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Attempts to Regulate Artificial Intelligence: Regulatory Practices from the United States, the European Union, and the People's Republic of China

I. Introduction

Artificial intelligence, or AI for short, is one of the most remarkable developments of this decade. Unlike the natural intelligence exhibited by humans and other animals, artificial intelligence is intelligence demonstrated by machines. AI research has been characterized as the examination of intelligent agents, which relates to any system that comprehends its surroundings, and takes decisions and actions to maximize its likelihood of success.[1] AI is being used in a growing number of industries, and it has a promising future in the coming years. Having said that, AI is nothing short of a revolution. It involves highly complicated processes, and sometimes even engineers who write the algorithms do not understand why they function the way they do and create the phenomenon called artificial intelligence.[2]

Beyond the technical aspects of artificial intelligence, there are also philosophical and psychological dimensions to it. Therefore, it is worth examining the background of artificial intelligence from the human perspective. Even though it is only recently that AI has become generally understood and employed in its modern sense, its origins may be traced back hundreds of years. Ancient mythology provides some of the earliest examples of humans striving to make a perfect companion, their own creation that is exactly like them. *Pygmalion*, a Cypriot sculptor from Greek mythology, for example, failed to find any women that met his expectations. As a result, he resolved to build a sculpture of a woman

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1 POOLE, DAVID – MACKWORTH, ALAN – GOEBEL, RANDY: *Computational Intelligence: A Logical Approach*. Oxford University Press. New York, 1998.

2 BONET, BLAI – GEFFNER, HECTOR: *Learning depth-first search: A unified approach to heuristic search in deterministic and non-deterministic settings, and its application to MDPs*. In: ICAPS'06: Proceedings of the Sixteenth International Conference on International Conference on Automated Planning and Scheduling. AAAI Press. Palo Alto, 2006. pp. 142–151.

that embodied the greatest attributes of aesthetics. As a result, he could not help himself but fell in love with the statue he had created.[3] This tale is frequently used as an example of artificial intelligence because it demonstrates how people can bring about things with which they can have emotional connections. Beyond the flaws of human judgment, mental limitations, and psychological fragility, artificial intelligence has evolved as a phenomenon capable of overcoming these limitations.

Since its early years, there have been significant improvements in the field of artificial intelligence. It has become progressively more and more sophisticated while being employed in a wide range of processes from self-driving cars to the development of more realistic video games or assisting humans with tasks such as data entry and machine-aided translation. There is a wide range of potential applications for this technology. Handling highly complicated issues that society has been facing is one of the reassuring potentials of AI. To better comprehend and address the difficulties humanity encounters, people will require ever-sophisticated technologies, as the world is becoming more dynamic and interconnected. The use of self-learning algorithms can help overcome some of these complex problems. Artificial intelligence can help people identify potential risks in the environment and come up with effective solutions. Furthermore, resource management processes can be improved with the help of this technology. As a result, business processes can become more effective by the increase in production output, and the reduction in waste and its negative environmental impacts. The development of novel drugs and medical therapies is another field in which artificial intelligence can make a difference. It can help people with the treatment of fatal diseases, extend human life expectancy and improve quality of life. Furthermore, AI can impact the food and agriculture sector positively. It can help manage food production most effectively by conserving energy and water sources by optimizing the agricultural management processes. Finally, supply chain and logistics can benefit from the use of automation and machine learning. As Supply Chain management is one of the most crucial areas of production and economy, sustaining a high standard of living within society depends on the well-functioning of the supply chain systems. It is not possible to create an affluent society without efficient logistics and supply chains. Hence, AI applications can be employed to provide better communication between suppliers and customers, improve storage conditions and optimize transportation, which could increase the quality of goods and services while keeping the prices at an optimum level. Ultimately, the increasing application of artificial intelligence technologies into more and more businesses and sectors will lead to the development of more technologies and the creation of new fields. Hence, the door to innovations and to the new future potential of AI must remain open if we are to maintain a thriving economy and improve the standards of living for the public.

Nonetheless, it is important to use technology responsibly and constructively. Despite the numerous potential benefits of AI, some challenges come along with its development and application. Due to this reason, it is important to pay attention to how we create and use AI technologies. If the regulations are drafted carelessly, it could have serious detrimental effects on technological advancement, innovation, and society. One of the major challenges of AI is its increasing complexity and the difficulty it brings in understanding and analyzing

[3] HAMILTION, EDITH: *Mythology*. Vidyodaya Library Private LTD. Calcutta, 1953. p. 108.

its implementation. If left unchecked, this can create some hazardous situations, such as making decisions that harm people emotionally, psychologically, or even physically, while causing property damage along the way. Another abusive approach can come from the state institutions. If they deploy this technology for mass surveillance and filtering, the fundamental rights of the citizens, such as privacy, freedom of speech, and civil liberties, will be compromised. Another gloomy picture can be made if AI technologies are wielded to build sophisticated weapons that could cause major damage. Military use of AI can open Pandora's box with unforeseeable consequences. Another negative aspect can be given from an economic perspective, with considerable social implications. Automation and machine learning have the potential to displace some workers because of their high levels of accuracy and efficiency in comparison with human labor. For instance, AI systems may replace workers who perform simple analyses or data entry tasks that are amenable to automation. In such instances, the owner of those technologies will reap all the profits. As it happened in the United Kingdom with the advent of the industrial revolution and the use of machines in wool production, this has the potential to spark civil unrest and civil wars due to massive unemployment and social injustice. From this perspective, it is worth considering how these negative aspects associated with AI applications can be overcome while increasing societal wealth rather than growing inequalities between rich and poor.

To address these challenges, the leading countries and regions in AI technologies come up with an increasing number of AI regulations and legal frameworks. Nonetheless, there are several ethical concerns about artificial intelligence that need to be considered when developing regulations. For example, AI systems are often trained on data sets that contain bias. This can lead to biased results when the AI system is used in the real world.[4] There is also a risk that AI could be used for malicious purposes, such as creating fake news or spreading misinformation.[5] However, others believe that too much regulation could stifle innovation and hamper the development of better AI applications and advocate for a more balanced approach that considers the risks and benefits of AI.[6] Inexorably, the AI revolution is upon us, and it comes along with both its opportunities and its challenges. These complications due to the faulty application of AI technologies accentuate the need for increasing awareness of the potential risks. This can help in finding effective solutions to mitigate those risks. It also means ensuring that AI technology is accessible to everyone and benefits society as a whole, not just a select few. At the same time, we must embrace AI's potential to enhance our lives and transform the world. To reap the most benefits from AI technology, we must ensure that it is developed responsibly and used for the greater good of humanity. Only in this way can a prosperous future for the greater society be achieved. This paper will investigate the Artificial Intelligence Regulatory practices of the leading countries and regions in this field.

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[4] NTOUTSI, ERINI – FAFALIOS, PAVLOS – GADIRAJU, UJVWAL ET AL.: *Bias in data-driven artificial intelligence systems—An introductory survey.* WIREs Data Mining and Knowledge Discovery 10(3), 2020, e1356.

[5] See: GIANSIRACUSA, NOAH: *How Algorithms Create and Prevent Fake News*. Apress. Berkley, 2021.

