AN EVALUATION OF THE LEGAL LIABILITY OF ARTIFICIAL INTELLIGENCE AND ROBOTICS IN BALKAN STATES (SLOVENIA, SERBIA AND NORTH MACEDONIA)

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ABSTRACT

Emergence of several technologies and its relevant features have provided several organizations, state legislatives and normal human beings significant benefits in terms of enhancing their productivity and increasing their outcomes. Artificial Intelligence is one such technology that have sustained with beneficial parameters specifically for commercial firms Mikalef et al., (1). Artificial Intelligence incorporate features such as enhanced automation, smart intelligence services, accurate decision making and more. Nevertheless, the implementation of AI based features have significantly reduced the intervention of humans, Nahavandi (2), and the benefits it provides within health, environment, and economic sectors have raised several concerns. Potential misuse, unethical complexities, and biasness are some of the major hindrances which the technology faces. The states and national councils are accountable for mitigating such concerns and implement pertinent policies and regulations to extract out the positive aspects of Artificial Intelligence.

Subsequent sections of this paper demonstrate and evaluates relevant information regarding Artificial Intelligence. Furthermore, other parts of this brief paper highlight the legal regulations associated with Artificial Intelligence. particular emphasis is placed on the regulatory parameters incorporated in Balkan States (Slovenia, Serbia, and North Macedonia) for Artificial Intelligence and Robots. Moreover, the regulations in American and European Law over these technologies are also discussed in this paper. Another important aspect which this paper covers is related to the determination of the capability which the robots possesses and discussion on how they can be accepted as legal subjects. Lastly, the paper ends with a conclusion and evaluation section based upon all the fundamentals briefed overall.

Keywords: Legal Liability, Artificial Intelligence, Balkan States.

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I. ARTIFICIAL INTELLIGENCE

Artificial Intelligence has been one of the most comprehensive innovations in the field of computer science which has been adopted by the nations and its industries at a rapid pace. Artificial Intelligence influences computers, machines and other relevant devices to mimic the capabilities of problem solving and precise decision making which the human possess Iqbal (3). According to the author Geetha and Bhanu (4), AI is considered as the science and engineering for development of intelligent machines specifically intelligent programs for the computer. In simplest of forms, Artificial Intelligence conglomerates parameters of computer science and strong datasets for pertaining optimum ability of problem solving and decision making. The field also includes sub-fields of machine learning and deep learning and their exploitations are also evident often alongside artificial intelligence.

Artificial Intelligence manifests in numerous forms. Chatbots for enhancing consumer experience (Cheng and Jiang 5), intelligence assistance to extract valuable information from large datasets, and development of recommendation engines to provide clients with automated suggestions are some of the notable applications of AI. Artificial Intelligence is much more regarding the procedures and capabilities of superpowered rational and data analysis that is related to any particular format or function. Though Artificial highlights images of highly functionable human-like robots that are overall the glob, yet it is not intended to substitute humans. Moreover, it is intended to suggestively improve human capabilities and their aids. Computer Science developers utilize the features of Artificial Intelligence for performing the activities more efficiently without the intervention of manual terms. They are able to interact with consumers with the assistance of automated features, recognize the data patterns to extract valuable information, and solve complicated scenarios. Artificial Intelligence is also enhancing the performances of the enterprises alongside their productivity through the automated features or activities which previously necessitated human power.

AIs are already utilized clinically in the U.S. since, it shows optimum potential in the fields of diagnostics and imaging. However, there are certain legal challenges with AI, which the states and nations needs to regulate for effective use of the technology, and mitigating the ethical threats in possesses (Skender et. al, 2019). Robots and AI based features can be complex and there are no existing legal framework or regulations under which the robots can be held accountable for their actions. European Parliament for instance, have incorporated an insurance scheme to nullify the negative impacts if found due to the robots or any other device operated with the assistance of AI. The inception of the technology has also created a major void in terms of jobs of humans particularly due to the automated procedures. Artificial Intelligence powered chatbots are another example that have affected human behavior and interactions. Overall, implementation of AI has sustained with numerous benefits yet they persist with substantial concerns and issues which needs to be controlled and mitigated at the same time.

