

# Fairness in AI systems development: EU AI Act compliance and beyond

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## ABSTRACT

Rapid popularisation of artificial intelligence (AI) has accelerated initiatives for ethical AI development. In the European Union (EU), the Artificial Intelligence Act (AIA) entered into force on the 1st of August 2024, which has steered the focus in many organisations towards compliance. As the AIA is not an ethics guideline, it is reasonable to assume that measures beyond compliance are required for ethical AI systems development. To help unravel what is already covered by the AIA and what is not, this paper studies the premise that the AIA lays out for ethical AI systems development. Drawing from critical theory and using John Rawls's theory of justice, the paper shows how the AIA provides limited support for basic liberties, equality of opportunity and the least advantaged members of society, which calls for attention concerning ethical reflection in the AI system lifecycle to ensure ethical AI development. As a result, a framework is given to lay out ethical considerations AI providers should include in iterative AI development process to steer the development towards justice as fairness.

## 1. Introduction

The rapid popularisation of artificial intelligence (AI) systems has surfaced various concerns over their ethical and societal implications [1]. Issues related to, e.g., unfair discrimination [2–5], erosion of democracy [6–8] and loss of human autonomy [9–11] have put to question the sustainability of the current direction of AI development. In an effort to respond to these challenges, software businesses have attempted to ethically integrate AI into software development through techniques such as bias mitigation and fairness [3,12,13], and transparency and explainability [14].

Meanwhile, regulators are moving to impose binding requirements for AI development. In April 2021, the European Commission submitted a proposal titled the Regulation of the European Parliament and of the Council Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act, hereinafter, AIA). The aim of this proposal was to align AI development with European values and human rights. After extensive political debate and several rounds of negotiations, the AIA entered into force on the 1st of August 2024.

Consequently, developers are facing increasing pressure to operationalise regulatory requirements in their everyday practice [15–17]. While AI system providers often prioritise legal compliance as their primary normative framework due to the high cost of non-compliance, this is no guarantee of ethical AI software, because laws and regulations are products of political processes rather than exercises in ethics. Perhaps unsurprisingly, compliance has been identified by scholars as

one of the key dimensions of organisational AI governance [18–21]. The AIA regulates many use cases of AI to which ethics are relevant, such as mass surveillance [22–24] and recruitment, in order to mitigate risk of harmful discrimination [25,26]. It prohibits organisations from developing or using systems that are deemed incompatible with EU values and fundamental rights, and mandates safeguards for systems deemed high-risk. But what should software companies do in areas that fall out of the EU's regulatory mandate? What should guide developers when they are facing a choice between conflicting values in their compliance efforts, such as choosing one fairness metric over another (see, e.g., [27])? Moreover, we still lack conclusive evidence on whether the AIA is effective in reaching its primary goal, namely, protecting health, safety and fundamental rights [16,28]. Therefore, as software companies prepare for AIA compliance, they are left with a question of *how far* compliance will take them toward *ethical* AI development.

Scholars have responded to the challenge by offering best practices for effective governance of AI, ranging from strategy to everyday operations [18,19,29,30]. This has led to the emergence of two parallel research domains, one being AI governance [18,20,21] and the other AI ethics [31–34], both of which aim at developing ethical AI systems. As researchers and software companies navigate the two fields, they encounter a plethora of guidelines, principles and frameworks drawing from various theoretical backgrounds. Whereas such variety can have a positive impact on the richness of the field, it also challenges the coherence and rigour of theory development on how ethics should be considered in AI development. Currently, this is reflected in, for

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example, varying levels of rigour in ethics guidelines [34,35] and gaps in governance frameworks such as uncertainty around effectiveness of ethics principles and limited understanding of practical implementation of governance measures [18]. It thus seems that we need to revisit the theoretical foundations of ethical AI governance to better understand how ethical AI can be reached in the current operating context of software businesses that develop AI solutions. This requires considering regulatory, economic and organisational boundaries, but also social and moral questions that stem from the characteristics of pervasive AI systems.

This paper contributes to the theoretical and practical challenge of increasing understanding of what types of governance measures software businesses should choose within the European regulatory context to develop and use AI systems ethically. The focus is on organisations developing AI systems, i.e., *AI providers*, and iterative AI systems development, which is still the dominant approach in software development practice in the age of AI [36]. As the set of necessary measures is influenced by the regulatory context where AI providers operate, this study starts from the foundation offered by European AI regulation, providing relevant results for software businesses operating in the European market. This study thus seeks response to the following research question:

*What kind of premise does the EU AI Act lay out for ethical AI development?*

To define the systems that fall under the notion of AI system, I follow the definition of the EU AI Act (Article 3). Accordingly, an AI system is

"a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments."

It is essential to recognise that there are countless competing definitions for artificial intelligence that differ from the one above. However, as this paper examines AI systems development in the European market and takes the AIA as a baseline for regulatory compliance, the definition of the AIA was considered an adequate definition for the purpose of this study.

Claiming that one practice is more ethical than another requires a transparent definition of the normative assumptions that justify such claims. As the extant literature in IT ethics demonstrates [32,37,38], there are many possible theoretical frameworks for doing so. In this paper, I analyse the AIA using John Rawls's theory of justice as fairness, as it offers a unique combination of moral and political philosophical justifications for what is considered fair in a democratic context. This multidimensionality makes it a theoretically interesting and philosophically robust theoretical lens for studying the AIA in its socio-political context (see Section 2.2) and opens the discussion towards societal sustainability currently often neglected in AI ethics literature [39]. Methodologically, I have adopted a critical approach to analysing the AIA with a combination of critical discourse studies and political discourse analysis. This allows for a rigorous qualitative analysis of the AIA that is a product of a political process, all while enabling academically justified critique and recommendations on how to shape software development practices to better accommodate ethical considerations.

This study thus contributes to the research traditions of ethical systems development [40–42], AI ethics [32] and organisational AI governance [18,19] by offering justified theoretical and practical guidance for software businesses on how to develop AI systems ethically. Choosing to study AI governance through the lens of software business allows us to target moments in the AI system lifecycle where technical measures and ethical deliberation can be brought together to advance ethical AI. This includes moments such as business leaders deciding which AI tools the company develops next, and developers choosing the

design and features that influence the ethicality of AI systems. It addresses the gap noted in AI governance literature by Birkstedt et al. [18], according to which there is a persisting uncertainty around the effectiveness of AI ethics principles and regulation in securing ethical AI development. The study thus contributes particularly to the theoretical understanding of the *aims* of AI governance, i.e., answering the question of *what* the outcome of AI governance measures should be [18] in the context of software business.

In what follows, we begin by an introduction of ethical AI governance in AI systems development (Section 2). Next, the methodological approach for analysing the AIA is explained (Section 3). After this, we proceed with an empirical analysis of the AIA looked through Rawls's theory of justice (Section 4). Finally, we end with conclusions and discussion about the next steps towards ethical AI development (Sections 5 and 6).

## 2. Background: ethics in governing AI systems development

### 2.1. Ethics in AI systems development

In recent years, several frameworks have been suggested to govern AI systems development towards an ethical direction [18,29]. In parallel, the discussion around the ethics of AI has intensified, which has led to a myriad of guidelines and principles [33,35,39] as well as models for operationalising these principles in software development [43–45]. AI ethics and governance share a common goal of steering AI systems development to a more ethical direction. Yet, there seems to be a divide between the two fields, which risks slowing down the development of ethics-informed practices and their implementation into software development processes. Few attempts have been made to bridge the gap [46,47], which has led to a situation where the two branches of research are still mainly conducted separately.

This gap between ethics and governance is problematic. Despite the vast body of research addressing ethical questions in information systems and software development [40–42,48,49], AI ethics has a tendency to focus too much on principles [50,51]. This risks losing the potential of ethics to actively direct AI towards ethical outcomes [34,52,53]. When AI ethics disregards the nature of ethics as a continuous process in AI development, it risks resulting in ethics practices that are "either inappropriate, meaningless, or merely an end in themselves" because they are detached from ethical justifications that provide the reasoning for why the principles should be followed in the first place [34, p. 10].

When the overly principle-focused approach is operationalised (see, e.g., [18,29]), we risk oversimplifying ethics and distancing it from its original justifications. Principles can be a useful tool for ethical AI development [54]. However, when the narrative around operationalisation focuses solely on principles (e.g., [43]) that can be based on deficient or even defective ethical justifications [35], there is a high risk that such operationalisation does not actually operationalise ethics [34]. Moreover, an emphasised focus on technical operationalisation of principles tends to exclude ethical reasoning as a tool for navigating conflicting values and making ethically justified design decisions. In consequence, the distance between practices and their ethical justifications increases. When the processes and practices are then implemented and further iterated over time, we risk losing the ethical justifications that originally guided the process design. Bridging the gap between ethics and governance helps to mitigate this issue and ensure that the system design and governance measures remain ethically informed throughout the AI system lifecycle, as ethics becomes an integral part of governance rather than remaining an external influence.

The gap between ethics and governance in software business becomes highlighted when regulatory constraints push organisations to steer their focus towards compliance. Currently, practitioners developing AI systems for the European market are getting prepared for the obligations of the recently adopted AIA (e.g., [16,17]). Unlike ethics guidelines or governance frameworks, the AIA is legally binding, giving

an incentive for businesses to focus their efforts on compliance. While understandable, this focus risks emphasising the drift of AI development ever further from its moral justifications: Why and by whom were these requirements decided and how were they justified? Does being compliant with the AIA lead to ethical AI software? If not, then, in addition to compliance, what kinds of governance mechanisms should software businesses implement if they want to develop AI systems ethically? To answer such questions, we need to explore how ethics, governance and compliance can come together to inform AI development practice. I argue that grounding these reflections in moral philosophy helps provide the level of rigour that is needed for effective AI governance [34], as doing so taps into rigorous study of justifications for why something is (or is not) considered morally acceptable. This thus strengthens the theoretical basis of AI governance and eventually offers more robust mechanisms to govern AI systems development to an ethical direction (see, e.g., [42,48,55]).