[6] See: CHESTERMAN, SIMON: *We, the robots?* Cambridge University Press. Cambridge, 2021.

II. Aim of the Study and Methodology

The study aims to evaluate a variety of issues generated by the expanding use of AI algorithms in various processes and to investigate how leading nations in the development of AI technology intend to deal with this issue from a legal standpoint. It compares and contrasts the regulatory systems adopted by the United States, the European Union, and the People's Republic of China. This approach may be useful in giving a comprehensive view while tracking the differences by examining the similarities and limitations of the most current legal developments.

A qualitative research methodology was employed to conduct the main parts of this study. Non-numerical data were gathered as part of the evaluation of regulatory frameworks and critical analysis in order to comprehend key ideas, challenges, and objectives. This data is used to draw a connection between the issues caused by AI technology and how governments have responded to these developments. This connection facilitates comprehension of AI-related challenges and offers novel ideas for AI policymaking by focusing on the contemporary legal responses from those nations.

Furthermore, data from prior regulatory initiatives and frameworks from three significant geographies – the U.S., the EU, and the People's Republic of China – were acquired utilizing the secondary research methodology. The focus of this study is shifted to these three regions since they serve as the primary hubs for the major AI development initiatives with their technical, economic, and legal capabilities. The EU is included as a region as comprehensive regulatory frameworks are developed at the EU level for the member states to draft at the national level. Refer to section 2 "AI Regulation Internationally versus at the National Levels" for further information on the differences between national and international AI regulation. Since AI regulation is a relatively new issue, a secondary research approach is utilized to examine the broad patterns across different legal systems and relate the place of such developments within the larger international regulatory initiatives. Existing legal frameworks and AI regulations are evaluated thematically to find patterns across different regulatory systems and to interpret them in light of such patterns. In this way, the parallels and differences between regulatory initiatives were investigated.

III. Literature Review

Artificial intelligence is still a relatively young field within the statistics and computer science fields. As a result, the available literature scarcely extends beyond a decade. Furthermore, this is a dynamic sector with constantly evolving methodologies, applications, and tools. Legal approaches to AI are still in their infancy. Many regulatory methods were implemented within this decade, and there has been an engagement of experts and their perspectives on regulatory approaches through reports and white papers. Nonetheless, this chapter will have to narrow the scope to scientific literature rather than reports and white papers.

Literature comes in a variety of forms with a range of theoretical assumptions, methods, and applications. In this literature review section, numerous scientific papers have been grouped into three categories. The first category contains technical scientific studies that

examine artificial intelligence and its functions from a computational and technological standpoint. They explain various aspects of artificial intelligence, machine learning, and how algorithms work from a technical and mathematical approach. The second body of work looks at the connection between the human mind and artificial intelligence from a philosophical standpoint. The ethical use of AI algorithms is also questioned in this grouping. Finally, the third body of study focuses on the negative implications of artificial intelligence and analyzes topics of AI governance. Because the technology parts of AI were established earlier than the legal considerations, the first group has the richest and most established literature among the latter two. As a result, the themes linked to AI regulation and legal procedures around AI are the most recent and have the least amount of literature. Since the regulatory sector is relatively new, this study aims to fill a gap in the scientific literature by addressing issues in the face of AI regulation and analyzing how major stakeholders approach regulation in their similarities and disparities.

In the first group, several notable works that describe the phenomenon of artificial intelligence can be cited. One of the first and most renowned introductions to artificial intelligence was written by *Patrick Henry Winston* in 1984 and is titled 'Artificial Intelligence'. Winston is an outstanding artificial intelligence scientist who headed MIT's Artificial Intelligence Laboratory, and his hands-on AI research expertise gives a layer of quality to his writing.[7] *Winston* includes full pseudo-code for the majority of the techniques described, making it possible to create and test the algorithms right away for his predecessors. Another early example is 'Multiagent Systems, A Modern Approach to Distributed Artificial Intelligence,' which is edited by *Gerhard Weiss* and published in 2000. This is a notable publication since it is the first thorough introduction to multiagent systems and modern distributed artificial intelligence. The book covers basic issues in depth as well as other closely connected ones, bringing together several renowned specialists to ensure a broad and diversified basis of knowledge and skill. It addresses both theory and application and includes several instances and examples.[8] The concepts can be also compared with the earlier examples of computation in order to understand the analyze the nature of AI better. The book 'The Essential Turing: Seminal Writings in Computing, Logic, Philosophy, Artificial Intelligence, and Artificial Life: Plus the Secrets of Enigma,' edited by *Jack Copeland* is an essential work that delves into the early developments of AI in the system devised by Alan Turing, a computing pioneer, and World War II codebreaker[9]. This compilation brings *Turing*'s most important articles to a wider audience for the first time. These ground-breaking writings, which are also rich in philosophical and logical insight, are significant historical works. This study is significant because it gives insight into the early machines that generated current computational theory, cognitive science, artificial intelligence, and artificial life. There began to appear earlier works on artificial intelligence in the first decade of this century.

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[7] WINSTON, PATRICK HENRY: Artificial intelligence. Addison-Wesley Longman Publishing Co. Reading, 1984.

[8] WEISS, GERHARD (ed.): *Multiagent systems: a modern approach to distributed artificial intelligence*. MIT press. Cambridge, 1999.

[9] COPELAND, JACK (ed.): *The Essential Turing: Seminal Writings in Computing, Logic, Philosophy, Artificial Intelligence, and Artificial Life: Plus the Secrets of Enigma*. Oxford University Press. Oxford, 2007.

The book 'Artificial General Intelligence', which was edited by *Ben Goertzel* and *Cassio Pennachin* is specifically about developing universal intelligence – independent, self-reflective, self-improving intelligence. In each chapter, authors describe a distinct component of artificial general intelligence in depth, while simultaneously analyzing common themes in the work of several organizations and addressing the great, unanswered problems in this critical field[10]. The book focuses on a unified discussion of artificial general intelligence and the connections between AI and other subjects such as physics, engineering, biology, neurology, linguistics, sociology, psychology, anthropology, and philosophy. *Tim Jones*'s book 'Artificial intelligence: a systems approach' presents a unique glimpse into the fundamental principles of AI. The book discusses a wide range of AI applications, including game programming, intelligent agents, neural networks, and artificial immune systems.[11] Besides the fundamental subjects and theoretical approaches, practical parts concerning data intake, reduction, and output are also covered. This is why the study is crucial since it examines current industry methods from a fresher angle as opposed to theoretical old-school AI concepts like pattern recognition, numerical optimization, and data mining, which were only transformed into other sorts of algorithms.