II. LEGAL REGULATIONS ON ARTIFICIAL INTELLIGENCE

The growth of Artificial Intelligence has been significant within several industrial sectors and is anticipated to grow even more in the upcoming days (Saračević et al., 2019). Since, these commercial organizations are looking to adopt the features of artificial intelligence, robotics, and machine learning, it is necessary to stay aware of the laws and regulations associated with these technologies. Regulations related to the activities of Artificial Intelligence is a phenomenon which governs the polices and laws integrated to the public sector who nurtures, and modulates Artificial Intelligence. A robust debate is evident if Artificial Intelligence can be held liable in the scenario of a machine learning application or robotic automation goes wrong. Regulations behind AI are a complex terrain, but countries like U.S, and other European nations have embraced with regulations considering both the ethical and physical consequences of these technologies (Karliuk 12). European Union is one of the major regulatory bodies who are associated with activities and frameworks of laws and regulations connected to Artificial Intelligence. One of the major regulations stated by the European Union is General Data Protection Regulation (GDPR) (Mondschein and Monda 13), that enables in protecting the valuable and personal information of the users enhancing the parameters of both safety and privacy of data.

A. Legal Regulations In Balkan States On Artificial Intelligence And Robots

When the aspects of Artificial Intelligence came into existence, Slovenia was one of the first countries to incorporate it (6). Due to their dedication and effective research on the field, the other Balkan countries like Serbia and North Macedonia have also invested in implementing AI based solutions. Servia have also laid their foundation for the utilization of Artificial Intelligence in its public sector (7). The legislative bodies of the country adopted relevant approaches for developing the AI based field over the period 2020-2025, and pertinent action plans to enhance those strategies was passed in June 2020. Besides development of legislative frameworks, Serbia have also started to automate the procedures of case-storage and other relevant institutional communications within the judiciary. Under the Slovenian Presidency of the Council of the EU (8), had a discussion on taking an encouraging decision regarding how to appropriately regulated the features of Artificial Intelligence and enhance the sustainable assistance for further development of the field. Certain national programme (gov.si), based on the topics of Artificial Intelligence were held in the Balkan States for supporting the future innovations related to these technologies. Out of all the Balkan States, Slovenia gained significant recognition in the global market since, their development of the first International Research Centre on Artificial Intelligence (IRCAI) (Jakhar and Kaur 9).

Though certain regulations and measures were enhanced for data protection, privacy of the user's data, and encryption of devices, yet the standard of regulations related to robotics and automation are still immature or rather null in terms of legal frameworks and laws. (Filipovski, Z, Nuredin A, Sotiroska K, Galetin M, 2018) However, several websites perform their operations with the assistance of AI based solutions and robotic paradigms. The Balkan states also persists with huge developmental ideas and potential in these fields but they are also deprived of specific frameworks or legal regulations regarding their utilization of AI and robotic automation processes. To mitigate the concerns and the relevant complexities of Artificial Intelligence, and robots the Balkan countries have also joined hands of the European Union, while the others are yet to come out with an accession. Hence, all of these countries such as Serbia, Slovenia, and North Macedonia are committed

to incorporate essential restructurings for economic establishments, and integrations. The also need to stay pliant with the digital strategies and data regulatory reforms of EU for accelerating the fundamentals of digitalization of commercial activities, regulatory bodies, in an appropriate manner with the EU's values and permissible agendas.

