure 3 AI regulation and governance in the USA

## 5. Discussion and Conclusions

This paper reveals a perception paradox where despite the EU's reputation for over-regulation, it has only engaged in two pieces of regulatory/legislative activities specifically directed at AI over the last 10 years. In contrast, the USA, although perceived to be a light-regulator has multiple ongoing regulatory and legislative activities related to AI. China's approach to AI regulation echoes its approach to regulation of online platforms: initially focussed on establishing principles and codes of conduct, followed by an acceleration of legislation aimed at evidence gathering, active monitoring, and shaping industry and private sector activity. This perception paradox however needs to be understood in the context of the significant differences in the breadth, depth, and strength of these regulatory regimes. China's approach to AI regulation is aimed at ensuring that any AI innovation and development efforts by the industry and private sector are aligned with its emphasis on social harmony and state-directed market economy. The EU's efforts vis-à-vis the AI Act and the GPAI code of practice are mainly aimed at horizontal regulation with the member states in-charge of adoption, and implementation of the rules. The AI Act and Code of Practice are part of an ecosystem of legislation including (but not limited to) GDPR, DSA, DMA, and harmonised rules on fair access to and use of data (i.e. the Data Act). Despite the broad range of legislation in varying stages of development at the state and federal level, the overriding objective of the US approach to AI regulation is to harness the US advantages and competitiveness in AI hardware and software development.

Beyond this perception paradox, the differences in Chinese, EU, and USA approaches to AI regulation are indicative of the role of not only technological but also geo-political and economic competition and how it will shape the direction of regional/national AI R&D and market developments. In each of these cases, the regulation has converging goals of ensuring commercial, military, and social advantages with AI expected to be the defining, transformational technology. This means that regulatory approaches have covered a broad spectrum of 'commands' ranging from self-assessment guidelines to frameworks for national or transnational regulation. These approaches suggest that a highly competitive environment is likely to prevail as AI developments and deployments outpace attempts to regulate it, the perceived risks of AI and its trustworthiness, and the potential benefits of widespread AI adoption.

For China, AI technologies not only offer a pathway to not only social and economic growth but also provides the prospect of strengthening its technology competitiveness and national security. Its approach also makes space for civilian and military AI research and applications. China's AI Industry plan therefore targets rapid industrialisation aligned with domestic use of AI for political, economic, and social purposes. Although there is a centralised top-down attempt to regulate AI for the purposes of fulfilling China's ambitions at nationally and globally, there are multiple AI strategy and policy documents with overlapping goals targeting a wide range of sectors including healthcare, transportation, agriculture, finance, logistics and education. The multiplicity of plans indicates that the regulatory responsibilities are not yet fully demarcated between national and state levels. This suggests that to realise the stated ambition of making China the leader in the use, definition, and description of AI and realising its potential benefits, there is scope for coordinated action amongst the different stakeholders involved.

Given China's strengths in the manufacturing sector, AI-led automation presents it challenges and opportunities in equal measure. Although effective uses of automation can deliver economic benefits along with increased productivity, it can also increase social and financial disparities between urban and rural areas. Recent regulatory activity, whether incorporation of algorithmic registries, Internet Information Service Algorithmic Recommendation Management Provisions, or the Personal Information Protection Law suggests a meta-regulatory expansion of the central and regional oversight of AI. Even if the AIDP's goals of defining ethical norms and standards have started to take concrete shape with this recent regulatory activity, the implications are not yet clear when the extensive integration of platform-led services by national technology champions such as Alibaba, Tencent, and Baidu in the daily lives of a Chinese end-user is considered.

The EU AI regulation is positioned between the AI regulation approaches adopted by China and the USA. The EU's approach is to target AI regulation through a risk-based classification of AI systems with a focus on ethical use of AI to ensure a citizen's right to data privacy and limits of secondary data processing by AI. Although the use of risk-based classification is intended to enable an 'ecosystem of trust', the extent to which it does so while facilitating growth in trade and investments in the European regions remains to be seen. Vis-à-vis the services sector, the AI Act has implications for data protection, product conformity, safety of product components, market surveillance and compliance of products, risk management in the credit institutions sector, use of AI in healthcare, and personalisation of transport and retail services.