Choosing an appropriate theoretical lens for a contemporary phenomenon is not, however, a trivial task. As AI systems are increasingly pervasive and tangled with socio-political phenomena (e.g., [56,57]), we need to rely on a theory that embraces the connection between moral and social concerns and their philosophical foundations, all while accommodating application of insights into a real-life phenomenon of AI governance. Let us now explore one such theory that has gained increasing interest among technology ethicists: John Rawls's theory of justice as fairness.

## 2.2. Justice as fairness as a perspective to ethical AI development

In the realm of moral philosophy, we are positioned in the layer of applied ethics, which applies normative ethics theories to solve ethical dilemmas in real-life situations [58]. I draw from John Rawls's theory of justice as fairness that has been shown relevant in the context of technology development [59–63], as well as organisational and business studies [64–66].

Rawls established his theory mainly in *A Theory of Justice* [67] (revised in 1999 [68]) and *Political Liberalism* [69]. He aimed to develop a theory for fair distribution of inequalities to form the “most appropriate moral basis” for democratic societies [67, p. viii], which makes it a theoretically interesting and contextually appropriate lens for studying technology regulation in European democracies.

The notable strength of Rawls's theory for AI governance relies in how it puts organisations rather than individuals into the centre of justice: for Rawls, institutions belonging to the *basic structure of society* are responsible for securing social justice. The basic structure consists of organisations that have a profound impact on people's lives, shaping the background conditions against which people and associations function in society [63,70,71] (vs [72]). As digital technologies such as AI become increasingly pervasive and ubiquitous [56], software businesses involved in developing such systems can be seen to play a part in the basic structure that is responsible for social justice [73,63].

In this context, Rawls's theory offers a fruitful normative lens. For Rawls, justice is reached if the basic structure of society follows a set of principles of justice that he argues would be agreed upon in the fairest possible setting. These principles are [69, p. 291]:

1. Each person has an equal right to a fully adequate scheme of equal basic liberties which is compatible with a similar scheme of liberties for all (*basic liberties principle*)
2. Social and economic inequalities are to satisfy two conditions.
  - a. First, they must be attached to offices and positions open to all under conditions of fair equality of opportunity (*equality of opportunity*)
  - b. and second, they must be to the greatest benefit of the least advantaged members of society (*difference principle*)

Rawls set these principles in an order of priority, which means that

no trade-offs can be made to prioritise, e.g., the difference principle over basic liberties. Rawls gives a non-exhaustive list of basic liberties that he considers should be primarily protected [69, p. 291]: freedom of thought and liberty of conscience; political liberties and freedom of association (the right to vote and to hold public office); liberty and integrity of the person (incl. freedom from psychological oppression, physical assault and dismemberment); liberties covered by the rule of law. Following Rawls's theory, all AI systems development should thus be primarily aligned with these basic liberties and then fulfil the principles of equality of opportunity and the difference principle.

Rawls's theory has been used as a basis for developing morally acceptable algorithms [13,59,60,74] (for critique, see [61]). Yet, despite showing potential for offering valuable perspectives to social justice in AI development [13,63,73], attempts in aligning broader business ecosystems with the principles of justice are still scarce. As the AI system lifecycle involves an increasing number of stakeholders from data annotators and model providers to those affected by its use [75,76], harnessing the potential of Rawls's theory in full seems worth exploring. Analysing the AIA through Rawls's lens is thus an opportunity to complement the existing body of knowledge with insight that looks both into and beyond technical components and their fairness. Doing so, we can gain a more holistic understanding of measures software businesses need if they wish to develop ethical AI systems.

It must be noted that one ethics perspective never gives a complete picture of ethical questions. It could be justified, for example, to explore the AIA using virtue ethics [77], consequentialism [78], or other deontological approaches [79]. However, as fitting all perspectives into one paper is unwise, I have decided to start from the Rawlsian analysis due to the above-discussed advantages. When businesses that develop AI systems with profound impact on people's lives adopt responsibilities of a basic structure institution, we enter an underdiscussed area of how such institution should govern AI development in alignment with social justice. The Rawlsian approach allows us to attribute moral accountability over the impacts of AI systems to AI businesses alongside, e.g., governments, providing reason for ethical software development.

Rawls's theory thus offers a coherent and rigorous approach to the study of the AIA and the extent to which it drives ethical AI development. As demonstrated by extant literature [13,59,80], it is applicable to the modern software business context, while also thorough enough to account for moral and social considerations in a theoretically justified way. Next, I discuss how it is applied in practice.

## 3. Methodology

As the research approach adopted in this study is less typical for software business research, it is worth a detailed description. The choice of methodology was informed by 1) the need to understand the complex premise of the AIA for ethical AI development, and 2) doing it in a way that enables justified critique and pragmatic recommendations for action for AI providers. Therefore, I draw from critical theory, which is a research approach that highlights the pragmatic nature of science and knowledge. Compared to positivistic or interpretive approaches, it aims at changing societies through challenging existing paradigms and suggesting alternatives [81–84]. In this paper, the critical stance builds on the principles of Myers and Klein [85], which guide information systems researchers to

1. use core concepts from critical social theorists
2. take a value position that drives the analysis,
3. reveal and challenge prevailing beliefs and social practices,
4. encourage emancipation
5. suggest improvements in society to overcome unwarranted use of power, and
6. contribute to social theory that shape critical theory development [85, p. 25].

The AIA is approached as a discourse, relying on Jürgen Habermas's critical discourse theory (e.g., [86,87]). The approach is thus based on a constructivist ontology, which posits that technology and the meanings attributed to it are constructed in social interaction between people, in their operating context [88–90].

Critical discourse approach has been shown useful in research studying, e.g., software and its societal impacts [91–94]. On an empirical level, Alvarez [95], Pozzebon and Pinsonneault [96] and Sarkkinen and Karsten [97] have demonstrated how shifting focus from technical requirements towards language and communication can add to the knowledge about how to develop well-functioning systems for human needs. As the requirements in the AIA are communicated through language, a critical discourse perspective is apt for revealing how those requirements relate to ethical ideals. Hence, it enables access to knowledge concerning the ways in which the AIA *changes* software development practices, and the extent to which this change is or is not sufficient from an ethics perspective.

Still, critical discourse approach refers to a family of methodologies rather than a pragmatic method, which is why it needs to be paired with a structured analysis method. I use political discourse analysis (PDA) introduced by Fairclough and Fairclough [98] to ensure the analysis is coherently structured, rigorous and repeatable. In PDA, discourses are understood through the structure of practical argument. Accordingly, arguments are shaped by value-driven goals and circumstances of the speaker, which leads to a claim for action [98, p. 45]. Identifying and analysing the practical argument reveals the foundations of the discourse and its constitutive elements, facilitating systematic analysis and transparent interpretation of observations. This structure is illustrated in Fig. 1.

PDA was considered the most appropriate method due to its emphasis on the political nature of discourse. Pervasive technologies that are ubiquitous, scalable and impactful [56] are not neutral but increasingly political by nature [57,99]. Therefore, analysing the discourse around such systems increases in rigour when the political nature of the discourse is adequately addressed.

The research design thus consists of three main stages: 1) defining the theoretical frame that transparently describes the scope of the discourse to be studied, as well as the theoretical lens and the structure of data analysis, 2) empirical analysis that consists of transparent description of analysis and its findings, and 3) critique and

recommendations that contribute to societal improvement and theory development. This process is illustrated in Fig. 2.

The empirical analysis (phase 2) was conducted in three rounds of analysis. The first round focused on defining the structure of practical argument in the AIA by coding the documents using the elements of the practical arguments (values, goals, references to circumstances, means-goal; see Fig. 1) as pre-determined codes (step 2.1). Each document was thus read through and any textual elements related to the elements of practical argument were tagged correspondingly. This allowed for identification of values, goals, and references to the circumstances or the means-goal in the AIA.

During the second round, the AIA was coded based on the theoretical frame (step 2.2), which in this case was Rawls's principles of justice and key concepts therein. The principles were thus used as codes and language related to those principles were annotated accordingly. This round was thus focussed on the claim for action – i.e., the requirements of the Act – and the extent to which they align AI development with the principles of justice.

The purpose of the third round was to make connections between the findings of the first two rounds of analysis, i.e., the structure of practical argument and the theoretical frame. This round thus strengthened the rigour and completed the analysis with observations that were missed during the first two rounds. In practice, the annotated documents were analysed by identifying overlapping codes, possible tensions and contradictions, which painted an overall picture of how the practical argument relates to the principles of justice. All three rounds in phase 2 were informed by principles of challenging the existing paradigm and revealing prevailing power structures and related imbalances.

Next, in phase 3, critique and recommendations were formulated for software businesses to steer AI systems development to a more ethical direction. This phase was informed by principles of societal improvement and contribution to theory development. This phase has thus a dual goal of improving practical software development from an ethics perspective, all while building theoretical knowledge about the role of compliance in organisational governance that aims towards ethical AI.