In the second group of publications, several prominent works will be covered in this part. To begin with, *Aaron Sloman*'s work 'Interactions between philosophy and artificial intelligence: The importance of intuition and non-logical reasoning in intelligence' is one of the earlier examples of its kind which examines AI from a philosophical perspective.[12] His book is published in 1971 and it is a fundamental philosophical work that examines AI. Philosophical issues with the use of intuition in reasoning are linked to issues of the simulation of perception, problem-solving, and the development of meaningful sets of alternatives when deciding how to behave via the idea of analogical representation. This book may be used to assess the limits of AI, the likelihood of a super AI, and if AI can outperform human cognitive capabilities. There is another essential work titled 'Minds and Computers: An Introduction to the Philosophy of Artificial Intelligence' by *Matt Carter*.[13] It is a fundamental introduction to AI as a philosophical theory of mind. It includes themes in cognitive science related to the human mind, computing, logic, language, and philosophical questions. The approach is moderately technical and philosophical, with each chapter indicating theory and arguments. The book dives into themes such as consciousness, identity, and emotions, as well as functional neuroanatomy and brain networks detailed in twenty chapters. 'Mind Design II' by *Haugeland* brings together virtually all the important philosophical approaches in Cognitive Science. This volume, released in 1997, maintains the conceptual underpinnings, with discussions of classical AI constructed on top of them, while also introducing connectionism, situated

[10] GOERTZEL, BEN – PENNACHIN, CASSIO: *Artificial General Intelligence.* Springer. Berlin, 2007.
[11] JONES, M. TIM: *Artificial Intelligence: A Systems Approach*. Infinity Science Press. Hingham, 2008.
[12] SLOMAN, AARON: *Interactions between philosophy and artificial intelligence: The role of intuition and non-logical reasoning in intelligence.* Artificial intelligence 2(3–4), 1971, pp. 209–225.
[13] CARTER, MATT: *Minds and Computers: An Introduction to the Philosophy of Artificial Intelligence*. Edinburgh University Press. Edinburgh, 2007.

AI, and dynamic systems theory.[14] The work is critical for understanding the public's perception of AI before the turn of the century.

Another source is 'The Oxford Handbook of Ethics of AI' which is edited by *Markus D. Dubber*, *Frank Pasquale*, and *Sunit Das* is published in 2020. The book investigates the rapidly growing topic of Artificial Intelligence, mapping existing discourse as part of a broader endeavor to identify current developments in ethical AI applications while also forging new ground in taking on novel subjects and exploring creative methodologies.[15] The volume analyzes the issues faced by the current level of AI and poses fundamental concerns about individual and community wellbeing, democratic decision-making, moral agency, and the prevention of damage. This research includes investigations of normative restrictions on particular machine learning algorithms employed in various sectors. Connected further with the philosophical aspects, there are also various works concerning the ethics of AI. The book 'AI for Everyone? Critical Perspectives', edited by *Pieter Verdegem* in 2021, examines the novel period of technological determinism and solutionism whereby policymakers and business actors pursue data-driven transformation, presuming that AI has now become inescapable and omnipresent. This book pulls together critical interrogations of what AI is, its influence, and its disparities to providing an understanding of what it means for AI to benefit everyone. The book is divided into three sections; the first, 'Humans vs. Machines', give opposing viewpoints on the concept of human-machine dualism. The second section, 'Discourse and Myths About AI', deconstructs metaphors and laws to pose normative queries about what constitutes "good" AI and what circumstances permit it. The third section, 'AI Power and Inequalities', analyzes how the use of AI poses significant problems that require immediate attention.[16] This book offers a crucial intervention on one of the most overhyped topics of our times by bringing together academics from various disciplinary backgrounds and geographical situations. The final work in the second group is a suitable recapitulation of the philosophical and ethical issues with the rising AI technologies. 'Towards Intelligent Regulation of Artificial Intelligence' by *Miriam C. Buiten* examines the unpredictability and uncontrollability of AI. Her paper analyzes what it would mean to demand AI openness while arguing for research that goes beyond mere conceptualization. It focuses on the actual dangers and prejudices associated with machine learning systems. The article examines the biases that algorithms may develop as a result of the input data, algorithm testing, and the decision model. Any demand for algorithm openness should result in explanations of these biases that are both clear for potential users and technically viable for producers. Before debating how much openness the law should demand from algorithms, the author suggests that we assess if the explanation that programmers may provide is relevant in certain legal scenarios.[17]

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[14] HAUGELAND, JOHN (ed.): *Mind Design II: Philosophy, Psychology, and Artificial Intelligence*. MIT press, Cambridge, 1997.

[15] DUBBER, MARKUS DIRK – PASQUALE, FRANK – DAS, SINIT (eds.): *The Oxford Handbook of Ethics of AI*. Oxford University Pres. New York, 2020.

[16] VERDEGEM, PIETER (ed.): *AI for Everyone? Critical Perspectives*. University of Westminster Press. London, 2021.

[17] BUITEN, C. MIRIAM: *Towards Intelligent Regulation of Artificial Intelligence*. European Journal of Risk Regulation 10(1), 2019, pp. 41–59.

Finally, some major pieces of work touching the legal and regulatory aspects of artificial intelligence are included in this third group. Furthermore, this is the most limited section of the existing literature on AI to which this research hopes to contribute. To begin, a research unit funded by the European Parliament issued an important report titled 'Artificial intelligence: From ethics to policy' in June 2020, which illustrates the spectrum of potential issues that can be caused by the invention, development, and application of malicious algorithms.[18] The major research concern is how to go from AI ethics to specific laws and policies for regulating AI. This study develops policy recommendations based on the framing of 'AI as a social experiment' for public administrations and governmental organizations interested in deploying Artificial Intelligence and Machine Learning solutions, as well as for private enterprises developing these services for public use. The major considerations driving the emphasis of this proposed application are the need for a high level of transparency, respect for democratic norms, and legitimacy. The policy solutions mentioned here demonstrate how accountability may be achieved; morally dubious behaviors and judgments are frequently documented prior to the employment of an AI system. This tracking is the first step toward enabling ethics to be a key consideration in the application of AI for the common good. There is another considerable paper regarding the legal aspects of algorithms. In this paper titled 'Argument in Artificial Intelligence and Law' *Trevor Bench-Capon* welcomes the importance of debates concerning AI and Law by providing an overview of work, and the connection between the various standards.[19] He distinguished four areas where the argument has been applied: in modeling legal reasoning based on cases, in the presentation and explanation of results from a rule-based legal information system, in the resolution of normative conflict and problems of non-monotonicity, and as a basis for dialogue, games to support the modeling of the process of argument. His approach of argument offers prospects of real progress in the field of AI and law. Furthermore, *Jacob Turner* also explains why AI is unique, what legal and ethical problems it could cause, and how we can address them in his book 'Robot Rules: Regulating Artificial Intelligence'. He claims that AI has enormous potential, unlike any other prior technology, due to its capacity to make judgments freely and unexpectedly. He contends that this possibility raises three issues: responsibility – who is accountable if AI does harm; rights – the contested ethical and pragmatic reasons for granting AI legal personhood; and the ethics of AI decision-making.[20] According to the book, new organizations and rules on a cross-industry and worldwide level are required to solve these challenges. Incorporating clear explanations of complex topics, the book is an important work from a multi-disciplinary aspect. In 2020, Springer published the book 'Regulating Artificial Intelligence' edited by *Thomas Wischmeyer* and *Timo Rademacher*. The book has several chapters prepared by a group of renowned academics from all major

[18] SCIENTIFIC FORESIGHT UNIT (STOA) EPRS – EUROPEAN PARLIAMENTARY RESEARCH SERVICE: *Artificial Intelligence: From Ethics to Policy*. Brussels, 2020. Available at: https://www.europarl.europa.eu/RegData/etudes/STUD/2020/641507/EPRS_STU(2020)641507_EN.pdf (Accessed on: 21.09.2022)

[19] BENCH-CAPON, TREVOR: *Argument in Artificial Intelligence and Law*. Artificial Intelligence and Law 5(4), 1997, pp. 249–261.