Similar to the GDPR, the AI Act and GPAI Code of Practice position the EU as the standard-bearer of regulatory decision-making on AI which may then see global adoption further entrenching the so-called 'Brussels effect'. Although modelled after GDPR, the AI Act differs in being a framework legislation, which cross-references several other existing EU legislative acts. Given its broad scope, the extent to which it could effectively enable member states and other global adopters of its approach to manage societal impacts of AI at regional/ national levels is not known. Although the EU's approach is incremental and aimed at managing long-term impacts of AI, its political implementation is subject to an uncertain and changing geopolitical landscape. Whether the EU could deliver on its attempt to create a horizontal regulation of AI through an ethical, human-centric and value-based approach is likely to depend on how the national regimes in China and the USA respond to it.

Unlike China or the EU, the USA does not have a national regulatory plan for AI. Although the 2025 Executive order is explicitly aimed at maintaining the USA's advantages in AI software and hardware, the long-term influence of the order on state-level and federal legislation on AI is not yet known at this stage. In the interim, the regulation of AI in the USA is likely to remain highly decentralised with various federal departments, states, courts, private companies, and civil society organizations proposing a range of actions from modifying existing laws and institutions to voluntary codes of conducts in response to the use of AI in different industries. The distributed, ad-hoc approach to regulation of AI is also likely to continue as a means of responding to market developments, and emerging risks. Such a fragmented approach requires evidence-gathering to understand market changes, and yet offers the flexibility of aiming for governing AI specific to sectors (e.g. use of facial recognition in public spaces) and fundamental rights of sections of society (e.g. mitigating bias in workplace hiring, financial lending, or criminal prosecution).

Along with China, the USA is a global leader in AI technology development in terms of R&D activity, venture capital investments, and market capitalisation of technology companies. The USA's view of AI regulation is therefore focussed on domestic use and deployment of AI, on the one hand. On the other hand, it also considers strategic issues of international relevance related to military use of AI and market-orientated activities related to AI standards or codes of conduct. As the EU's approach to regulating AI systems based on a risk-based classification stabilises, any engagement by the USA with it is likely to prioritise ensuring that the economic interests of its technology companies are protected. Since only the high-risk AI systems are expected to be subject to the toughest restrictions and controls, any future negotiations between China, EU, and the USA on AI regulation are likely to focus on common definitions of such systems and a framework for governing them. Geopolitical considerations will heavily influence whether such negotiations could lead to a mix of cooperative agreements on public-private partnerships on AI-related R&D, and certification schemes for AI products and services between China, EU, and the USA.

Vis-à-vis domestic use of AI in the USA, it is very likely that specialised agencies will identify and extend their own AI regulation related to various services sectors including financial services, online and broadcast media (entertainment and sports), public and private healthcare, transport. Protection of employment and consumer rights across various services and manufacturing sector impacted by AI is also likely to be a key focus on domestic regulation of AI in the USA.

When the intended long-term outcomes are considered, China's state-directed approach can be considered to aim for a mix of normative, military, and market power through evidence-based, rights-based, and risk-based regulation of AI. The USA's distributed, sectoral approach is evidence-based, and rights-based regulation of AI aligned the market power of its technology sector and takes into consideration the military and national security implications of AI. The EU's risk-based approach to comprehensive AI regulation is more focussed on the normative power of AI regulation, partly owing to China and the USA's dominance in the technology sphere. Although these approaches are likely to remain divergent vis-à-vis military uses of AI and economic leverage offered by sovereign AI capabilities, in the long-term cooperation may prevail on regulating civilian, societal impacts of AI. Such cooperation would be essential to establishing global, interoperable standards on AI to better harness the transformative potential of AI.

## References

Anderljung, M. *et al.* (2023) 'Frontier AI Regulation: Managing Emerging Risks to Public Safety'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2307.03718>.

Broadbent, M. and Arrieta-Kenna, S. (2021) 'AI Regulation: Europe's Latest Proposal is a Wake-Up Call for the United States'. Available at: <https://www.csis.org/analysis/ai-regulation-europes-latest-proposal-wake-call-united-states> (Accessed: 16 February 2023).