B. Legal Regulations In American And European Law On Artificial Intelligence And Robots

Several benefits of Artificial Intelligence (10), are undeniable but individuals are concerned regarding data security and potential cybersecurity threats which the AI based solutions and devices persists with. Inappropriate physical security, economical losses, and ethical issues are some of the few concerns which AI initiates. In response to the potential threats of Artificial Intelligence, the European Union is constantly working upon the legal contexts to control Artificial Intelligence. In context of the resolution of October 20, 2020 based on the civil liability command for artificial intelligence, the European Parliament recognized that their existing legal approach persists with an inadequate discipline concerning the liability of the Artificial Intelligence systems. As mentioned, in the previous sections the most comprehensive action or the framework which the EU demonstrated was the General Data Protection Regulation (GDPR) to securing the data and personalized information the intelligent system or device gathers to analyse and provide accurate decisions. As per the opinion of Atabekov and Yastrebov (11), EU countries also lays specific emphasis on the legal regulations of unmanned vehicles that also operates based on the features of Artificial Intelligence and Machine Learning. Hence, the German Traffic Act (Koos 14), initiated the accountability for administering an automated car on the possessor and also foresees fractional participation of the Federal Ministry of Transport and the Digital Infrastructure (Steege et al 15). Moreover, a inclusive and comprehensible strategy to the demonstration of the existing and prospective legislation related to Robotics is mentioned in the EU resolution on Robotics (Villaronga 16). The resolution clearly demonstrates about the exploitation of Artificial Intelligence, includes the complexities of liabilities, ethical parameters, and also supplies the general guidelines of conduct for the developers, operators, and the manufacturing individuals within the field of robotics. These guidelines are also based upon the three laws of robot technology by Azimov (Brauner and Gymnasium 17).

Concerns regarding the potential misutilization or unintended significances of Artificial Intelligence, nevertheless, have encouraged efforts to evaluate and establish standards, such as the US National Institute of Standards and Technology (NIST) ingenuities including workshops and discussions alongside the public and the private enterprises regarding the establishment of federal contents for preparing the building elements for consistent, vigorous, and dependable Artificial Intelligence based systems. The American Lawmakers also considered the AI's benefits and complexities for creating numerous measures in terms of evaluating the utilization of Artificial Intelligence or relevant algorithms, alongside the potential roles for policymakers. In California CA A.B. 13, regulation enacts the Automated Decision Systems Accountability Act and highlights the commitment of the legislative body which the state agencies can exploit as an acquisition approach which minimizes the threats of adverse and negative influences generally observed during the design and implementation of the AI based automated decision systems. State legislatives of Massachusetts enacted the policy named MA H.119 which is regarding the state agency automated decision-making, artificial intelligence, pellucidity, impartiality and discrete rights (Nuredin, 2022: 42).

III. LEGAL STATUS AND LEGAL LIABILITIES OF ARTIFICIAL INTELLIGENCE AND ROBOTS

The emergence of Artificial Intelligence within the commercial sectors and society have revolutionized the existing social structures and acquit various regulatory complexities and liabilities, which the legal approaches are not ready to deliver an immediate response to (12). Ethical issues and law are inseparably connected with the existing society, and several legal decisions arises from the interpretation of such ethical complexities. Artificial Intelligence have added more complicated scenario to these. Devices or systems linked with AI oriented solutions are growing in terms of being autonomous and complicated for the activities it executes (modern diplomacy). The estimation and development of resolution for such instances on the Civil Law Rules (Nuredin, 2016) on Robotics indicated the initial step towards the regulation of Artificial Intelligence within the European and the American Union alongside the Balkan States. Moreover, in relation to the defences against the liability

for the Artificial Intelligence based systems, it is necessary to mention numerous instances where a offender gets suspect of cybercrimes but defences with saying that the computer was confronted by Trojan or other relevant malware applications. Hence, these create a substantial amount of liability and legal issue specifically for the nations to handle. The questions regarding does is it feasible to hold AI systems legally liable depends on three specific aspects; limitation and restrictions of the AI systems, is the AI based systema product or a service, lastly whether the offence necessitates a mend rea or is considered as a severe liability crime.

As per the particular features of artificial intelligence, recommendations have been initiated regarding the immediate accountability of certain systems. Based on this aspect, there exists no important motives behind why autonomous systems must not be legally liable for their executed activities. The uncertainty still persists, nevertheless, regarding the demands or appeal of initiating such sorts of liability. These are also associated with the ethical concerns as discussed in the previous sections. Possibly making the developers or users of the respective autonomous systems liable for every activity the systems perform might be more significant and effective. Though this might slow down the procedures of improvement and innovation, hence looking for the appropriate balance is necessary.