[20] TURNER, JACOB: *Robot rules: Regulating artificial intelligence*. Springer. London, 2018.

legal disciplines in this respect. The writers discuss a range of topics related to AI regulation. The book provides a thorough examination of the legal foundation for artificial intelligence while making thorough policy recommendations for the eventual regulation of AI.[21] Lastly, there is an outstanding essay that answers what AI is and how it relates to the practice and administration of law by offering a high-level review of AI and its use in law. In the paper 'Artificial Intelligence and Law: An Overview' *Harry Surden* addresses the nature of AI and how it is being utilized by attorneys in the practice of law, persons and businesses controlled by the law, and government officials who administer the law. His main motivation for producing the paper is to present a realistic, fully explained the perspective of AI that is grounded in the technology's actual capabilities.[22] This is intended to contrast with conversations concerning AI and law that are distinctly futurist in tone.

To sum it up, artificial intelligence is still a relatively new topic in statistics and computer science. Significant scientific publications and sources have been included and studied in this literature review part, first considering AI's technical features, then philosophical concerns, and finally legal and regulatory arguments. According to the review, there are still gaps in the legal and regulatory literature. Because the regulatory industry is still in its early stages, the subjects related to AI regulation and legal procedures involving AI have the least quantity of literature. As a result, the purpose of this study is to fill a gap in the scientific literature by addressing concerns related to AI regulation and assessing how key players approach regulation in their similarities and differences.

IV. Regulating AI and Challenges that Come with Regulation Attempts

The need for some level of artificial intelligence regulation is getting clearer as AI is getting into every aspect of our life by using internet technologies. Nevertheless, a functional regulatory approach can be easier said than done because AI is a highly complicated subject for many policymakers in a world divided into numerous political borders. For many countries throughout the world, the right method to regulate artificial intelligence is still a matter of debate. Some think regulation of AI is necessary to protect society, while others think it will hamper innovation and the positive aspects of AI technologies. The best course of action might be to strike a balance between the regulatory aspects and supporting the applicable surface of AI technologies. In this way, regulations can safeguard people against dangers while supporting innovation and enabling businesses to improve their operations. It is important to keep regulations clear, understandable, and enforceable no matter which strategy is employed. The difficulty lies in recognizing whether an AI system is acting in a damaging or unethical manner due to insufficient levels of understanding of this technology. Laws and regulations pertaining to artificial intelligence are critical, but they must be carefully drafted to avoid strangling

[21] WISCHMEYER, THOMAS – RADEMACHER, TIMO (Eds.): *Regulating Artificial Intelligence*. Springer. Cham, 2020.
[22] SURDEN, HARRY: *Artificial Intelligence and Law: An Overview*. Georgia State University Law Review 2019(1305), pp. 19–22.

the processes. To make sure that the advantages of this technology are maximized while the hazards are minimized, a sound regulatory strategy will necessitate extensive consideration and dialogue among various stakeholders, academics, and the larger public. Among many questions, one crucial concern is data protection. How can we guarantee the security of personal data when it is used by AI systems? Liability is still another important topic. Should someone be held accountable if an AI system harms someone?

A variety of strategies have been proposed to govern the development and use of AI. The creation of ethical and technical standards for AI systems, restrictions on the development of certain AI applications, and the imposition of liability upon the organizations or the people that develop or apply AI systems are a few examples. There are both benefits and drawbacks to each of these strategies, while it is not yet obvious which among them would be the most practical in general. Each specific case might require a specific approach. In order to properly regulate AI, a mix of various different strategies is often required. As a result, there is no universally applicable method of controlling AI. The optimal course of action will probably differ from case to case, based on the precise risks posed by AI and the specific context in which it is being employed. It is therefore crucial to pass laws and regulations that precisely address those specific issues. For example, regulations may require private companies that collect data for AI systems to disclose information. This could include requiring companies to disclose information about their AI usage or establishing standards for the development and testing of AI systems. Another approach can be using existing laws and regulations to address the risks posed by AI. For example, data protection laws could be used to ensure that personal data is not mishandled by AI systems. Another approach is to regulate the algorithms themselves. This could involve setting standards for how algorithms are designed and keeping those applications auditable.

Any regulatory framework should be flexible and adaptable enough to keep up with the rapidly expanding IT ecosystems. There is an inherent duality of regulation as it has the potential to be used as an encouraging and discouraging mechanism.[23] Therefore, regulatory systems may result in the following benefits and drawbacks specifically in the artificial intelligence field.[24] Data regulation, for instance, may help prevent the exploitation of personal data, but it might also make it harder for AI systems to develop their self-learning and self-improvement capabilities over time. Although algorithm regulation can render AI systems more transparent, it also runs the risk of making them less dynamic and less able to adapt to new circumstances. Additionally, although rules can assist to ensure that AI is used properly, they may also limit its future potential applications and stop the development of new businesses and job prospects.

There are several main challenges that are rather difficult to resolve. One of the most difficult aspects of regulating AI is that, unlike other technologies, it is not easily understood or controlled. Even the developers do not have the full picture behind their function. Another issue is that AI technology is evolving at a breaking pace. This means that any regulations must be adaptable to new technologies as they emerge and respond quickly to technological changes. Another issue is that AI technology is frequently developed or

[23] MAJUMDAR, K. SUMIT – ALFRED, A. MARCUS: *Rules Versus Discretion: The Productivity Consequences of Flexible Regulation*. Academy of Management Journal 44(1), 2001, pp. 170–179.
[24] IBID. 171.

used by companies located in numerous locations. This makes it difficult to develop regulations that are acceptable and applicable globally. Even if regulations are created at the national level, it may be difficult to enforce them elsewhere if the company responsible for developing or using the AI technology is based in another country while the customers are based in another one. Last but not least, another main challenge is that AI systems are often incorporated into other products and services, such as self-driving cars or facial recognition software and so forth This makes it difficult to regulate AI without also affecting other areas.

1. AI regulations at the international level versus the national level

One approach to regulating AI is for states to work together internationally. This is the best approach because cyberspace and AI technologies have no borders, whereas countries and their jurisdictions do. International approaches to AI regulation can include establishing global standards for AI use as well as sharing best regulatory practices. This approach, however, is fraught with difficulties. To begin with, getting all countries on board with such an initiative can be challenging. Second, even if all nations agree to work together in the meetings, they might not be willing to adhere to the standards that are established afterward. Third, there is a risk that global standards will stifle AI innovation by making companies reluctant to develop new technologies that may not meet the standards.

