ARTIFICIAL INTELLIGENCE AND FUNDAMENTAL RIGHTS IN THE EUROPEAN UNION: CHALLENGES AND PERSPECTIVES

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Abstract:
Technological advancements have transformed contemporary societies, allowing for the proliferation of Artificial Intelligence. Nevertheless, artificial intelligence has raised several concerns regarding the impact of artificial intelligence on fundamental rights. The European Union (EU) has addressed the problems arising from the adoption of Artificial Intelligence in regulation, policy, and legal challenges.
This article examines the multifaceted relationship between Artificial Intelligence (AI) and fundamental rights within the European Union (EU), highlighting the legal, ethical, and governance challenges posed by rapidly advancing AI technologies. It outlines the EU's foundational rights framework - rooted in the Charter of Fundamental Rights, international human rights instruments, and the European Convention on Human Rights - and analyses how AI systems intersect with key rights, including privacy and data protection, equality and non-discrimination, freedom of expression and information, human dignity, autonomy, and procedural safeguards. The paper reviews major regulatory instruments such as the General Data Protection Regulation (GDPR) and the proposed AI Act, emphasizing their risk-based approaches, obligations for high-risk systems, and implications for accountability and human oversight.
Keywords: *Fundamental Rights, Artificial Intelligence Act (AI Act), Data Protection / GDPR, Non-Discrimination / Fairness, Human Oversight / Accountability.*

INTRODUCTION

Artificial Intelligence refers to the computer or computer-controlled robot that performed tasks conventionally thought to have only been carried out by intelligent beings [1]. Machine learning is the science of programming computers to do almost any task without having to instruct them exactly what to do [2]. The general consensus is that artificial intelligence tends to imitate one of the important characteristics of the human mind, that is, the ability to learn.

Fundamental rights represent basic human freedoms and protections that all people are entitled to, under EU and international law. Article 2 of the Treaty on European Union (TEU) [3] vests the Union with a responsibility to enhance such rights, in accordance with the Charter of Fundamental Rights of the European Union (Charter) [4], which is legally binding and applicable to EU institutions and Member States in areas of

EU law. The Charter is an explicit proclamation, at the constitutional level, of rights set forth in the EU legal order and expresses both the breadth and the Union's political commitment to protecting such rights. The diverse legal instruments underpinning the EU's commitment to fundamental rights reflect a polity still in quest of a coherent identity, but nevertheless mark a claim to membership in the club of democratic constitutional states [1].

CONCEPTUAL FRAMEWORK: FUNDAMENTAL RIGHTS AND AI

The EU has identified five rights most directly implicated by AI and machine learning technologies, which it clusters into individual and collective categories [5]. Individual rights - privacy and data protection; equality, non-discrimination, and inclusion; dignity, autonomy, and human oversight; and freedom of expression and information - are respectively concerned with the dynamic processes of data collection, aggregation, and exploitation; the way these processes merge personal data collected across different platforms to facilitate tracking of preferences; the creation of such highly deterministic profiles; and the influence of algorithms on access to and forms of information made available to individuals. Collective rights - procedural safeguards and remedies - link macro-level governance and accountability issues with guarantees of effective remedy at the individual level.

The European Union's (EU) fundamental rights framework is rooted in international obligations, notably the United Nations Universal Declaration of Human Rights [6] and Europe's European Convention on Human Rights [7]. The EU and its member states are committed to a variety of fundamental rights as both public and private obligations. "The wording and meaning of fundamental rights vary according to the local context in each of the EU member states." [8]. Nevertheless, according to the Court of Justice of the EU, fundamental rights are not mere national principles. A preliminary list of EU fundamental rights and accompanying or related concepts that could be further developed includes the following: Dignity (Human dignity, Human autonomy, Harm, Vulnerability); Democracy (Freedom of choice, Participation in society, Living together, Input in decision-making, Equal footing); Material condition (Freedom to communicate and access information, E-mail monitoring, Capture of image, Locking audition); Security (Control over content

conveyed, Destination of a pledge, Definition of a key, Loading remaining part); Safety (Impact of system on safety of individuals, Risk of contamination and explosion, Protection by law against odour).

Similar to other technologies, AI comprises multiple sub-disciplines that collectively comprise numerous definitions. AI it is commonly understood as a class of computer-based systems that lack a fixed definition yet strive to replicate certain elements of human behaviour. In contrast, machine learning refers to a specific type of algorithm that provides output without explicit user direction. Within the space of machine learning, several further distinctions arise. For example, supervised learning employs labelled datasets to enable models to learn relationships between features and labels, while unsupervised learning utilizes unlabelled datasets. Other widely recognized areas within AI include natural language processing, computer vision, and robotics.