Cantero Gamito, M. and Marsden, C.T. (2024) 'Artificial intelligence co-regulation? The role of standards in the EU AI Act', *International Journal of Law and Information Technology*, 32, p. eaae011. Available at: <https://doi.org/10.1093/ijlit/eaae011>.

- Chae, Y. (2020) 'U.S. AI Regulation Guide: Legislative Overview and Practical Considerations', *RAIL: The Journal of Robotics, Artificial Intelligence & Law*, 3, p. 17.
- Choquette, V. and Jones, J. (2021) *Sub-Committee 2: Transatlantic approaches to protect fundamental rights in AI & digital spaces*. Club De Madrid. Available at: <https://clubmadrid.org/wp-content/uploads/2022/06/Issues-Brief-Transatlantic-approaches-on-AI-and-fundamental-rights.pdf>.
- Chun, J., Witt, C.S. de and Elkins, K. (2024) 'Comparative Global AI Regulation: Policy Perspectives from the EU, China, and the US'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2410.21279>.
- Cihanová, J. (2024) 'AI Regulation: The EU and China Approach', *Acta Facultatis Iuridicae Universitatis Comenianae*, 43(1), pp. 16–16. Available at: <https://doi.org/10.62874/afi.2024.1.01>.
- Coglianesi, C. (2012) *Regulation's Four Core Components | The Regulatory Review, The Regulatory Review*. Available at: <https://www.theregreview.org/2012/09/17/regulations-four-core-components/> (Accessed: 19 August 2022).
- Cole, M.D. (2024) 'International AI Regulation and Governance on a Global Scale: An Overview of International, Regional and National Instruments', *Journal of AI Law and Regulation*, 1(1), pp. 126–142. Available at: <https://doi.org/10.21552/aire/2024/1/16>.
- Cyman, D., Gromova, E. and Juchnevicius, E. (2021) 'Regulation of Artificial Intelligence in BRICS and the European Union', *BRICS Law Journal*, 8(1), pp. 86–115.
- Davtyan, T. (2024) 'An Overview of Global Efforts Towards AI Regulation', *Bulletin of Yerevan University C: Jurisprudence*, 15(2 (41)), pp. 158–174. Available at: <https://doi.org/10.46991/BYSU.C/2024.15.2.158>.
- Davtyan, T. (2025) 'The U.S. Approach to AI Regulation: Federal Laws, Policies, and Strategies Explained', *Journal of Law, Technology, & the Internet*, 16(2), p. 223.
- DePaula, N. *et al.* (2025) 'The evolving AI regulation space: A preliminary analysis of US state legislations addressing AI, 2024', *Conference on Digital Government Research*, 1. Available at: <https://doi.org/10.59490/dgo.2025.937>.
- Dong, H. and Chen, J. (2024) 'Meta-Regulation: An ideal alternative to the primary responsibility as the regulatory model of generative AI in China', *Computer Law & Security Review*, 54, p. 106016. Available at: <https://doi.org/10.1016/j.clsr.2024.106016>.
- Duan, Y. *et al.* (2022) 'Research on the Regulation of Artificial Intelligence on the Orderly Development of China's Intelligent Economy', in *2022 Asia-Pacific Computer Technologies Conference (APCT). 2022 Asia-Pacific Computer Technologies Conference (APCT)*, pp. 11–15. Available at: <https://doi.org/10.1109/APCT55107.2022.00017>.
- European Commission (2018) *Artificial Intelligence for Europe*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A237%3AFIN> (Accessed: 21 March 2023).

European Commission (2021) *Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on Artificial Intelligence (AI Act) and amending certain union legislative acts, COM/2021/206 final*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52021PC0206> (Accessed: 22 March 2023).

European Commission (2023) *A European approach to artificial intelligence | Shaping Europe's digital future*. Available at: <https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence> (Accessed: 22 March 2023).

Finocchiaro, G. (2024) 'The regulation of artificial intelligence', *AI & SOCIETY*, 39(4), pp. 1961–1968. Available at: <https://doi.org/10.1007/s00146-023-01650-z>.