Although it would be the most ideal, true international cooperation may not be as feasible to define and achieve functional regulatory objectives. Therefore, there is another strategy that can be employed at the national level. With a local regulatory approach, each nation has the authority to regulate AI under its own laws. This has the benefit of being more adaptable, as each country can tailor its regulations to its own needs and values. However, because there is no central authority overseeing the implementation of the regulations, they can be more difficult to enforce. Furthermore, this approach may result in a patchwork of different regulations around the world, making it difficult for companies that operate in multiple countries. This can certainly make it difficult for nation states to collaborate with the global IT sector, while large tech companies may face difficulties with various regulatory mechanisms in each country in which they operate.

As a result, the best approach to regulating AI is likely to be a combination of global and national regulatory frameworks. Global regulation can establish the general standards for AI development and use, while national regulators can customize these standards according to the specific requirements and values of their respective countries. This strategy would permit flexibility while still guaranteeing that there are some fundamental requirements that all nations must meet. Additionally, because there would be just one set of rules to follow, it would level the playing field for technology companies doing business in multiple nations.

Whether rules are made at the national or international levels, what matters is how Artificial Intelligence can be regulated without impeding too much technological progress. Any legislation must consider the potential risks and benefits of AI technology, as well as the need for transparency and accountability. Furthermore, any regulations should be drafted in such a way that they can be revised and adjusted as new AI

technologies and applications emerge. There are numerous approaches to regulating AI, and the best approach will most likely differ from country to country. When regulations are made at the national level, several issues may arise due to the regime of the state that drafts the regulation. Having said that, the rule of law and a state's democracy indicators are also important. An autocratic state may use artificial intelligence more for anti-democratic and surveillance purposes while still regulating it on one side. The question is still how to promote AI regulation while preventing flawed democratic states from abusing it, given that full democracies are in the minority among nations. This is one of the difficulties with the legal frameworks for issues involving information technology.

2. Innovative forces in the United States and AI regulation efforts

For many years, the United States of America has been a global leader in artificial intelligence. The country has been at the forefront of AI research and development, as well as a major player in establishing global AI regulatory standards. Due to the increased risk surface associated with information technologies, there has recently been growing concern about the potential misuse of AI technologies at the national level. The American government has passed several laws, regulations, and frameworks such as S. 1558, the Guidance for Regulation of Artificial Intelligence, and Accountability Framework for Federal Agencies and Other Entities in response to these concerns to make sure AI is used responsibly and for the good of its citizens.[25] The urgency of regulating AI, the design of the federal regulatory framework to support AI research, and the control over the use of algorithms have all been topics of discussion in the United States. In addition, there are issues like who should oversee the regulatory processes, what powers an agency should possess in terms of regulation and governance, how laws should be amended to reflect technological advancement quickly, and what each state's and the courts' roles should be.[26] In general, rules and regulations aim to ensure that AI technologies are used securely, and responsibly and that they do not endanger the security or privacy of Americans. These guidelines attempt to make sure AI is utilized for well-intended purposes while keeping its designs transparent and its deployment responsible. In this manner, the legislative approach seeks to ensure that AI technologies are inclusive and accessible to everyone. Furthermore, these regulations also seek to make sure that American companies continue to lead the way in developing and using these transformative technologies.

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[25] See: HEINRICH, MARTIN: *Text - S.1558 - 116th Congress (2019-2020): Artificial Intelligence Initiative Act*. 116th Congress. Washington DC, 2019. Available at: https://www.congress.gov/bill/116th-congress/senate-bill/1558/text (Accessed on 19 September 2022); THE WHITE HOUSE: *Memorandum for the Heads of Executive Departments and Agencies: Guidance for Regulation of Artificial Intelligence Applications*. White House. Washington DC, 2020; GAO: *Artificial Intelligence: An Accountability Framework for Federal Agencies and Other Entities (GAO-21-519SP)*. Gao. Washington DC, 2021.

[26] WEAVER, JOHN FRANK: *Regulation of artificial intelligence in the United States*. In: Barfield Woodrow – Pagallo, Ugo (eds.): Research Handbook on the Law of Artificial Intelligence. Edward Elgar Publishing. Cheltenham, 2018, pp. 155–212.

The National Security Commission on Artificial Intelligence (NSCAI) was founded on August 13, 2018. It produced a study outlining some schemes for prevailing in the age of artificial intelligence. The proposed sixteen chapters outline the actions the U.S. must take to face up to the challenges raised by AI and ensure the responsible employment of AI technologies, secure national interest, protect the security and defense of the homeland, and foster AI innovation. It offers specific strategies for the U.S. Government to put the recommendations into practice. An integrated national plan is presented in the NSCAI final report to reform the government, reorient the nation, and mobilize American allies and partners to defend and compete in the impending era of AI-accelerated conflict and rivalry.[27]

Another noteworthy legal development is the proposed law known as S. 1558, which includes sections dealing with Artificial Intelligence. The AI Program Act aims to establish a federal project to accelerate AI research and development for the benefit of the U.S. economy and national security, among other goals.[28] This regulation covers sections on national AI research centers, offices dealing with artificial intelligence practice, and workforce actions involving artificial intelligence. It also includes information on interdisciplinary AI research and education facilities, as well as programs for engineering artificial intelligence and related research and education.

The creation of the Guidance for Regulation of Artificial Intelligence by the White House's Office of Science and Technology Policy (OSTP) on January 7, 2020, is another significant step in the policy instruments pertaining to AI. This regulation was issued in response to President Donald Trump's Executive Order on Maintaining American Leadership in Artificial Intelligence. The manuscript provides ten principles that agencies should consider when deciding when and how to regulate AI. These high-level AI principles specify when regulatory mechanisms should be activated regarding the employment of AI technology within the commercial sector.[29]

Furthermore, another critical area that requires some regulatory mechanism concerns the usage of data to train AI systems. The United States Government Accountability Office (US GAO) published a report titled 'Artificial Intelligence: An Accountability Framework for Federal Agencies and Other Entities' in June 2021. This report encompasses important guidelines concerning the use of AI technologies. According to the report, all data used to train AI systems must be obtained and managed according to ethical standards, according to the US government. This means that information must be gathered in a transparent manner, with people's knowledge and consent, and it must be handled in a manner that respects their right to privacy. [30] Another key area of regulation is the use of AI for decision-making purposes. The U.S. government requires that all AI systems used for decision-making to be fair, unbiased, and accountable. This means that AI systems must be designed and tested to ensure that they do not discriminate against any group of people and that they can be audited and explained if needed.

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[27] NATIONAL SECURITY COMMISSIONATION ON ARTIFICIAL INTELLIGENCE (NSCAI): *Final Report*. 2019. Available at: https://www.nscai.gov/wp-content/uploads/2021/03/Final_Report_Executive_Summary.pdf (Accessed on 18 September 2022).

[28] HEINRICH, 2019.

[29] THE WHITE HOUSE 2020.

[30] GAO 2021.

The U.S. government is still working on developing new artificial intelligence regulations. Based on recent developments, it is apparent that they are dedicated to ensuring that artificial intelligence is utilized responsibly and for the benefit of all Americans. Furthermore, the US government's regulations are anticipated to have a substantial influence on the worldwide development of AI technology. As the world's largest market for AI technology, the United States can set the bar for how these technologies are deployed. It is conceivable that other nations will adopt a similar strategy to compete in the global market for AI technology. Additionally, the US government wants to guarantee that American businesses continue to rule the artificial intelligence industry. China is significantly investing in AI and has the potential to overtake the United States as the world leader in this field. As a result, it is critical for the United States to keep ahead of the curve by regulating these technologies in a beneficial direction.