LEGAL LANDSCAPE IN THE EUROPEAN UNION

Artificial Intelligence (AI) falls under the domain of Fundamental Rights in the European Union (EU). Key legal instruments are the EU treaties, the Charter of Fundamental Rights of the European Union (CFREU), and the European Convention on Human Rights (ECHR). Several supervisory authorities oversee compliance at the national and EU levels: the European Data Protection Supervisor (EDPS), the European Data Protection Board (EDPB), and national Data Protection Authorities (DPAs). The General Data Protection Regulation (GDPR) [9] and the AI Act [10] both relate to Fundamental Rights, as do many discussions around AI and Algorithm Impact Assessments (AIAs) [11].

The General Data Protection Regulation (GDPR) was adopted in 2016 and was applicable in May 2018. It concerns data protection and privacy, data protection rights and access to data, covering the collection and processing of personal data. It protects individuals from infringing on the confidentiality of communications and maintains the right to not have human decisions taken by automated means. It combines freedom of expression and information with respect for private life. The AI Law, proposed in April 2021, aims to ensure that AI systems placed on the market in the EU are safe and comply with existing legal frameworks on fundamental rights, health and safety. It presents a risk-

based approach, classifying AI-based systems according to a four-level scale: unacceptable risk, high risk, limited risk and minimal risk. AI systems that fall within the high-risk category must be subjected to strict compliance obligations. These systems can expose fundamental rights, such as privacy, non-discrimination, consumer protection, and personal data protection, to significant risks [12].

Over subsequent decades, EU governance will focus on adapting legal frameworks, guidance material, and operational measures to technological change. Given anticipated regulatory priority frameworks, crucial decisions should soon follow on other foundational texts, notably the Council of Europe's high-level Guidelines on Artificial Intelligence and Data Protection and the OECD's AI Policy Observatory. The regulation takes complementary approaches to legal, ethical, and political design and implementation. The EU's non-binding Ethical Guidelines on Trustworthy Artificial Intelligence - the first globally to address the topic - will continue shaping the legal framework. Those guidelines, with policy dimensions, emphasise trustworthy AI as complying with fundamental rights and European values; accountability; non-discrimination; safety; data protection; privacy; sustainability; prevention of harmful outputs; respect for human autonomy; non-manipulation; and algorithmic transparency.

The EU agency for fundamental rights, together with the European Data Protection Board, will closely monitor the Act's formulation and enforcement, highlighting compliance risks and mitigation options. Any non-compliance by EU citizens that negatively affects the enjoyment of fundamental rights - whether through social media algorithms, AI tools for job hunting, or other systems - will remain actionable under the Charter. The EU Data Governance Act, the revised directive on digital content, and the Digital Services Act also retain relevance.

Despite influential developments, partnerships between the EU and United Nations, OSCE, and individual third countries, 5G deployments, and exchanges with civil society and the private sector, AI remains an emerging priority. Important international cooperation initiatives among non-EU states will continue to shape the landscape. Prominent frameworks include the OECD's Recommendation of the Council on Artificial Intelligence, adopted in May 2020, and the G20's Principles on Artificial Intelligence, endorsed in November 2019. The Global Partnership on Artificial Intelligence [13] was

established in June 2020; joint work on the Ethical Use of AI opened in January 2021. Further technical, sectoral, and thematic discussions will help drive consensus and enhance compliance. However, alignment with EU fundamental rights will remains a challenge.

A flexible, risk-based approach takes into account uncertainties related to technology, impact and governance. Given the rapid evolution of artificial intelligence, detailed precautionary rules would quickly become obsolete. Moreover, attention is not restricted to narrowly defined AI systems; attention extends to broader models and systems likely to influence many future services. Administrative pre-emptions, monitoring initiatives, technical evaluations, assurance frameworks, soft-law documents, model catalogues, and certifications offer alternative avenues and continue to expand in importance.

The AI Act comprises four categories of risk: acceptable, limited, high, and minimal. It stipulates that the widespread use of an AI system to manipulate human behaviour is prohibited. Providers of high-risk AI systems must undertake several specific obligations during the entire product lifecycle; the manager of the system must ensure that it is in compliance with the requirements and achieve that the proper administration of the conformity assessment is guaranteed [14].

GOVERNANCE, ACCOUNTABILITY AND RISK MANAGEMENT

A comprehensive governance regime is essential for fostering responsible and accountable AI application while managing associated risks. Responsibility must be appropriately allocated among multiple stakeholders: system providers should assume primary accountability for compliance, users must adhere to requirements, regulators should oversee legal adherence, and public authorities should ensure compliance across AI systems deployed in public services. All actors must remain knowledgeable about relevant obligations.