As is the case in any qualitative analysis, the interpretations made in these three rounds are, to an extent, subjective. Myers and Klein's principles alone have been accused of being biased towards Western theory [100] and for being value-laden and partisan [101]. Although the principles offer a seminal contribution to IS methodology [102], they

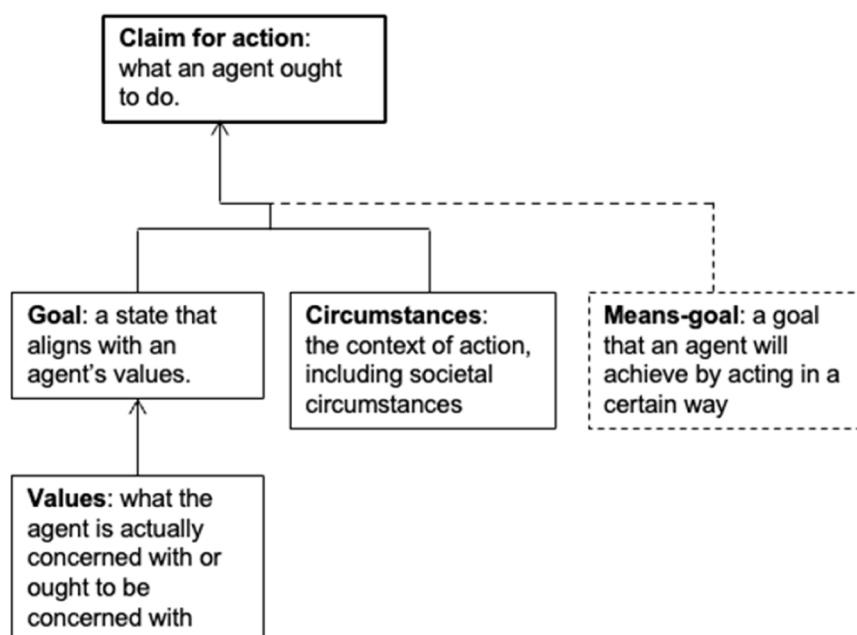


Fig. 1. The structure of practical argument, adapted from Fairclough and Fairclough [98, p. 45].

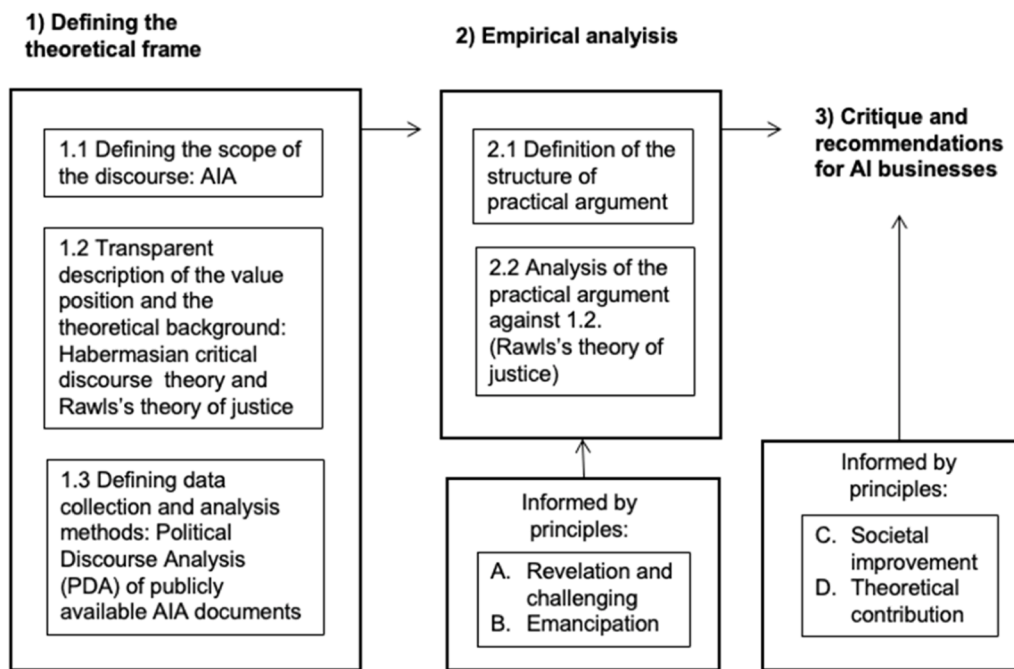


Fig. 2. The research process described.

have not been frequently used in empirical studies (exceptions including, e.g., [103,104]). As a researcher who has received their education in a European democracy, it is to be assumed that this background influences my interpretations by steering them towards a Eurocentric focus. For critical research, recognising the influence of this subjective position is essential, as the critique and recommendations are tied to the normative assumptions about how society ought to be organised.

These challenges have been mitigated to the extent possible afforded by committing to a high level of transparency and a research method that supports coherence. In addition, replicability is required to demonstrate how the researcher has arrived at their interpretations. The main mitigation is the novel use of PDA and its structure of practical argument as a tool to bring transparency, coherence and thus rigour to the analysis. Yet, the potential biases need to be kept in mind when evaluating the interpretations of the findings below (Section 5). To show how, I next discuss the results of the analysis, making visible the interpretations made based on the contents of the AIA in the normative framework provided by Rawls's theory of justice.

#### 4. Results: EU AI Act in the light of justice as fairness

The analysis comprises the final AIA legislation that entered into force in August 2024, as well as four benchmark versions of the AIA proposal: the initial proposal by the European Commission from 2021 [105], the amendments of the EU Council [106] and the EU Parliament [107], as well as the resolution adopted by the EU Parliament in March 2024 [108]. Different versions were compared to ensure that the analysis of the value basis and goals of the AIA is thorough, as it is assumed that changes between versions provide information about the priorities of regulators and their stakeholders that make it to the final regulation.

The sections below describe the research findings, starting with identification of the practical argument (Section 4.1), followed by the analysis of alignment with Rawls's theory of justice (Section 4.2). The results are synthesised and further discussed in Section 5.

##### 4.1. Practical Argument of the EU AI Act

###### 4.1.1. Values and goals

The value basis and the goals of the AIA are mainly laid out in the explanatory memorandum of the original proposal [105] and recitals. Accordingly, the AIA is rooted in EU values laid out in the Treaty on the European Union (TEU), Article 2 and the Charter for Fundamental Rights of the European Union (Charter), namely, *human dignity, freedom, democracy, equality, rule of law and human rights* [109]. In addition, three values are central for evaluating the risk level of an AI system: *health, safety and fundamental rights* of natural persons. The European Parliament added emphasis on democracy and environmental sustainability in its amendments, which was partially carried through to the final AIA. The regulation aims to support and protect the European single market, which can be seen as values driving the goal setting of the regulation. The ultimate goal for the use of AI is to *increase human wellbeing* [110, recital 6]. The purpose of the AIA is further detailed in the first article as to

“improve the functioning of the internal market and promote the uptake of human-centric and trustworthy artificial intelligence (AI), while ensuring a high level of protection of health, safety, fundamental rights enshrined in the Charter, including democracy, the rule of law and environmental protection, against the harmful effects of AI systems in the Union and supporting innovation.” [110, Article 1].

Therefore, the AIA highlights values found in human rights conventions and puts human wellbeing in the centre of proper use of AI. It shows support for protection of democracy and the environment. On the other hand, fostering the single market and innovation and preventing market fragmentation are goals towards stronger economy and accumulation of wealth. As a means-goal, the EC settled on a binding legislation. Accordingly – unlike in the case of, e.g., directives – it is directly applicable in all EU Member States when it enters into force.

###### 4.1.2. Circumstances

The claim for action is influenced by the circumstances where the AIA was drafted and negotiated. Firstly, due to the principles of conferral, subsidiarity and proportionality, the EU can only impose regulations on the Member States according to its legal mandate (conferral), if the proposed goals cannot be achieved via national

regulation (subsidiarity), and to an extent necessary considering its goals (proportionality). These principles limit the scope of the AIA and thus its ability to fully address ethical AI systems development.

Secondly, investigations by media and NGOs have revealed how the regulatory process was influenced by AI companies that relied on extensive lobbying during the process of drafting the regulation [111, 112], making the EU AI Act the third most lobbied EU regulation to date [113]. This was particularly visible in requirements concerning general-purpose AI systems (GPAIs),<sup>1</sup> which became popular during the regulatory work late in 2022 [114]. Consequently, the AIA went through several modifications to target the risks posed by GPAIs, such as applications mimicking human language and producing real-like images and video footage.

It can also be assumed that some aspects relevant for ethical AI development are regulated through other initiatives, such as the General Data Protection Regulation (GDPR) and the Digital Services Act. It is also recognised that all sectorial regulations, such as safety standards, product liability and security regulation apply to AI systems alike and thus play their part in the regulatory landscape software businesses need to consider when developing AI systems.

#### 4.1.3. Claim for action

The claim for action of the AIA consists of requirements that are defined based on the risk level of the AI system in relation with health, safety and fundamental rights of natural persons. The AIA lays out prohibitions for AI systems the risk of which is deemed unacceptable (Chapter II), specific requirements for developers and deployers of AI systems that are high-risk (Chapter III), transparency requirements for certain AI systems with moderate risk (Chapter IV), and recommendations for systems with minimal risks (Chapter X). The risks are reflected against health, safety and fundamental rights of natural persons. In addition, AIA lays out requirements for providers and deployers of GPAIs, with special attention to GPAIs with systemic risks (Chapter V). Based on the risk category, the AIA lays out requirements to both providers and deployers of the systems. The AIA also specifies some responsibilities for other actors in the value chain (e.g., importers), but due to the focus of this paper being on AI providers, they are screened out of the scope of this paper. The requirements set for different actors are summarised in Table 1.

The full structure of practical argument is illustrated in Fig. 3.

The breakdown of the AIA into practical argument thus demonstrates that the fundamental rights take a centre stage in defining what is considered acceptable use of AI systems. This goal is juxtaposed with the goal of promoting innovation and market interests. However, understanding the extent to which AIA supports social justice requires a deeper analysis of the claim for action and how it relates to Rawls's principles of justice, which I discuss next in detail.