3. AI regulatory practices in the European Union

Given the rising use of AI technology in a variety of areas and applications, ranging from self-driving cars to social media platforms, AI regulation is a topic that is becoming increasingly significant for the European Union. As a significant economic area, the rapid application of artificial intelligence necessitates the implementation of algorithm regulations to ensure that AI technologies are used safely and ethically within the European Union. As a result of these technological breakthroughs, the EU has been active in drafting regulations, frameworks, and guidelines such as the Ethics Guidelines for Trustworthy AI, the Digital Markets Act, the Digital Services Act, the Artificial Intelligence Act, and the Horizon 2020 initiative.[31] The purpose is to address certain aspects of AI that have the potential to be exploited, such as personal data protection, disinformation dissemination, and consumer protection. Several regulatory works and EU-level proposals will be assessed in the parts that follow.[32]

To ensure that AI is developed and employed in an ethical way that respects data privacy, user safety, and the fundamental rights of individuals, the EU has made some efforts since 2018. A High-Level Expert Group on Artificial Intelligence (HLEG AI) was established as one of these initiatives in June 2018. The HLEG AI was entrusted with creating ethical guidelines for the creation and application of artificial intelligence as well as making policy suggestions on how to do so. The team's work was published in the April

[31] See: HLEG AI: *Ethics Guidelines for Trustworthy AI*. European Commission, Brussels, 2018; DIRECTIVE 2000/31/EC: *Regulation of The European Parliament and the Council on a Single Market for Digital Services (Digital Services Act)*. European Commission. Brussels, 2020; STOLTON, SAMUEL: *Digital agenda: Autumn/Winter Policy Briefing*. Euroactiv.com, 18 August 2020. Available at: https://www.euractiv.com/section/digital/news/digital-agenda-autumn-winter-policy-briefing/ (Accessed on 24 September 2022); EUROPEAN COMMISSION: *EU-funded projects that use Artificial Intelligence technology*. European Commission. Brussels, 2021a; EUROPEAN COMMISION: *Proposal for A Regulation of the European Parliament and of the Council, Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) And Amending Certain Union Legislative Acts*. European Commission. Brussels, 2021b.

[32] See: STOLTON 2020.

2019 issue of 'Ethics Guidelines for Trustworthy AI'. These principles are supported by three pillars: the rule of law, respect for fundamental rights and values, and an inclusive society. These principles outline seven essential characteristics that AI systems must follow, such as respecting human autonomy and dignity, being fair and unbiased, being transparent, protecting the privacy and personal data, being accountable, and safeguarding security. The guidelines also offer a series of action suggestions aimed at both public and private entities involved in the development or deployment of AI. These proposals emphasize the need of creating an enabling environment for the development of AI applications to address the complex difficulties that mankind confronts.[33]

Due to the rapid digitalization of society and the economy, a handful of major platforms have significant control over emerging digital ecosystems nowadays. They have become the gatekeepers of the digital market, with the power to act as private rule-makers who can impose limitations on other market participants through their executive and technical capabilities. These restrictions can be detrimental to the businesses that use these platforms while also reducing the available options for customers, resulting in unfavorable market conditions. A modern legal framework that safeguards user safety online, offers governance with the protection of fundamental rights and maintains an open and fair online environment is what the European Union has devised considering these developments. Therefore, the Digital Services Act (DSA) and the Digital Markets Act (DMA) were proposed pieces of legislation by the European Commission to the European Parliament and the European Council on December 15, 2020.[34] The European Union has spent the last two years developing viable and long-term workarounds for regulating the operations of online platforms that use users and employ algorithms to improve their operations and services. These pivotal endeavors aim to govern how fundamental rights such as online privacy, data safety, and free speech are guarded in the digital. The DSA's ultimate goal is to modernize the European Union's legislative framework, specifically the e-Commerce Directive, which was passed in 2000.[35] Briefly, these frameworks encompass supplementary regulations on unlawful material, manipulative algorithmic applications, deceitful advertisement, disinformation, and misinformation. The expanding use of artificial intelligence and implementation of various AI algorithms that are fed on user data can lead to various issues. These algorithmic systems have the potential to accelerate the spread of misinformation and propaganda, among other detrimental consequences if implemented in abusive directions. These new concerns, as well as how platforms address them, have a significant impact on the practice and safeguarding of fundamental rights. Before the creation of the Digital Services Act, there were still significant gaps and regulatory impediments despite several focused, sector-specific initiatives taken at the EU level. To effectively combat illegal content on the internet, the resolutions urge transparency, informational requirements, and accountability for digital service providers. Additionally, they call for cross-jurisdictional

[33] HLEG AI 2018.
[34] DIRECTIVE 2000/31/EC 2020.
[35] STOLTON 2020.

cooperation in upholding the law, particularly when dealing with cross-border concerns, as well as public scrutiny at the national and EU levels. [36]

The Commission is also funding research on AI through the Horizon 2020 programme. Research and innovation are key components of high-value economic production, providing countries with a competitive advantage in the information era. Consequently, there is a strong emphasis on incorporating artificial intelligence technology constructively into numerous facets of daily life. As information and communication technology and digitalization become more important in the future, the EU does not want to fall behind in the race for IT leadership. As part of the Horizon 2020 programme, the Commission has launched a public-private partnership on AI, which is investing in developing European excellence in AI and ensuring that AI technologies benefit society as a whole. There have been several projects which received substantial funding from the EU as part of the Horizon 2020 programme.[37]

The Commission published its 'Proposal for a Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) And Amending Certain Union Legislative Acts Regulation on AI'' in April 2021. This proposal establishes a comprehensive legal framework for the development, deployment, and use of AI in the EU.[38] Those rules seek to guarantee that AI systems used in the EU are secure, reliable, and trustworthy while also abiding by ethical standards and fundamental rights. By clarifying standards on data governance, liability, and certification, this proposal aims to designate a fair ground for enterprises utilizing AI. A European Artificial Intelligence Board, made up of specialists from the Member States, is set to be created by the law to offer guidance on concerns regarding the technical and ethical aspects of AI technologies.[39]

As AI technologies improve, the EU's approach to regulating AI is likely to evolve as well. The EU also aspires to forge closer alliances with other regional actors including the U.S., UK, Canada, and other allied countries. Big technological corporations that are engaged in the development and use of AI are still active in their work with the EU and significantly participate in the lobbying process.

4. Chinese approach to AI regulation

The Chinese government recognizes the potential power of AI and is taking measures to guarantee that China is a crucial player in this field. They are making significant investments in AI research and development to achieve this goal, and they are also attempting to establish rules for the AI sector operating in China. As previously discussed, the Chinese government is not the only one interested in achieving AI supremacy. There is a worldwide race for AI dominance, and China is only one of the countries pushing for it. However,

[36] IBID.
[37] EUROPEAN COMMISION 2021a.
[38] EUROPEAN COMMISION 2021b.
[39] IBID 97.

owing to its investment in AI and experience in handling information technology, China has the potential to be a key player in AI in the coming years.[40] They have the knowledge, tools, and aptitude to develop effective AI algorithms and applications. For AI to be utilized for the good of their citizens, they are drafting regulations to enforce the employment of AI technologies in a responsible way.