Floridi, L. (2021) 'The European Legislation on AI: a Brief Analysis of its Philosophical Approach', *Philosophy & Technology*, 34(2), pp. 215–222. Available at: <https://doi.org/10.1007/s13347-021-00460-9>.

Franks, E., Lee, B. and Xu, H. (2024) 'Report: China's New AI Regulations', *Global Privacy Law Review*, 5(1). Available at: <https://kluwerlawonline.com/api/Product/CitationPDFURL?file=Journals\GPLR\GPLR202407.pdf> (Accessed: 23 June 2025).

Glauner, P. (2021) 'An Assessment of the AI Regulation Proposed by the European Commission'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2105.15133>.

Gonzalez Torres, A.P. and Ali-Vehmas, T. (2025) 'AI regulation: maintaining interoperability through value-sensitive standardisation', *Ethics and Information Technology*, 27(2), p. 26. Available at: <https://doi.org/10.1007/s10676-025-09832-7>.

Graceffo, A. (2017) *China's National Champions: State Support Makes Chinese Companies Dominant*, *Foreign Policy Journal*. Available at: <https://www.foreignpolicyjournal.com/2017/05/15/chinas-national-champions-state-support-makes-chinese-companies-dominant/> (Accessed: 21 March 2023).

Gstrein, O.J. (2022) 'European AI Regulation: Brussels Effect versus Human Dignity?' Rochester, NY. Available at: <https://doi.org/10.2139/ssrn.4214358>.

Gstrein, O.J., Haleem, N. and Zwitter, A. (2024) 'General-purpose AI regulation and the European Union AI Act', *Internet Policy Review*, 13(3), pp. 1–26. Available at: <https://doi.org/10.14763/2024.3.1790>.

Gutierrez Gaviria, C.I. (2022) 'The Role of Artificial Intelligence in Pushing the Boundaries of U.S. Regulation: A Systematic Review', *Santa Clara High Technology Law Journal*, 38, p. 123.

Hacker, P. (2023) 'AI Regulation in Europe: From the AI Act to Future Regulatory Challenges'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2310.04072>.

Heim, L. *et al.* (2024) 'Governing Through the Cloud: The Intermediary Role of Compute Providers in AI Regulation'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2403.08501>.

High-Level Expert Group on AI (AI HLEG) (2019a) *Ethics guidelines for trustworthy AI*. European Commission. Available at: <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai> (Accessed: 22 March 2023).

High-Level Expert Group on AI (AI HLEG) (2019b) *Policy and investment recommendations for trustworthy Artificial Intelligence*. European Commission. Available at: <https://digital-strategy.ec.europa.eu/en/library/policy-and-investment-recommendations-trustworthy-artificial-intelligence> (Accessed: 22 March 2023).

Hu, Q. and Liu, W. (2024) 'The Regulation of Artificial Intelligence in China', in. *2024 3rd International Conference on Social Sciences and Humanities and Arts (SSHA 2024)*, Atlantis Press, pp. 681–689. Available at: [https://doi.org/10.2991/978-2-38476-259-0\\_71](https://doi.org/10.2991/978-2-38476-259-0_71).

Hutson, M. (2023) 'Rules to keep AI in check: nations carve different paths for tech regulation', *Nature*, 620(7973), pp. 260–263. Available at: <https://doi.org/10.1038/d41586-023-02491-y>.

Jing, M. and Dai, S. (2017) *China recruits Baidu, Alibaba and Tencent to AI 'national team'*, *South China Morning Post*. Available at: <https://www.scmp.com/tech/china-tech/article/2120913/china-recruits-baidu-alibaba-and-tencent-ai-national-team> (Accessed: 21 March 2023).

Judge, B., Nitzberg, M. and Russell, S. (2025) 'When code isn't law: rethinking regulation for artificial intelligence', *Policy and Society*, 44(1), pp. 85–97. Available at: <https://doi.org/10.1093/polsoc/puae020>.

Justo-Hanani, R. (2022) 'The politics of Artificial Intelligence regulation and governance reform in the European Union', *Policy Sciences*, 55(1), pp. 137–159. Available at: <https://doi.org/10.1007/s11077-022-09452-8>.