#### 4.2. EU AI Act and justice as fairness

The analysis of AIA's requirements in light of Rawls's principles of justice is focussed on AI providers. Other requirements are discussed to the extent that they remedy potential gaps in providers' obligations

<sup>1</sup> I rely on the definition of GPAI system and GPAI model provided in the AIA. The GPAI system is defined as "an AI system which is based on a general-purpose AI model and which has the capability to serve a variety of purposes, both for direct use as well as for integration in other AI systems" (Art. 3 (66)), and the GPAI model is defined as an "AI model, including where such an AI model is trained with a large amount of data using self-supervision at scale, that displays significant generality and is capable of competently performing a wide range of distinct tasks regardless of the way the model is placed on the market and that can be integrated into a variety of downstream systems or applications, except AI models that are used for research, development or prototyping activities before they are placed on the market" (Art 3(63)

**Table 1**  
Requirements of the AIA for system providers and deployers.

Risk category	Systems concerned	Provider requirements	Deployer requirements
Unacceptable risk (Chapter II)	<ul style="list-style-type: none"> <li>• Subliminal manipulation and deception</li> <li>• Exploitation of vulnerable groups</li> <li>• Mass surveillance (social scoring; remote biometric identification in public spaces; facial recognition databases scraped without consent)</li> <li>• Predictive policing that assesses individuals' risk to commit crimes based on their personal characteristics</li> <li>• Emotion recognition at workplace and education</li> </ul>	Prohibited (Art. 5)	Prohibited (Art. 5)
High risk (Chapter III)	<ul style="list-style-type: none"> <li>• Systems covered by EU's harmonisation legislation for product safety</li> <li>• Biometrics (that are not prohibited)</li> <li>• Management of critical infrastructure</li> <li>• Education and vocational training employment, workers' management and access to self-employment</li> <li>• Access to essential private and public services</li> <li>• Law enforcement</li> <li>• Migration, asylum and border control</li> <li>• Administration of justice and democratic processes.</li> </ul>	<ul style="list-style-type: none"> <li>• Risk management system (Art. 9)</li> <li>• Data governance and management (Art. 10)</li> <li>• Technical documentation (Art. 11)</li> <li>• Record-keeping (Art. 12)</li> <li>• Transparency and provision of information to deployers (Art. 13)</li> <li>• Establishing human oversight (Art. 14)</li> <li>• Ensuring accuracy, robustness and cybersecurity (Art. 15)</li> <li>• Quality management system (Art. 16)</li> <li>• Documentation keeping (Art. 18) and Automated logs (Art. 19) when in use</li> <li>• Post-market monitoring system (Art. 72) and reporting serious incidents (Art. 73)</li> <li>• Cooperation with authorities</li> </ul>	Requirements laid out in Article 26 <ul style="list-style-type: none"> <li>• Follow user instructions</li> <li>• Ensure human oversight</li> <li>• Input data management</li> <li>• Post-market monitoring system (Art. 72)</li> <li>• Automated logs</li> <li>• Informing workers' representatives and workers when a high-risk system is deployed at workplace</li> <li>• Informing people subjected to the use of the high-risk system when used in decision-making that concerns natural persons</li> <li>• Register the system to EU database (Art. 49)</li> <li>• Cooperation with authorities</li> <li>+ Fundamental rights impact assessment for public sector organisations (or private org.s providing public services) (Art. 27)</li> </ul>
Moderate risk (Chapter IV)	<ul style="list-style-type: none"> <li>• Systems intended to interact directly with natural persons</li> <li>• Generating synthetic audio, image, video or text</li> <li>• Emotion</li> </ul>	<ul style="list-style-type: none"> <li>• Informing natural persons that they are interacting with an AI system</li> <li>• Mark synthetic material as AI-generated in a machine-readable format</li> </ul>	<ul style="list-style-type: none"> <li>• Inform natural persons exposed to biometric categorisation or emotion recognition</li> <li>• Disclose AI-generated or -manipulated</li> </ul>

(continued on next page)

Table 1 (continued)

Risk category	Systems concerned	Provider requirements	Deployer requirements
Limited risk GPAI-models (Chapter V)	<p>recognition or biometric categorisation</p> <ul style="list-style-type: none"> <li>• Systems that generate or manipulating image, audio, or video content constituting a deep fake</li> <li>• Systems that generate or manipulate text to inform the public on matters of public interest</li> </ul> <p>• All others</p> <p>'AI model, including where such an AI model is trained with a large amount of data using self-supervision at scale, that displays significant generality and is capable of competently performing a wide range of distinct tasks [...]'. (Art 3 (63))</p>	<p>N/A</p> <p>All GPAI-models (Art. 53):</p> <ul style="list-style-type: none"> <li>• Technical documentation that is up-to-date and available to system providers (Annex XII)</li> <li>• Copyright protection policy</li> <li>• Publicly available summary of training data</li> <li>• Cooperation with authorities</li> </ul> <p>Additional for GPAI-models with systemic risk (Art. 55):</p> <ul style="list-style-type: none"> <li>• Model evaluation and testing</li> <li>• Assessment of systemic risks</li> <li>• Obligation to report incidents</li> <li>• Adequate level of cybersecurity</li> </ul>	<p>image, audio and video as such</p> <ul style="list-style-type: none"> <li>• Disclose AI-generated or -manipulated text as such when it is on matter of public interest</li> </ul> <p>N/A</p> <p>N/A</p>

when analysed against Rawls's principles. The principles are discussed in the order of priority set by Rawls, starting from the basic liberties.

#### 4.2.1. Principle 1: basic liberties

Rawls's first principle calls for equal basic liberties to everyone [69, p. 291]. This part of the analysis yielded the highest number of relevant observations, which I assume to be due to the focus of the AIA on fundamental rights. Based on the values and goals, the AIA seems aligned with the first principle, as the liberties are covered in the Charter [109], which is a key document laying down the rights that the AIA aims to protect (see Fig. 3). Using health, safety and fundamental rights as a basis for AI risk categorisation also emphasises this focus. The coverage of the basic liberties by the Charter is illustrated in Table 2.

How well these goals are met by AIA compliance is dependent on the requirements set for different AI systems in the Articles of the AIA, i.e. – the claim for action – and the extent to which they protect Rawls's basic liberties. Overall, the high-risk system requirements for providers (Chapter III, Section 2) offer support for basic liberties. These providers shall establish a risk management system (Art. 9), data governance mechanisms (Art. 10) and human oversight measures (Art. 14) that all state as a motivation the protection of health, safety and fundamental rights. In addition, they need to put in place processes for, e.g., technical documentation, record-keeping, transparency, robustness, cybersecurity and quality management, all of which serve to ensure that the

functioning logic of the system is as explainable as possible, traceable and reliable. Such measures are set to mitigate risks to fundamental rights and thus support AI systems development that is in line with Rawls's basic liberties.

However, as these requirements remain on a high level, their effectiveness depends on the quality of measures that are perceived to meet the requirements of the AIA. For example, high-risk requirements for providers focus on technical mitigations and impact on individuals, whereas the protection of, e.g., political liberties would require assessing the use case and its societal impacts – something that might escape the risk assessments, which are limited to risks that “may be reasonably mitigated or eliminated through the development or design” of the system (Art. 9.3). To better understand the extent to which the AIA's requirements support basic liberties, each liberty is discussed separately below.

*Freedom of thought and liberty of conscience.* The tendency of AI systems to challenge human autonomy has been noted across sectors (e.g., [57,115,116]). The AIA prohibits AI systems that deploy subliminal techniques to manipulate or deceive someone, if it causes or is likely to cause significant harm [110, Art. 5.1(a)]. Although protection from manipulation in general supports freedom, the prohibition of Art. 5 is conditional: a system is only prohibited if the (potential) harm is *significant*. Hence, the AIA does not prohibit these systems based on their impacts on autonomy itself but based on harms resulting from impaired autonomy, treating autonomy as an instrumental value instead of an intrinsic one. Some harmful loss of autonomy as a result of manipulation is thus still deemed acceptable, as long as the harm is not significant.

The AIA sets other requirements that support freedom and human autonomy, such as prohibitions of social scoring and real-time mass surveillance, human oversight and transparency requirements for high-risk AI systems, and transparency requirements for generative AI systems (see Table 1). These requirements reduce the likelihood of people being subjected to systems that threaten human autonomy and facilitate people's ability to make informed decisions based on AI outputs. However, as Laux [16] has shown, oversight measures in the AIA remain high-level and thus risk being ineffective, which puts to question the extent to which compliance protects this basic liberty.

*Political liberties and freedom of association.* According to Rawls, all citizens should be equally able to gather political information, assess how decisions influence their lives, and participate in agenda setting and political discussion [68, p. 198]. Currently, AI systems are being used to produce content that can distort political deliberation and our ability to gather reliable political information in a mass scale [117]. As supporting measures, AIA sets transparency requirements for systems that interact with natural persons and/or generate human-like contents [110, Art. 50]. It also sets AI used in democratic processes as high-risk (Annex III), hence subject to requirements (see Table 1) that can help reveal societal risks and distortions in data sets that influence the quality of information these systems produce. These can be seen as measures to prevent distortion of political deliberation.

However, whilst the amendments of the European Parliament in 2023 brought up risks to democracy as equally important to risks to the health, safety and fundamental rights, this was toned down in the final AIA (e.g., Art. 9.2(a) [110] vs. 9.2(a) [107]). Indeed, in the Act, democracy was mentioned 19 times in total, whereas the number of mentions was 27 in the Parliament's amendments in 2023.<sup>2</sup> Moreover, the requirements set for GPAIs are particularly relevant when it comes to ensuring political liberties and freedom of association, as they can have a significant influence on the functioning of democracy when used to influence opinion formation and elections (see, e.g., [116,118]). As

<sup>2</sup> The calculation of the number of mentions was done by searching the text with word “democra” to include different derivatives of the word. The difference is significant especially considering that the 2023 document (European Parliament 2023) only contains amendments and not the full text.