Due to the large number of individuals who utilize the internet and social media in China, there is a large amount of data available. How this data will be used to train AI is thus one of the ethical questions. While such data is utilized to train AI systems, it can also be exploited for less desirable ends. The Chinese government acknowledged this aspect and hence is taking action to guarantee that AI is utilized for good purposes. They are making huge investments in research and development for AI applications that can assist in addressing problems such as poverty, sickness, and climate change. They are also working on creating regulations for the AI industry so that it can be used ethically and for the benefit of society.[41]

To keep the AI sector in check, China has been developing significant standards and frameworks such as the Internet Information Service Algorithmic Recommendation Management Provisions.[42] These standards are designed to make sure AI is utilized for the good of society rather than for its detriment. One of the rules, for instance, mandates that AI businesses utilize data to address challenging issues. This will make it easier to ensure that artificial intelligence is used for beneficial rather than malevolent purposes. Another way that China is employing AI responsibly is via ethically training AI algorithms. This entails making sure AI systems are not biased against particular demographics. If an AI system is trained to detect faces, for example, it should be able to distinguish faces, independent of race or gender.[43] Finally, China is employing AI to aid in regulating other aspects of society. For example, artificial intelligence is being used to monitor environmental pollutants and to aid with traffic management. China is assisting in ensuring that AI is used for the benefit of society by employing it for these reasons.

China's Cybersecurity Administration has enacted a new set of recommendation algorithm laws, which go a long way toward governing how the technology may be utilized. They released a set of standards 'Internet Information Service Algorithmic Recommendation Management Provisions' which is effective as of the 1st of March 2022. These standards are the most comprehensive set of restrictions ever devised for the deployment of algorithms in the world, demanding greater openness into how the algorithms work and giving customers greater choice over which data corporations may use to feed the algorithm. However, the restrictions go beyond addressing user rights,

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[40] LI DAITIAN – TONG, W. TONY – XIAO, YANGAO: *Is China Emerging as the Global Leader in AI?* Harvard Business Review, 18 September 2021. Available at: https://hbr.org/2021/02/is-china-emerging-as-the-global-leader-in-ai (Accessed on: 20 September 2022).

[41] HULD, ARENDSE: *China's Sweeping Recommendation Algorithm Regulations in Effect from March 1*. China Briefing, 6 January 2022. Available at: https://www.china-briefing.com/news/china-passes-sweeping-recommendation-algorithm-regulations-effect-march-1-2022/ (Accessed on: 20 September 2022).

[42] ROBERTS, HUW – JOSH, COWLS – MORLEY, JESSICA ET AL.: *The Chinese Approach to Artificial Intelligence: An Analysis of Policy, Ethics, and Regulation*. AI & Society 36(1), 2021, pp. 59–77.

[43] IBID 64.

requiring algorithm operators to adhere to an ethical code for developing a positive online environment and avoiding the spread of undesired or unlawful content.[44]

The standards include a wide range of applications and responsibilities. One of the key areas is the technical and policy requirements for recommendation algorithm operators, which mandates that algorithm mechanisms, models, data, and application outcomes be reviewed, evaluated, and verified on a regular basis. Furthermore, it calls for the filtering of unlawful and unpleasant information, as well as ecosystem management and news distribution standards. The user's ability to adjust keyword recommendations is another crucial technological consideration. The regulations also aim to ensure the safety of algorithms for senior users while simultaneously protecting labor rights. Furthermore, there are ethical criteria for recommendation algorithm providers such as positive content promotion, child protection, and elderly protection in general. Finally, the rules prevent algorithm operators from engaging in the following actions: supporting unlawful activities, fabricating or altering information or data, engaging in anti-competitive conduct, jeopardizing the health and well-being of children, and engaging in discriminating practices.

However, there is a negative component to the regulatory processes since the government is also pursuing a novel paradigm for state surveillance. There are concerns that the Chinese government themselves would employ AI unethically, such as for mass surveillance or population control via predictive analytics. The Chinese government sees AI as a means for maintaining control over its population and utilizing AI for surveillance.[45] The government is also aggressively investing in AI research and development in order to remain at the forefront of this technology.

Because of their distinct political leanings, the Chinese approach may be unique diverging from the U.S and European approaches. Nonetheless, if the potential good and negative repercussions of such regulatory procedures are considered, we might anticipate some pragmatic answers to specific challenges surrounding the tech ecosystem. With their AI technological capability and applications, the Chinese government may set an example for other countries in addressing tough issues such as disease outbreaks, climate change management, and natural source management. The world may profit from China's experience as an emergent AI power, as they take a careful approach to AI policy while exhibiting strong leadership for this purpose.

V. Discussions

There have recently been rising concerns regarding the possible abuse of AI technology due to the increased threat surface associated with information technologies. This development sparked a wave of AI legislation across several major nation-states and regions. Economic,

[44] CREEMERS, ROGIER – WEBSTER, GRAHAM – TONER, HELEN: *Translation: Internet Information Service Algorithmic Recommendation Management Provisions – Effective March 1, 2022*. Digichina, 10 January 2022. Available at: https://digichina.stanford.edu/work/translation-internet-information-service-algorithmic-recommendation-management-provisions-effective-march-1-2022/ (Accessed on: 20 September 2022).

[45] ANDERSEN, ROSS: *The Panopticon Is Already Here*. The Atlantic, September 2020 Issue, Available at: https://www.theatlantic.com/magazine/archive/2020/09/china-ai-surveillance/614197/ (Accessed on: 20 September 2022).

scientific, technological, data privacy, and security components of technology applications might be seen differently by each state, resulting in diverse levels of worry among policymakers. The existing regulatory frameworks are somewhat immature, with only a limited ability to address specific aspects of issues related to the misuse of this technology. However, the algorithms used in artificial intelligence are exceedingly complicated. The inherited complexity of the non-deterministic mathematical techniques utilized in the creation of AI applications causes the results to be non-deterministic. This implies that the outputs of AI algorithms, regardless of the inputs and design, will remain arbitrary and untraceable. As a result, the AI begins to develop a mind of its own, which is not to say that it is conscious, but rather that it can generate results that are not under human control.[46] If the inspectors want to follow the path taken by specific algorithms to arrive at results, this feature will pose a special regulatory issue.

From the analysis of regulatory frameworks coming from the U.S., the EU, and the People's Republic of China, we can observe that their regulatory attempts share many similarities. The most prevalent concerns among them were linked to data security, data manipulation, and information management. All these issues, if improperly handled, might lead to disruptive effects including mass data manipulation, stealing of sensitive data, the spread of misinformation, and fake news via AI algorithms on social media platforms. As a result, regulatory efforts frequently strive to guarantee that AI is used to serve society rather than harm it. The constraints also usually prohibit AI systems from making judgments that are biased towards specific demographics. In summary, the primary objectives of the regulatory frameworks are to make the inner workings of algorithms more transparent while providing users with broader rights concerning their personal data. By doing so, the users can be given better assurance that their data is secure and that the harmful effects of technology will be prevented.