Kewalramani, M. (2018) 'China's Quest for AI Leadership: Prospects and Challenges'. Rochester, NY. Available at: <https://doi.org/10.2139/ssrn.3414883>.

Knight, W. (2020) 'Baidu Breaks Off an AI Alliance Amid Strained US-China Ties', *Wired*. Available at: <https://www.wired.com/story/baidu-breaks-ai-alliance-strained-us-china-ties/> (Accessed: 21 March 2023).

Kop, M. (2021) *EU Artificial Intelligence Act: The European Approach to AI*. Issue No. 2/2021. Transatlantic Technology Law Forum. Available at: <https://law.stanford.edu/publications/eu-artificial-intelligence-act-the-european-approach-to-ai/> (Accessed: 22 March 2023).

Kumar, A. (2021) *National AI Policy/Strategy of India and China: A Comparative Analysis*. RIS-DP #265. Research and Information System for Developing Countries (RIS). Available at: <https://gdc.ris.org.in/sites/default/files/Publication/DP-265-Amit-Kumar.pdf>.

Kuzior, A. et al. (2024) 'Navigating AI Regulation: A Comparative Analysis of EU and US Legal Frameworks', *Materials Research Proceedings*, 45, pp. 258–266. Available at: <https://doi.org/10.21741/9781644903315-30>.

- Lancieri, F., Edelson, L. and Bechtold, S. (2024) 'AI Regulation: Competition, Arbitrage & Regulatory Capture', *Center for Law & Economics Working Paper Series*, 11/2024. Available at: <https://doi.org/10.3929/ethz-b-000708626>.
- Lobel, O. (2024) 'The AI Regulatory Pyramid: A Taxonomy & Analysis of the Emerging Toolbox in the Global Race for the Regulation and Governance of Artificial Intelligence', *Loyola of Los Angeles Law Review*, 57, p. 859.
- Lucero, K. (2019) 'Artificial Intelligence Regulation and China's Future', *Columbia Journal of Asian Law*, 33, p. 94.
- Ma, A. (2024) 'Regulation in pursuit of artificial intelligence (AI) sovereignty: China's mix of restrictive and facilitative modalities', *The African Journal of Information and Communication (AJIC)*, (34), pp. 1–16. Available at: <https://doi.org/10.23962/ajic.i34.20103>.
- MacCarthy, M. and Propp, K. (2021) 'Machines Learn That Brussels Writes the Rules: The EU's New AI Regulation'. Available at: <https://ai-regulation.com/wp-content/uploads/2021/04/Machines-learn-tht-Bssl-write-the-rules.pdf>.
- McBride, J. and Chatzky, A. (2019) *Is 'Made in China 2025' a Threat to Global Trade?*, *Council on Foreign Relations*. Available at: <https://www.cfr.org/background/made-china-2025-threat-global-trade> (Accessed: 22 March 2023).
- Middleton, S.E. *et al.* (2022) 'Trust, regulation, and human-in-the-loop AI: within the European region', *Communications of the ACM*, 65(4), pp. 64–68. Available at: <https://doi.org/10.1145/3511597>.
- Mikhailovna, A.M. (2022) 'Legal Regulation of Artificial Intelligence in the Military and Industrial Complex (On the example of China and the EU)', *The Newman in Foreign policy*, 2(65 (109)), pp. 72–76.
- Mökander, J. *et al.* (2022) 'Conformity Assessments and Post-market Monitoring: A Guide to the Role of Auditing in the Proposed European AI Regulation', *Minds and Machines*, 32(2), pp. 241–268. Available at: <https://doi.org/10.1007/s11023-021-09577-4>.
- Musch, S., Borrelli, M. and Kerrigan, C. (2023) 'The EU AI Act As Global Artificial Intelligence Regulation'. Rochester, NY: Social Science Research Network. Available at: <https://doi.org/10.2139/ssrn.4549261>.
- Rádi, V.G. (2023) 'Comparative Analysis of the AI Regulation of the EU, US and China from a Privacy Perspective', in *2023 46th MIPRO ICT and Electronics Convention (MIPRO). 2023 46th MIPRO ICT and Electronics Convention (MIPRO)*, pp. 1446–1451. Available at: <https://doi.org/10.23919/MIPRO57284.2023.10159864>.
- Roberts, H. *et al.* (2019) 'The Chinese Approach to Artificial Intelligence: An Analysis of Policy and Regulation'. Rochester, NY. Available at: <https://doi.org/10.2139/ssrn.3469783>.
- Roberts, H. *et al.* (2023) 'Governing artificial intelligence in China and the European Union: Comparing aims and promoting ethical outcomes', *The Information Society*, 39(2), pp. 79–97. Available at: <https://doi.org/10.1080/01972243.2022.2124565>.