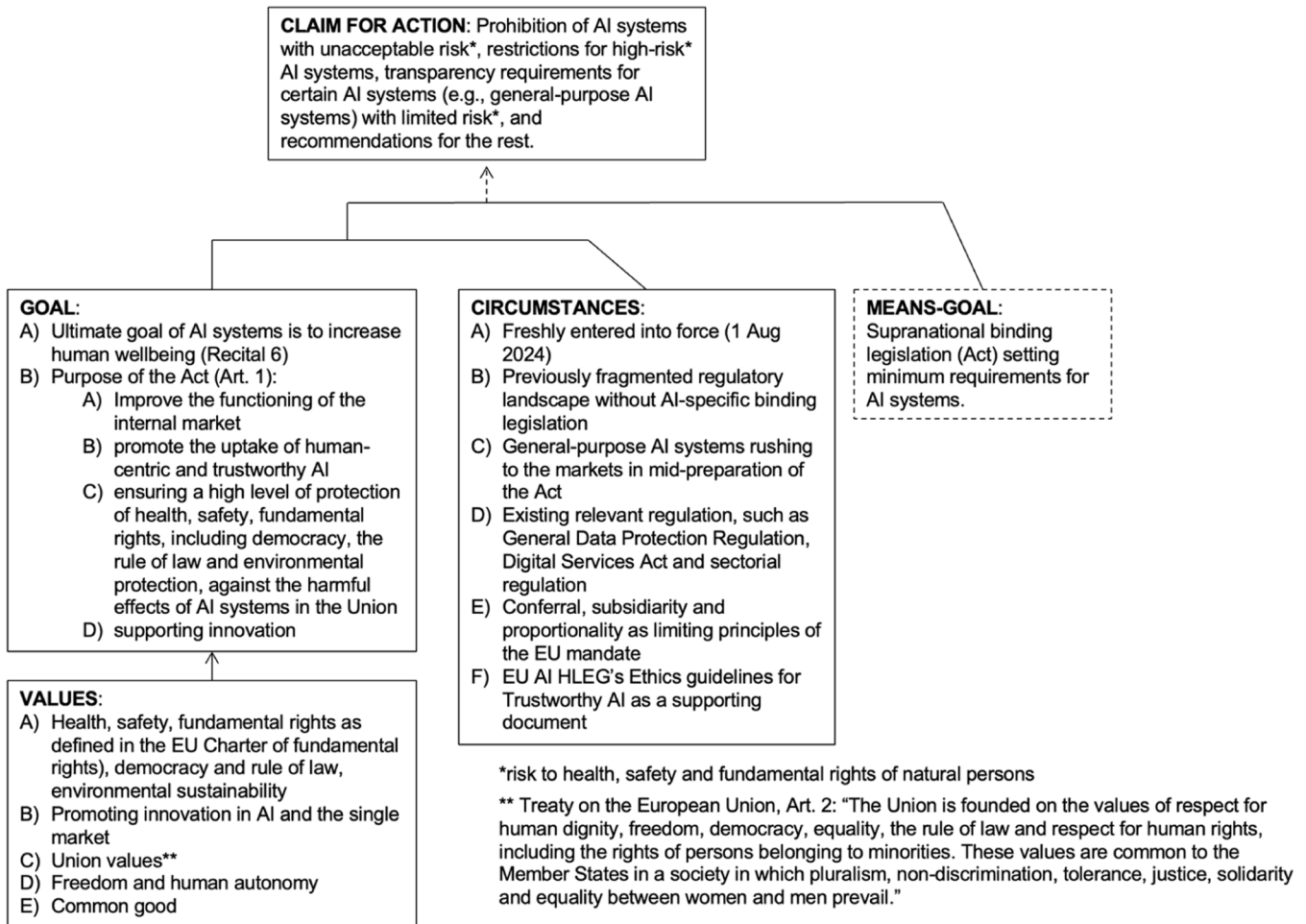


Fig. 3. Practical argument in the EU AI Act: values, goals, circumstances and the means-goal leading to the claim for action.

Table 2  
Rawls's basic liberties covered by EU charter of fundamental rights.

Basic liberty	EU Charter of Fundamental Rights
Freedom of thought and liberty of conscience	Right to liberty and security (Art. 6) Freedom of thought, conscience and religion (Art. 10) Freedom of expression and information (Art. 11)
Political liberties and freedom of association (the right to vote and to hold public office)	Freedom of assembly and of association (Art. 12) Citizen's rights (Title V, notably Art. 39, 40 and 41)
Liberty and integrity of the person (incl. freedom from psychological oppression, physical assault and dismemberment)	Human dignity (Art. 1) Right to life (Art. 2) Right to integrity of the person (Art. 3) Prohibition of torture and inhuman or degrading treatment or punishment (Art. 4) Prohibition of slavery and forced labour (Art. 5)
Rule of law	Freedom of thought, conscience and religion (Art. 10) Justice (Title VI) + Mention of rule of law as one of the foundational principles of the Union.

Rawls notes, political liberties

“lose much of their value whenever those who have greater private means are permitted to use their advantages to control the course of

public debate. For eventually these inequalities will enable those better situated to exercise a larger influence over the development of legislation. In due time they are likely to acquire preponderant weight in settling social questions, at least in regard to those matters upon which they normally agree, which is to say in regard to those things that support their favored circumstances.” [68, p. 198]

It is thus likely that the extensive lobbying of AI companies in the regulation process [111, 114], has influenced the extent to which the AIA supports political liberties and freedom of association, as it grants those with wealth a disproportionate advantage to influence decisions concerning people's lives. Considering that AI systems have shown to undermine democracy in their current forms [117], it seems that the measures supporting political liberties in the AIA remain marginal in their effectiveness. This includes tackling challenges such as spread of mis- and disinformation and political manipulation that prevent individuals from freely forming political opinions and gathering political information.

*Liberty and integrity of the person.* AIA classifies AI systems used as safety components as high-risk (Art. 6) and prohibits practices that could lead to psychological oppression, such as mass surveillance, social scoring and emotion recognition at work and education (Art. 5). However, it is worth noting that the AIA does not apply to AI used in military and defence (Art. 2). Therefore, providers of automated warfare need to adopt other measures to govern their AI systems ethically. As previous research [119, 120] and for example the latest events in Gaza [121] have demonstrated, the question of using AI in, e.g., identifying targets is ethically problematic due to inherent biases and inaccuracies in target recognition algorithms. Providers of AI systems for military purposes

thus need to address these risks through AI governance measures other than compliance, unless they opt for voluntary compliance.

**Rule of law.** For Rawls, infringements of rule of law include “subtle distortions of prejudice and bias as these effectively discriminate against certain groups in the judicial processes” [68, p. 207]. Use of AI systems has raised such concerns in, e.g., the US, where an AI system called COMPAS was deployed by courts to evaluate the risk for recidivism, leading to harmful discrimination against minorities [27, pp. 36–50], [122]. To prevent such events in the EU, the AIA prohibits AI systems used for predicting the risk of natural persons to commit crimes based on their personality traits and characteristics (Art. 5.1(d)) and classifies AI systems used in administration of justice as high-risk (Annex III). These measures support the liberties covered by the rule of law.

The AIA thus provides some support for basic liberties but also leaves gaps that providers need to consider beyond compliance to support social justice. Meanwhile, the responsibility over mitigating harms does not fall on providers only. The AIA requires deployers of high-risk systems that are public sector organisations, or private organisations providing public services, to conduct a fundamental rights impact assessment prior to deployment [110, Art. 27]. The assessment includes identification of categories of natural persons and groups likely to be affected by the system in its specific context of use, the risks of harm they are likely to experience, as well as description of human oversight and measures of remedy in case of harm. Whereas a requirement to conduct such assessment can be seen to protect the basic liberties, the AIA does not provide more specific guidance on what types of risks these deployers need to consider, and the templates to-be-provided by the AI Office (Art. 27.5) have not yet been published at the time of writing. The AIA also gives these deployers an opportunity to rely on the provider’s assessment (or GDPR’s data protection impact assessment when relevant), which begs the question of how comprehensively the impact on some basic liberties – e.g., political liberties – would be assessed in such cases. Moreover, limiting the requirement to public authorities and public services risks decreases its effectiveness, as it is expected that also the products of private sector deployers and private non-profits can impact basic liberties.

In sum, it seems that the goals and values of the AIA call for protection of basic liberties through fundamental rights, the support being weakest for political liberties. Meanwhile, the requirements for system providers do not fully enforce the goals, even when accompanied by deployer requirements. The effectiveness of the measures thus depends on how thoroughly they are implemented (e.g., risk assessment for high-risk systems in Art. 6, and assessment of systemic risks of GPAIs in Art. 55). Until the threshold of thoroughness has been established through practice, it is reasonable to assume that AIA compliance alone does not lead to AI aligned with Rawls’s basic liberties. The supporting and conflicting factors in the claim for action are summarised in Table 3.

#### 4.2.2. Principle 2a: equality of opportunity

According to Rawls, necessary inequalities “must be attached to offices and positions open to all under conditions of fair equality of opportunity” [69, p. 291]. In the context of AI, this principle extends to two dimensions. First, the *use of AI* in determining access to offices or positions of privilege and power should not lead to discriminatory results. Second, the opportunity to *access power held by AI providers* who design algorithms with significant influence in people’s lives should be equally distributed.