The goal of establishing an ethical foundation for AI applications is another prevalent feature of the regulations. To foster a healthy digital platform and prevent the spread of undesirable or unauthorized algorithmic methods, models, and applications, the technology platforms are required to abide by a code of ethics. These restrictions require content monitoring and the removal of offensive and illegal material. The regulations forbid algorithm operators from promoting illegal activity, falsifying, or modifying data, participating in anti-competitive behavior, endangering the health and welfare of minors, and engaging in discriminatory acts.

There are, however, certain areas where there is divergence. On one hand, the regulations may take on the characteristics of the state that develops them. This means that the laws and regulations can be utilized for widespread surveillance and repression of political opponents if the state is less democratic and oppressive toward its population. On the other hand, the states also struggle for AI hegemony in cyberspace which is reflected in their regulatory goals. China has some particularly ferocious and ambitious objectives, and it has created legislation to support its goal of becoming the world's AI powerhouse. In reaction, the US makes efforts to strengthen its own AI capabilities and to slow the expansion of the Chinese IT sector. Trade and patent restrictions on certain IT-related goods and services are one example of the conflict between these two economic

[46] See: BONET – GEFFNER 2006.

behemoths. While these rivalries incite national protectionism, they are no longer the best options in the twenty-first century and in borderless and global cyberspace. In some ways, this leads to the internet's balkanization. If this trend continues, there is a risk of regulatory regimes that favor monopolies while limiting new start-ups' ability to develop genuinely unique features of AI technology by raising the cost of entry into the IT sector. Furthermore, another issue is content filtering and censorship. The views on what is offensive and undesirable content tend to vary depending on the country. As a result, the scope of free speech varies from culture to culture. This affects the sensitivity of rules that restrict and remove user-generated content automatically. As the boundary between censorship and the removal of offensive content gets blurry, aggressive policies that incentivize content screening and removal using the power of AI algorithms may result in violations of free expression and information sharing.

Since artificial intelligence is still a new discipline, there is a dearth of literature that takes a comparative approach to the regulatory practices governing the AI field. As a result, this study presented a comparison among the leading players in the AI area to assess commonalities and variations in their approaches. Beyond the presumed benignity of AI regulations, it has been demonstrated that there are risks that can fragment the unity of the global internet while preventing access to impartial information under the state's monopoly that mandates its conditions on IT platforms. Furthermore, the AI sector is a highly dynamic one that is always changing. The regulatory footing for the technology area will remain slippery in the absence of sufficient due diligence. As a result, a significant degree of interdisciplinary and international cooperation in cyberspace will be inevitable, if we want to get the best out of technological advancements. Due to its influence on many facets of society, artificial intelligence needs a variety of perspectives and knowledge from the fields of computer science, international relations, international law, political science, psychology, philosophy, and sociology. Therefore, there is a need for further studies in an interdisciplinary way to follow up on the developments in the IT and AI fields and their impact on the world.

VI. Conclusion

Despite the numerous potential benefits and future potentials of AI technology, creating and deploying AI algorithms poses significant risks to data security, data privacy, basic rights, and the proper functioning of society. As a result of these growing concerns, there has been a surge in AI legislation in a number of major nation-states and regions. The most prominent objectives of AI regulations are to ensure data security, prevent unauthorized selling of personal data, build an ethical framework for AI applications, and prevent algorithmic manipulations on social media. The key actors in AI research and development, such as the United States, the European Union, and China, are scrutinizing various regulatory strategies around their agendas. While they have developed certain regulatory frameworks, they are still immature that handle only particular aspects of AI. Despite several commonalities, there appear to be divergences across the drafted regulatory frameworks. Due to this fact, they also lead to fragmentation in their approach to handling AI-related vulnerabilities. Although AI can be disruptive in the absence of regulation, its progress can be hampered

by excessively strict regulations that are implemented prematurely and without proper consideration. To create the most efficient legislation, various institutions also need to work more collaboratively across multiple disciplines. Another factor to consider is that some major powers dominate the AI industry and bring their political struggle for power also within cyberspace. Nevertheless, these tendencies are quite detrimental to the optimal functioning of AI technologies. To effectively serve humanity, the tech ecosystem needs to be more inclusive and less hegemonistic. Therefore, to create more efficient solutions internationally, there has to be greater global cooperation, awareness, and complicity in the digital environment. This is part of the ethics of AI, and effort must be made to ensure that AI algorithms are designed ethically and deployed in a way that benefits all of humankind. From this aspect, this study attempted to assess the tendencies among the subject states and regions while detecting the breaking points in their regulatory practices.

TOKAT, YASIN

A MESTERSÉGES INTELLIGENCIA SZABÁLYOZÁSÁRA TETT KÍSÉRLETEK: AZ EGYESÜLT ÁLLAMOK, AZ EURÓPAI UNIÓ ÉS A KÍNAI NÉPKÖZTÁRSASÁG SZABÁLYOZÁSI GYAKORLATA

(Összefoglalás)

A század egyik legmegdöbbentőbb és előremutató vívmánya a mesterséges intelligencia, vagy röviden az MI. A mesterséges intelligencia a gépek általi intelligencia, ami szemben áll az emberek és más állatok által mutatott természetes intelligenciával. Egyre több iparág alkalmazza a mesterséges intelligenciát, és az elkövetkező években várhatóan tovább fog nőni a számuk. Az MI alkalmazások segíthetnek az embereknek a bonyolult problémák elemzésében és a hatékony megoldások meghatározásában. Emellett az MI technológiákat egyre több iparágban és vállalkozásban tervezik alkalmazni, ami új területek kialakulását és újfajta technológiák fejlesztését ösztönzi. A különböző potenciális előnyök ellenére az MI algoritmusok fejlesztése és alkalmazása néhány jelenlegi és jövőbeli kihívást is felvet. Ezért különösen fontos odafigyelni arra, hogy hogyan történik az algoritmusok fejlesztése és alkalmazása. Ha ezt gondatlanul teszik, a technológiával való helytelen bánásmódnak súlyos következményei lehetnek. Ráadásul további akadályok is felmerülnek, mivel a mesterséges intelligenciával kapcsolatos egyik legjelentősebb probléma a növekvő komplexitás, ami megnehezíti az alkalmazott algoritmusok megértését és értékelését. Ennek eredményeképpen a szabályozás kidolgozásakor meg kell vizsgálni a mesterséges intelligenciával kapcsolatos főbb etikai kérdéseket. A túlzott szabályozás továbbá gátolhatja az innovációt és akadályozhatja a jobb MI alkalmazások fejlesztését. Biztosítani kell, hogy a fejlesztés etikusan történjen, és az egész emberiség javát szolgáló módon használják, ha azt akarjuk, hogy a technológia minden előnyét kiaknázzuk. E szempontok alapján a kutatás célja, hogy összehasonlítsa és szembeállítsa az USA, az EU és Kína által elfogadott különböző szabályozási stratégiákat.