Transparency and explainability can enhance the trustworthiness of AI systems by helping stakeholders understand the rationale behind actions and decisions. Models should use understandable and, preferably, non-discriminatory algorithms. A disclosure obligation could encompass algorithmic purpose, potential societal impact and relevant

usage practices. Multi-stakeholder efforts are crucial to cultivating the institutional and social capacities needed for constructive engagement and governance in the field of artificial intelligence.

Impact assessments, such as data protection impact assessments (DPIAs), can measure the potential effect of a system on rights and freedoms. AI systems pose additional societal risks that may not infringe fundamental rights but still necessitate further scrutiny. Complementary algorithmic impact assessments could concentrate on social repercussions and ethical implications; regulatory authorities could oversee these assessments, while independent audits could verify implementation of risk management measures. The availability of auditing frameworks remains limited and requires further analysis.

In human-in-the-loop systems, a person intervenes at specific junctures; risk determinants vary by case and require tailored governance strategies. Systems that operate entirely autonomously amplify risks and present distinct challenges yet remain widespread. Governing these systems necessitates harmonizing technical and regulatory actions to ensure compliance with fundamental rights and EU directives.

SOCIETAL AND ECONOMIC IMPLICATIONS

The introduction of AI into labour markets has a profound societal and economic impact with fundamental rights implications. Workers across different skill levels can be affected, and their widespread use invariably leads to societal disruptions in society and the economy broadly speaking. The positioning of AI-related policy questions as a market failure indicates that answers may extend from rights- and remedy-focused approaches toward broad goals of equity and welfare among diverse social groups [8].

The potential for AI to enhance the distribution of opportunity invites public analysis of its eventuality. Unaccountable decision-making hampers advancement Silos inhibit wider ameliorative measures, such as public-service modernization that enhances the distribution of opportunity functionally throughout society as technological measures come to bear on data-rich systems and activity analysis [15]. The potential for AI to enhance the distribution of opportunity invites public analysis of its eventuality.

In terms of labour skill requirements, the introduction of AI is expected to polarize European labour markets further. Highly-skilled job openings such as information technology and manufacturing and production management and professionals will still be in demand along with information and communications technology. In contrast, job openings requiring medium-level skills such as office administration, customer service, and skilled trades will decrease where jobs requiring low skills such as food preparation, hospitality, retail sales, and security. This situation will inevitably widen skill gaps across the four skill levels. The digitization of labour is accelerated through AI across Europe from the lower level toward the upper level. Meanwhile, other Member States and regions are moving from the upper level toward the lower level, leading to a divergence of labour digitization across Member States and regions.

Growing AI adoption can affect the equitable provision of services and benefits among segments of a population within a legal, political, or budgeting framework. When such systems operate without explicitly compensating for existing group biases, outcome bias or disproportionate effects can arise. Particularly in contexts where the service in question is mandated and free of charge at the point of delivery, or when bias or discrimination must be minimized within the constitution, the position of the employing organization regarding wider distribution of such sustainable benefits may evoke public concern. Automated decision-making systems can facilitate the execution of many important tasks or support important decisions in a variety of public services and social care sectors, such as health, social care, housing and counselling. These tasks frequently entail considerable complexities, uncertainties, risks, or two-sided consequences. At the same time, there are also significant potential gains from improving service delivery speed, coverage, adoption, or accessibility of conventional offerings in various public service domains.

INTERNATIONAL PERSPECTIVES AND COOPERATION

Artificial intelligence (AI) globally operates across interconnected technology ecosystems and activities; addressing interdependence among the EU and other areas remains crucial [8]. Global AI standards and regulations promise greater interoperability, but the EU prioritizes safeguarding fundamental rights and freedoms through

comprehensive frameworks. Coordination under the Global Partnership on Artificial Intelligence and the OECD facilitates compliance with rights-holding obligations while fostering alignment with existing standards. The ongoing enactment of the AI Act presents opportunities to harmonize additional legal, ethical, and governance approaches in line with fundamental rights and related frameworks.

Adhering to the United Nations and European Convention on Human Rights, the EU's legal approach centralizes respect for human rights, democracy, and the rule of law, as delineated in the EU Charter. The European Group on Ethics similarly advocates for a rights-centric perspective, mandating equity, scrutiny, justice, and sustainable progress regarding AI development [1].