As for the first dimension, the use of AI systems for emotion recognition at workplace and education is prohibited in the AIA [110, Art. 5.1 (f)] due to its potential for discrimination (recital 44). Also, AI systems used in recruitment, promotions and performance evaluation at work, education and vocational training are classified as high-risk [110, Annex III, 3 and 4], which supports equality of opportunity by mitigating the risk of discrimination in these instances that are essential for people’s opportunities to seek advantageous positions. However, AI systems come with inherent biases rooted in convoluted social structures

**Table 3**

Rawls’s basic liberties and the claim for action of the AIA.

Basic liberty	Supporting factors in the AIA’s claim for action	Conflicting factors in the AIA’s practical argument
Freedom of thought and liberty of conscience	<ul style="list-style-type: none"> <li>• Art. 5.1(a): prohibition of manipulative AI systems with significant harm</li> <li>• Art. 5.1(b): prohibition of AI systems that exploit vulnerable groups to distort their behaviour</li> <li>• Art. 5.1(c): prohibition of social scoring</li> <li>• Art. 5.1(g): prohibition of emotion recognition at workplace and education</li> <li>• Art. 5.1(h): prohibition of real-time mass surveillance</li> <li>• Art. 16.2: requirement of human oversight for high-risk system deployers</li> <li>• Art. 27: fundamental right impact assessment</li> <li>• Art. 50: transparency obligations for providers and deployers of certain AI systems</li> <li>• Annex III: biometrics set as high-risk</li> <li>• Chapter III, Section 2: requirements for providers of high-risk systems, notably Art. 9, 10 and 14</li> </ul>	<ul style="list-style-type: none"> <li>• Art. 5.1(a): Prohibition only applies to manipulation that can cause significant harm, other types of (harmful) manipulation allowed</li> <li>• Art. 27: Limiting fundamental right impact assessment only to bodies governed by public law and private entities providing public services or credit/insurance + vagueness of the assessment itself</li> <li>• Chapter III Section 2: requirements for high-risk system providers remain on a high level, waiting for further instructions from the AI Office</li> <li>• Art. 9: Providers’ risk assessment only limited to risks that can be mitigated through development or design of the AI system, ruling out other types of risks</li> </ul>
Political liberties and freedom of association (the right to vote and to hold public office)	<ul style="list-style-type: none"> <li>• Art. 50: transparency requirements set to systems interacting with natural persons and producing human-like contents</li> <li>• Art. 27: fundamental right impact assessment</li> <li>• Annex III: high-risk: administration of justice and democratic processes</li> <li>• Chapter III, Section 2: requirements for providers of high-risk systems, Art. 9 and 10</li> </ul>	<ul style="list-style-type: none"> <li>• Decreased emphasis on protecting democracy in the final AIA</li> <li>• Chapter V: Weak requirements for GPAI providers and deployers despite their likely impact on political liberties</li> <li>• Art. 27: Limiting fundamental right impact assessment only to bodies governed by public law and private entities providing public services or credit/insurance + vagueness of the assessment itself</li> <li>• The role of civil society is limited to non-binding activities, such as support of drafting codes of conduct (Art. 95) and advisory forum (Art. 67).</li> <li>• Art. 9: Providers’ risk assessment only limited to risks that can be mitigated through development or design of the AI system, ruling out other types of risks</li> </ul>
Liberty and integrity of the person (incl. freedom from psychological oppression, physical	<ul style="list-style-type: none"> <li>• Art. 27: fundamental right impact assessment</li> <li>• Art. 5.1(c): prohibition of social scoring</li> </ul>	<ul style="list-style-type: none"> <li>• Art. 2: AI in military and defence is excluded from the scope of the AIA</li> </ul>

(continued on next page)

**Table 3** (continued)

Basic liberty	Supporting factors in the AIA's claim for action	Conflicting factors in the AIA's practical argument
assault and dismemberment)	<ul style="list-style-type: none"> <li>• Art. 6.1: setting safety components as high-risk</li> <li>• Art. 57: regulatory sandboxes to support safe experimentation</li> <li>• Annex III: high-risk: critical infrastructure; biometrics</li> <li>• Chapter III, Section 2: requirements for providers of high-risk systems, notably Art. 9, 10, 14 and 15</li> </ul>	<ul style="list-style-type: none"> <li>• Art. 27: Limiting fundamental right impact assessment only to bodies governed by public law and private entities providing public services or credit/insurance + vagueness of the assessment itself</li> <li>• Art. 60: Testing in real-life conditions is allowed, although only under certain conditions.</li> <li>• Art. 9: Providers' risk assessment only limited to risks that can be mitigated through development or design of the AI system, ruling out other types of risks</li> </ul>
Rule of law	<ul style="list-style-type: none"> <li>• Art. 5.1(d): prohibition of criminal risk assessment</li> <li>• Art. 27: fundamental right impact assessment</li> <li>• Annex III: the following set as high risk: law enforcement; migration, asylum and border control management; administration of justice and democratic processes</li> </ul>	<ul style="list-style-type: none"> <li>• Art. 27: Limiting fundamental right impact assessment only to bodies governed by public law and private entities providing public services or credit/insurance + vagueness of the assessment itself</li> <li>• Art. 9: Providers' risk assessment only limited to risks that can be mitigated through development or design of the AI system, ruling out other types of risks</li> </ul>

reflected in redundant encodings [123], which puts to question the effectiveness of technical and organisational measures required by the AIA to mitigate systematic biases in algorithms. It seems that proper bias mitigation would require addressing the root cause, i.e., social injustice itself to be effective [5,27], which falls out of the scope of AI provider requirements that are focused on technical mitigations (Art. 9). Therefore, even the requirements for providers of high-risk systems, such as risk assessments (Art. 9), might not be sufficient to protect equality of opportunity, which raises the question whether a prohibition of AI systems should come in question if biases cannot be appropriately mitigated (see, e.g. [73]).

As for the second dimension, the AIA supports Small and Medium-Sized Enterprises (SMEs) and startups by, e.g., granting them free access to regulatory sandboxes (Art. 58) and adjusting penalties (Art. 99), which supports equality of opportunity to enter AI business and thus seek digital power. Still, as the field of AI development is already mainly dominated by few large tech companies (see, e.g., [23]), it seems that more than minimum requirements would be necessary to level the playing field. Moreover, AI business still suffers from a gender gap [124], to which AIA has shown to offer little remedy [125]. Although it would be unreasonable to expect AI providers to take sole responsibility of changing the economy for social justice and to eradicate systemic biases, they can adopt governance measures to address the gender gap and develop systems that proactively remedy injustices [27, p. 94–101].

It is worth noting that many of the organisations deploying systems that influence equality of opportunity are private organisations and thus exempt from conducting a fundamental rights impact assessment that could bring to light some of these impacts and thus enable them to be

effectively mitigated. Hence, AI businesses both providing and deploying AI systems would need to look beyond AIA compliance to identify how their use of AI impacts equality of opportunity.

The supporting and conflicting factors are summarised in Table 4.

In conclusion, the measures required from AI providers to mitigate biases and ensure transparency in processes critical for equality of opportunity support Rawls's basic liberties. They ensure that AI developers need to build algorithms in a way that minimises algorithmic and data bias, reflect on the representativeness of datasets, and how to document design choices in a way that demonstrates compliance with these requirements. Nevertheless, as equality of opportunity is not solely a technical problem [5], AI businesses need to adopt governance measures beyond compliance to ensure their business model and ways of working support equality of opportunity.

**4.2.3. Principle 2b: difference principle**

According to the difference principle, all necessary inequalities should be to the greatest benefit of the least advantaged members of society. The AIA sets requirements that aim to protect the rights of people belonging to vulnerable groups (e.g., prohibition of exploitation of people's vulnerabilities in Art. 5), which aims to assure that their situation is not further worsened using AI. Yet, there is no indication that the AIA would encourage steering the *greatest benefits* of AI development to the least advantaged members of society. As noted by, e.g., Simons [27], there is a tendency in technology policy particularly in the US to highlight *anticlassification* – i.e., the elimination of personal traits and characteristics as influencing factors in decision-making – over *anti-subordination* – i.e., eliminating systemic power structures that lead to subordination and domination between social groups (e.g., p. 71). Whereas the AIA still recognises the occasional need of using special categories of personal data for bias mitigation (Art. 10. 5), a similar tendency can be observed in the AIA's overall requirements (see Table 1) that mainly focus on eliminating the influence of, e.g., personal characteristics in decision-making that concern natural persons. Aligning AI business with Rawls's difference principle would require AI providers to proactively improve the situation of the least advantaged by ensuring that they benefit most from the distribution of advantages.

The lack of alignment with the difference principle is also reflected in the measures of AIA to support innovation that maximise profits of the AI providers (e.g., Chapter VI). This includes, for instance, allowing for testing high-risk AI systems under development in real-life conditions under regulated circumstances (Art. 60). Following the logic of the (much debated) maximin principle used by Rawls, the risk of serious incidents arising from such testing would make the worst-case scenario far worse than it would be if testing in real-life conditions were prohibited.