- Roberts, H. *et al.* (2024) 'Global AI governance: barriers and pathways forward', *International Affairs*, 100(3), pp. 1275–1286. Available at: <https://doi.org/10.1093/ia/iaae073>.
- Sheehan, M. (2023) 'China's AI Regulations and How They Get Made', *Horizons: Journal of International Relations and Sustainable Development*, (24), pp. 108–125.
- Siegmann, C. and Anderljung, M. (2022) 'The Brussels Effect and Artificial Intelligence: How EU regulation will impact the global AI market'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2208.12645>.
- Smuha, N.A. (2021) 'From a "race to AI" to a "race to AI regulation": regulatory competition for artificial intelligence', *Law, Innovation and Technology*, 13(1), pp. 57–84. Available at: <https://doi.org/10.1080/17579961.2021.1898300>.
- Ulnicane, I. (2022) 'Artificial intelligence in the European Union', in Hoerber, T., Weber, G., and Cabras, I., *The Routledge Handbook of European Integrations*. Taylor & Francis. Available at: <https://doi.org/10.4324/9780429262081-19>.
- Vasconcelos Novaes, R. and Wanderley Júnior, B. (2025) 'Contrasting Approaches to AI Regulation—A Comparative Analysis of the EU AI Act and China's Cyberspace Administration Decrees', *Beijing Law Review*, 16(1), pp. 501–540. Available at: <https://doi.org/10.4236/blr.2025.161025>.
- Veale, M. and Borgesius, F.Z. (2021) 'Demystifying the Draft EU Artificial Intelligence Act', *Computer Law Review International*, 4, pp. 97–112.
- Voss, W.G. (2021) 'AI Act: The European Union's Proposed Framework Regulation for Artificial Intelligence Governance', *Journal of Internet Law*, 25(4), pp. 1–17.
- Vujicic, J. (2024a) 'Algorithmic accountability and ethical oversight: legal challenges in transatlantic AI regulation', *International Journal of Science and Research Archive*, 13(2), pp. 4409–4419. Available at: <https://doi.org/10.30574/ijrsra.2024.13.2.0722>.
- Vujicic, J. (2024b) 'Global AI regulation and its impact on technology business: A comparative legal framework analysis', *World Journal of Advanced Research and Reviews*, 24(3), pp. 3457–3463. Available at: <https://doi.org/10.30574/wjarr.2024.24.3.3911>.
- Wachter, S. (2023) 'Limitations and Loopholes in the EU AI Act and AI Liability Directives: What This Means for the European Union, the United States, and beyond', *Yale Journal of Law and Technology*, 26, p. 671.
- Webster, G. *et al.* (2017) *Full Translation: China's 'New Generation Artificial Intelligence Development Plan' (2017)*, *DigiChina*. Available at: <https://digichina.stanford.edu/work/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/> (Accessed: 21 March 2023).
- Wu, W. and Liu, S. (2023) 'A Comprehensive Review and Systematic Analysis of Artificial Intelligence Regulation Policies'. arXiv. Available at: <https://doi.org/10.48550/arXiv.2307.12218>.

Xu, J. (2024) 'Opening the "black box" of algorithms: regulation of algorithms in China', *Communication Research and Practice*, 10(3), pp. 288–296. Available at: <https://doi.org/10.1080/22041451.2024.2346415>.

Zhang, A.H. (2025) 'The Promise and Perils of China's Regulation of Artificial Intelligence', *Columbia Journal of Transnational Law*, 63. Available at: <https://heinonline.org/HOL/Page?handle=hein.journals/cjtl63&id=5&div=&collection=>.