Cross-border data transfers represent a fundamental challenge for the European Union. Rapidly evolving technological and economic realities exert strong pressure on conventional legal frameworks, in particular, on mechanisms designed to protect data privacy. Data protection law is not static, but is constantly adapting to new developments. It is constantly changing, extending its protection to oral and audio-recorded data, photographs, metadata, medical data and other new categories of data. The provisions set out in the legal provisions protect important precepts. However, between the need to protect individuals' data and the desire to promote interest in artificial intelligence products lies a difficult balance, a compromise between legitimate objectives. Compliance with national standards and transparent guidance influence commercial players' willingness to invest and promote AI.

CHALLENGES AHEAD AND EMERGING TRENDS

Artificial Intelligence (AI) is driving a new wave of technological transformation across all sectors. Although the President of the European Commission, Ursula von der Leyen, described 2023 as "the year of Artificial Intelligence", it actually became evident that AI had emerged as the hottest topic of discussion inside and outside the EU institutions even before the skyrocketing popularity of ChatGPT and its competitors in late 2022. The new European initiative on AI regulation, published on 21 April 2021 and officially proposed on 21 April 2022, had already caught the public attention before that. New considerations also began to emerge regarding the implications of AI for different

areas of EU policy and objectives, including the interlinkages between AI regulation and other policies pursued by the EU, notably fundamental rights protection. Policy reports and proposals concerning the Outline of Legislative Proposal on AI Regulation were produced by senior scholars at important EU institutions (e.g. the European University Institute, the European Parliament and the European Commission), and were actively discussed and adopted within these institutions as well.

Technological progress in AI science and technology, consisting of automation and machine learning techniques, data processes, and autonomous systems, is fast-moving and seriously concern policymakers facing time delays in adoption of ethical frameworks and regulatory measures. There have been long-standing concerns about alternative methods of establishing precautionary principles concerning nuclear energy and climate control. Preparatory work on AI risk management is already urgently required to implement ethical principles and basic rules derived from the Charter of Fundamental Rights and the European Convention on Human Rights.

There are gaps in law enforcement outside of military AI systems and international law enforcement cooperation, which are criticized as gaps. Member States can introduce environmental or public health measures based on scientific evidence, even with maximum harmonisation. The law on artificial intelligence lacks tools to prevent legal uncertainty regarding national transparency requirements beyond “high-risk” systems.

The challenges of protecting the right to a fair trial, amid the rapid development of artificial intelligence technologies affecting the judiciary and enabling the automation of civil proceedings, are also relevant. The legal concerns are analysed from the perspective of Article 6 of the European Convention on Human Rights and the case law of the European Court of Human Rights. The discussion includes AI-based judicial systems and their psychological requirements for practical use. Such issues arising from artificial intelligence in legal decision-making are complex, and although the use of artificial intelligence aims to improve the judicial system, further study of the societal implications is needed.

Legal regulations governing AI should be based on co-regulation involving social, commercial and academic actors. AI governance and the promotion of rights in the field benefit from a co-regulatory system involving civil society, industry, academia and

government. The policy debate addresses the ethical and societal implications of AI and the digital transformation. The European Commission's Group on Ethics in Science and New Technologies has summarised the main ethical concerns, highlighting the diversity of values and priorities. Ethical values vary across cultures and belief systems, with fundamental concerns such as respect for human dignity, freedom, democracy and human rights. Regulation should reflect the voluntary nature of ethical compliance, taking into account the diversity of ethical values. An assessment of the ethical implications of AI depends on cultural and economic contexts.

CONCLUSION

The regulation of Artificial Intelligence (AI) in general and governance of related technologies within the European Union (EU) is still at an early phase. However, the analysis identifies a set of horizontal and transversal provisions at the EU level that address Artificial Intelligence and raises important rights and governance questions. Additional legal frameworks, such as the Swedish AI Strategy [16], the General Act on Data Protection (GDPR), and the Proposed AI Act, delineating AI, Machine Learning (ML), Automation, and Data Ecosystems may also be useful. The GDRP, Due Process Directive, Act on Equal Treatment, and others further highlight the individual concerns addressed within the analysis.

Currently the AI Regulation proposed in April 2021 is undergoing discussions within the European Parliament. The reference title ‘A European Approach for Artificial Intelligence’ establishes a successful regulatory track by pursuing a holistic approach based on the priority rights at stake. The first European AI Strategy aimed at making the EU a world-class hub for AI and ensuring that AI is human-centric and trustworthy [17].

The analysis focused on the reference regulatory scheme developed by the European Commission. Addressing Horizontal Regulations for Artificial Intelligence under a Human-Centric and Trustworthy Approach the paper discusses the Governance, Impact Assessment, and the Protective Framework on the core leash of Human, Data, and Immersive Rights configure a preliminary but structured impact assessment of the proposed horizontal regulatory scheme on content moderation or societal dissemination

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