Yet, as discussed above, the EU's mandate to legislate is dictated by principles of conferral, proportionality, and subsidiarity. Therefore, the

**Table 4**  
EU AI Act and equality of opportunity.

Dimension	Supporting factors	Conflicting factors
Use of AI in determining positions of influence	<ul style="list-style-type: none"> <li>• Art. 5.1(f) (prohibition of emotion recognition at work and education)</li> <li>• Annex III (classifying AI in recruitment, work and education as high-risk)</li> </ul>	<ul style="list-style-type: none"> <li>• Limited measures for bias mitigation for structural biases</li> <li>• Limiting fundamental right impact assessment only to bodies governed by public law and private entities providing public services or credit/insurance</li> </ul>
Access to digital power	<ul style="list-style-type: none"> <li>• Measures in support for SMEs and start-ups (e.g., Art. 58, 62, 99)</li> <li>• Art. 68 (Ensuring gender balance in scientific panel of independent experts)</li> </ul>	<ul style="list-style-type: none"> <li>• No requirement to bridge the gender gap</li> <li>• No incentive for systems development for proactive correction of injustices</li> </ul>

EU only proposed minimum requirements in the scope of its mandate, leaving several areas untouched. Despite some unclarity in the areas of EU's mandate [126], the EU generally has weaker mandate in areas such as social policy, taxation, employment, environment, freedom, security and justice, and protection and improvement of human health (see TFEU, Articles 3 to 6). It is thus possible that the type of social justice called for by the difference principle could be addressed in policy areas outside the EU's exclusive mandate. In addition, several media have reported how the regulators faced particularly heavy lobbying during the negotiations on the AIA from companies developing AI systems [111, 112, 127], which seems to have diverted the emphasis of benefits towards providers of AI systems, rather than people subjected to them.

Therefore, there is no indication that AI development that is compliant with the AIA would benefit the least advantaged the most. Whether this is problematic for overall social justice is, however, a topic for discussion. Whilst it might be unrealistic to expect a piece of EU regulation to demand such measures from AI developers due to its limited mandate and the possible conflicts between business interest and social justice, recognising this clash is essential for understanding the current role of AI providers in fair digitalisation. If AI providers were to secure social justice – as all basic structure institution in Rawls's view should – additional governance measures would be needed to fulfil the difference principle. Yet, as social justice is a combined effort by the basic structure, further research and broader multi-stakeholder deliberation is required to identify a well-functioning division of labour between the basic structure institutions in securing social justice the most effective way.

## 5. Discussion: towards fair AI systems development

I have thus far described the practical argument of the AIA and the extent to which it aligns with Rawls's principles of justice. The findings are summarised in Table 5.

Hence, these findings indicate that those AI providers whose decisions have a profound impact on people's lives cannot rely only on AIA compliance if they want to develop AI systems ethically. As AI providers gain increasing power that in some cases already exceeds the power of certain states [117, p. 49], it is justified to expect them to share the responsibility over securing social justice. This supports previous research findings (e.g., [63, 128]) that call for stronger accountability for AI providers over ethical AI development. Rather than seeking to elude common requirements by lobbying regulators [113, 114, 127], it might be more reasonable for AI providers to promote shared rules that advance social justice through regulation, as it would help establish common practices for all actors in the European AI market in support of fair competition.

**Table 5**  
Alignment of the AIA with Rawls's principles of justice.

Principle of justice	Alignment with the principle of justice
Basic liberties	<b>Partial alignment:</b> The goals and values of the AIA support basic liberties through references to EU Charter of fundamental rights. However, the enforcement mechanisms notably concerning private sector providers are limited and/or their effectiveness is currently uncertain.
Equality of opportunity	<b>Partial alignment:</b> The AIA classifies AI systems used in recruitment, promotion, and performance evaluation at work as high-risk, subject to technical mitigation measures ( <i>use of AI</i> ). It also offers support for SMEs and start-ups in entering the market ( <i>access to digital power</i> ). However, focus on technical mitigation and lack of proactive measures to address inequalities in accessing digital power limit its effectiveness.
Difference principle	<b>Weak alignment:</b> Only minimal protection of rights is offered to the least advantaged members of society. No requirements for proactive measures to improve the situation of the least advantaged. The main beneficiaries of AI development are indicated to be businesses and their owners.

Addressing the gaps listed in Table 5 is not a trivial task. As Rawls notes, securing social justice is a result of collaboration between basic structure institutions [69, p. 260]. It would therefore be unreasonable to suggest that AI businesses should be solely responsible for fulfilling all Rawls's principles at all times. However, as the explicit goals of the AIA seem to support social justice, it can mislead AI businesses to think that their duty towards social justice is fulfilled by ensuring compliance with the AIA. The findings of this study indicate that this is indeed not the case.

Below, I discuss considerations AI businesses should integrate in iterative software development to fill in the gaps and contribute to social justice. These considerations are formed in a way that bridges the gap between AI ethics and governance and improves the ethical soundness of governance measures, the importance of which is discussed in Section 2. It needs to be noted that these considerations respond more to the question of *what* the governance measures of AI providers should do, rather than *how* (for more elaborate discussion on the difference between the two, see [18]). Nevertheless, it is a necessary foundation on which practical governance measures can be designed in future research.

### 5.1. Recommendations: social justice in iterative AI systems development

Whereas requirements such as those arising from the AIA can be approached through requirement engineering, ethical considerations that go beyond compliance are not necessarily trivial to translate into technical requirements [129]. However, calling a system well-functioning, robust and value-adding does not seem justified if the system is unethical (e.g., [130]). As many of the decisions that affect the fairness of AI systems are made during software development (e.g., choosing and preparing training data, selecting weights and coding embeddings of algorithms), I propose making Rawlsian considerations an integral part of iterative AI systems development. Although AI has challenged traditional software engineering practices [131], AI development projects typically follow practices that rely on continuous, iterative development such as Agile (e.g., [132, 133]). Hence, on top of the requirements arising from the AIA and other sources [129], considerations of social justice should be included in all phases of the AI development process, including design, development, testing, deployment and review.

Below, based on the findings of this study, I provide recommendations to address the gaps in the AIA.

#### 5.1.1. Design

In the beginning of the AI development cycle, AI providers are faced by functional and non-functional regulatory requirements, including compliance with the AIA in the European market. Ethical considerations thus build on existing requirements rather than replaces them, which ensures alignment with the prevalent normative system (e.g., regulation and standards).<sup>3</sup>

With these requirements in mind, the provider starts to design the concept and identify system properties that bring value to users based on gathered insights [134]. In the design phase, ethical considerations thus target the purpose of use and the initial architectural choices that serve as foundations for iterative development of the system features.

Besides ensuring AIA compliance, designers should map the impacts of the use case on basic liberties, paying particular attention to those that are weakly covered in the AIA (e.g., democratic liberties; see Table 3). The provider should also evaluate whether the system influences people's opportunities to seek positions of influence (equality

<sup>3</sup> Although there is arguably room for public deliberation over whether the existing laws and regulations are ethical, it would not be reasonable to require such deliberation to be part of the everyday software development practice and AI governance. It thus remains a topic for another forum.

of opportunity). For instance, an organisation planning to develop an AI tool for recruitment should evaluate whether the use case can guarantee everyone equal opportunities to get employed, considering that systematic biases can never be fully mitigated [2,26]. The provider also needs to reflect on who the concept benefits most – the least advantaged members of society, or someone else (difference principle). The provider should also extend the mandatory risk assessments from technical risks to a more holistic understanding of the impacts of the AI product on social justice, using Rawls’s principles as guidance. Therefore, concepts that are in inherent conflict with social justice should never make it past the design phase.

### 5.1.2. Development

During the development phase, ethical considerations build on technical requirements of the AIA for high-risk AI system providers (see Table 1). However, regardless of whether the system is classified as high-risk in the AIA or not, when choosing an algorithm or a foundation model and tweaking it for the intended purpose, providers need to consider whether the features come with implications to social justice. For instance, when using large language models (LLMs) developed by a third party as AI system components, the embeddings of the model need to be evaluated and adjusted based on whether they can lead to infringements of basic liberties (e.g., harmfully discriminate against some group(s) of people). If adjusting is not possible, the provider needs to seek for an alternative model. When developing algorithms or fine-tuning existing models, attention needs to be paid to the training data and techniques of preparation, including bias mitigation techniques, the choice of which determines the conception of fairness the system reflects [27].

In addition to technical mitigations, the provider also needs to ensure that the developers are trained in ethical reflection and are offered sufficient support in navigating the choices with ethical relevance. This complements AIA’s requirement for AI literacy (Art. 4) and can include tools, frameworks (e.g., [45]) and skills to develop systems that have a proactively corrective impact on the position of the least advantaged members of society, or, as Simons calls them, *positive equality duties* [27, p. 94].

### 5.1.3. Testing

In addition to requirements set for testing in regulatory sandboxes (Art. 57) and real-life conditions (Art. 60), providers should identify unexpected use cases and their implications to social justice. To mitigate the gaps in AIA, success metrics should cover all basic liberties and equality of opportunity when testing for quality, functionality and user experience. Testing also provides an opportunity for providers to fulfil their responsibility in advancing social justice and iterate on the product based on its impacts on different social groups so that the product can best improve the situation of the least advantaged members of society.

In addition, the threshold for testing in real-life conditions could be set higher for use cases that are particularly risky from the perspective of social justice. For instance, when a system that plays a role in decisions that change people’s lives, such as social security and benefits or health care, providers need to evaluate whether piloting in real-life conditions can cause irreversible harms (for a cautionary example of irreversible effects of faulty AI system that affected particularly people in vulnerable groups, see reporting on the Dutch childcare benefit crisis [135]). As the support of the AIA is limited for the principles of justice, it is to be assumed that in some cases, real-life testing allowed by the AIA should not be conducted in the light of social justice.

### 5.1.4. Deployment and review

Finally, when approaching deployment, considerations of informing the users and people affected by the system about its functioning is necessary to ensure they can enjoy their basic liberties, such as freedom of conscience and the rule of law. Although the AIA sets transparency requirements for certain AI systems (notably in Chapter IV),

transparency consideration should extend to all systems that can influence freedom and human autonomy. Therefore, providers should set the ability of deployers and users to enjoy their basic liberties and equality of opportunity as a baseline for planning for production. It also needs to be ensured that adequate monitoring measures are in place so that the fulfilment of the principles of justice can be measured also when the system is in use. This includes monitoring for the changes in the system or the context where it is deployed that can influence the combined impact of the available system.

The considerations are brought together in Fig. 4.