IV. IMPORTANCE OF DETERMINING THE ABILITY OF ROBOTS

A. Obligations Law In Balkan States

Robots are getting positioned even more in numbers within several factories and manufacturing plants in almost every country including the Balkan States. The robots are generally exploited for execution of tasks such as personalized care, surgical paradigms, and more that are eventually raising the concerns of unemployment, wealth dissimilarity and disaffection (Selim, 2021). Moreover, some of the robots are even prepared in form of normal individuals mitigating the need of manual intervention for performing the relevant tasks. Sustaining with such parameters it is quite evident that automation of tasks and inception of robots have minimized the job roles for normal individuals. Therefore, even if the robots are granted by the organizations for performing the tasks which the humans used to do, it is necessary to determine the capabilities of those robots for executing the pertinent actions and functionalities such

that they also become eligible for getting assigned with the personal rights and make themselves as a legal subject. In terms of the Balkan states specifically, no such legal frameworks are generated but the conglomeration with the European Union laws and regulations have assisted them somehow in determining the obligations and the personal rights for the robots (De Stefano 19) in place within the factories and manufacturing plants. According to the law, the robots can only be determined as a legal subject and persist with personal rights like the other worker if they meet the following criteria:

    a) A robot needs to be built and developed considering that they do not cause any injury or harm to the human beings through any sort of action or interaction.

    b) A robot needs to stay aligned with all the orders from the functioning human excepting those who tends to conflict with the previous law.

    c) A robot must know or sustain with the abilities to protect their own existence except when if they conflict with this particular law or the previous one.

As per the regulations and frameworks related to the obligation of robots and determining their personal rights according to their capabilities, it is quite complicated and challenging. This is so due to the fact that robots cannot be precisely demonstrated by the legal structures which we the normal human beings depend upon to keeping us safe. Moreover, the state of North Macedonia embraced a latest data protection law as well which were aligned with the Artificial Intelligence based systems, automated systems, and robotics. The law was passed in February 2020. This was also done to bring into line the national data protection legislation with the General Data Protection Regulation.

B. Criminal Law In Balkan States
Use as a Tool

Several researchers and scientists are preparing for constituting and perfecting several kinds of Artificial Intelligence that will be likely to play a crucial role as tools for assisting the law implementation (Leslie 21) establishments in executing their relevant duties appropriately. The applications of robotic cameras and software associated with Artificial Intelligence can be utilized significantly and operating a remote-

controlled robot becomes much easier for detection of crimes and get accurate results which might not be achieved if manual interventions are done. The exploitation of AI based tools assists the authorities of the Balkan states in minimizing the aspects of crime and also helps in detecting the same enabling them and the local official to diminish the crime appropriately.

Liability of Negligence

Humans, and other commercial enterprises for the purposes of law are all subjected to rights and accountabilities. The individuals who design, functions, develops, or sells intelligent machines and system needs to sustain with certain legal duties specifically in the Balkan States such as Slovenia, Serbia, and North Macedonia since they are aligned with the regulations of the European Union and American legislative frameworks of Artificial Intelligence and Robotics. In context of criminal law, it sustains with two important theories, firstly the liability emerges when the negative influence has been or is probable to be instigated through any action or omissions. Physical equipment using the features of Artificial Intelligence like driverless car, for instance persists with pertinent potential to impair, kill, or damage properties. Software also sustains with the ability to cause physical harm; however, those risks might stay extended to a limited forms of damage for instance financial loss. The second law however, necessitates culpability within the offender also termed as "guilty minds" which is quite irreverent for robots since, they are only restricted to take decisions to execute activities as per the patterns or algorithms incorporated by the software. Liability of negligence is what these two concepts deeply imply with. Negligence in terms to determining the roles and accountabilities of the robots can enhance the potential rate of crimes.

CONCLUSION AND EVALUATION

The inclusion of Artificial Intelligence based features and other relevant functionalities offered by the systems have provided significant benefits to the commercial organizations. Automation, inclusion of robots within the manufacturing sectors and other industries, AI based consumer assistance services and more are adopted globally and it is anticipated that the adoption rate will increase even more. Aforementioned sections of this paper highlighted about the major uptakes of Artificial Intelligence

alongside its complexities and concerns. The main emphasis of the paper was upon the legal concerns with AI, and obligations robot specifically in terms of legal perceptions. Evaluation of the aspects related to these clearly highlighted the major frameworks and legal regulations presented by different countries to sustain with sustainability, data security and privacy of the user data.

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