When these considerations are integrated into AI system development practices, AI ethics informs practical decisions without unduly increasing the distance between an action and its moral justifications, which has been called for by both AI ethics and AI governance literature [18,34,52]. This helps to bridge the gap between ethics and governance, alleviating the concerns according to which ethical principles alone cannot guarantee ethical AI [43,50].

The above-given recommendations should be considered as preliminary advice, as they are insights derived from reflection of the findings discussed in Section 4. Hence, proper design of measures would require its own (empirical) study. Whereas some considerations illustrated in Fig. 4 are directly related to software development tasks (e.g., choosing AI models), some of them are broader considerations that go beyond technical problem-solving and require organisational support. Laying out task lists and allocating them to different roles in the developer team would help to facilitate the adoption of the considerations into software development practice. Considering that the goal of this paper has been to understand the extent to which the AIA secures social justice, designing the governance measures remains a challenge for future research.

## 5.2. Discussion on contribution and limitations

This study is a contribution to ethical AI development. It demonstrates how principles can guide AI development in practical settings by encouraging AI providers to ask ethically relevant guiding questions. This helps to connect governance and ethics (see 2.1) and avoids developing inappropriate or essentially meaningless processes and practices that Bleher and Braun [34, p. 10] warn against, thus supporting software businesses in developing ethical AI systems. Doing so, the study contributes to the theoretical rigour of AI governance and AI ethics, all while offering a practice-oriented approach that is applicable in the European regulatory context that currently shapes AI governance efforts in many software businesses operating in the European market. As the findings of the study indicate, the AIA leaves behind gaps that make it alone an insufficient normative framework, if we want AI systems to advance social justice. This study gives theoretically justified and relevant guidance on how to start filling in those gaps.

Nevertheless, listing considerations does not yet constitute a governance model – designing one has not been the goal of this study. Rather, this study brings clarity into the types of considerations that should be included in ethical AI development in a market shaped by the AIA, i.e., the *what* of AI governance [18]. It adds to the existing governance literature in one essential aspect: it distributes ethical consideration throughout the lifecycle of the AI system, which has shown to be a viable approach in software development contexts [45], linking ethical reflection with the system layer of organisational AI governance [19]. It suggests embedding ethics into the mundane processes and practices of AI development in conversation with established normative frameworks, such as regulation. Whereas regulation can be seen as a top-down normative guidance, ethics is a bottom-up consideration that originates from the organization itself rather than an external source of authority. It plays into harnessing the demonstrated potential of ethics in improving innovation [130] when it is seen as an active process of reflection rather than only a static set of principles [34,52,53].

This study leaves several questions open for further research. First, to

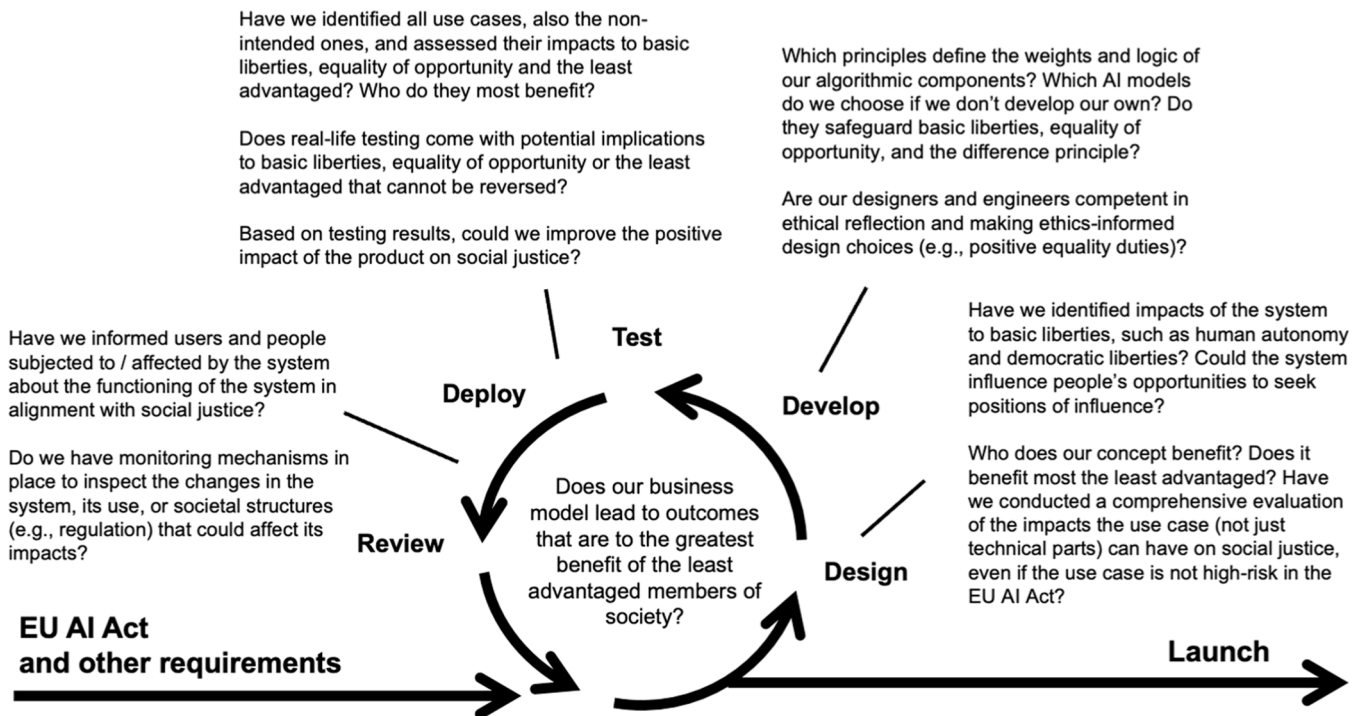


Fig. 4. Rawlsian considerations in iterative AI systems development process.

truly integrate the ethical considerations introduced in Section 5.1 into their everyday operations, AI providers need to establish robust governance processes. Providers need to evaluate their overall business model and whether that contributes to advancing social justice. These considerations steer the strategic choices of software businesses and what eventually play into the requirements for specific AI projects, as well as skills and competences of AI developers.

In addition, as noted by Coeckelbergh [57, p. 91], we need societal structures that support developers and AI businesses in performing ethically. It would thus be unreasonable to expect that the present framework alone would lead to ethical AI development. It should rather be seen as one element in holistic AI governance that brings together businesses, regulators, civil society and other stakeholders to deliberate over the common good and how to reach it in the context of AI development [7,136]. Although Rawls's theory provides a step towards such direction, further research is needed to complete the picture.

Moreover, Rawls's theory only offers one (also criticised [61, 137–139]) perspective to ethical AI development. Hence, further analyses from perspectives of other ethics theories could add to the understanding of how we can steer AI development to a more ethical direction. It is also possible that another researcher could have made differing interpretations of the AIA, which is a factor that needs to be taken into consideration when evaluating the validity of this study. Focusing on the AIA also delimits other technology related regulatory initiatives outside of the scope of this paper, including those in other regions, such as Northern America and China, which also play a role in global AI software business. Therefore, I hope that this study encourages others, too, to contribute to the work on understanding the normative landscape in AI business and designing actions towards ethical AI development.

## 6. Conclusions

Research has revealed a gap between AI ethics and AI governance (see Section 2.1), as well as a lack of theoretical depth in ethical frameworks that serve as a foundation for AI governance. This has challenged the effectiveness of existing governance measures in

reaching ethical AI. As the AIA entered into force, AI businesses operating in the EU market increasingly steer their governance efforts towards AIA compliance (e.g., [16,17]), which risks further widening the distance between governance measures derived from the AIA and their ethical justifications.

The goal of this paper has been to increase the understanding of ethical AI governance in this context by finding out how far compliance with the EU AI Act takes AI providers in developing ethical AI. I thus sought response to the following research question: *What kind of premise does the EU AI Act (AIA) lay out for ethical AI development?*

The study consists of an analysis of the practical argument of the AIA, reflecting how well it aligns with John Rawls's principles of justice, which are: the basic liberties, equality of opportunity and the difference principle (see Section 2.2). It focuses on requirements for AI providers and looks at how well those requirements help providers to fulfil their duty to secure social justice. Based on the findings of the analysis, recommendations are given for additional considerations AI providers should adopt into their iterative software development cycle on top of compliance to work towards ethical AI development.

The findings indicate that the AIA is only partially aligned with basic liberties and equality of opportunity, and weakly aligned with the difference principle (see Table 5). This calls for AI providers to integrate additional governance measures into iterative AI development to advance social justice. The framework proposed in Fig. 4 illustrates how Rawlsian considerations span over all phases of the iterative AI development cycle – design, development, testing, deployment and review – and are well suitable for setting the direction for additional AI governance measures that complement compliance with the AIA. In the development phase, the use case needs to be reflected against the principles of justice, with consideration of who the final product benefits. During iterative development, technical choices such as picking the most adequate model and data, as well as techniques used to prepare the data and mitigate biases require attention. AI developers need to be trained in ethical reflection to ensure they have the capacity to make informed trade-offs for social justice. During testing, deployment and review, activities such as testing in real-life conditions, informing users and stakeholders affected by the system, and monitoring need to take

place in a way that enable protection of basic liberties, equality of opportunity and the difference principle.

The findings of this study thus offer AI providers a better understanding of what they need to consider beyond compliance, if they are to play their part in ensuring social justice. The resulting framework is not a governance model but a starting point for designing ethics-informed governance mechanisms and development practices (subject to further research), which supports these organisations in their efforts towards ethical software development.

### CRediT authorship contribution statement

**Salla Westerstrand:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

The data used in this article consists of regulatory texts that are freely available online in the EU's document repository.

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