# Solutions & Challenges of AI Practitioners in AI Act Compliance

Dennis Lawo
University of Siegen
Siegen, Germany
dennis.lawo@uni-siegen.de

Thomas Neifer
Bonn-Rhein-Sieg University of Applied Sciences
Sankt Augustin, Germany
thomas.neifer@h-brs.de

Yves Anand Roßbach
Bonn-Rhein-Sieg University of Applied Sciences
Rheinbach, Germany
yves.rossbach@smail.wir.h-brs.de

Alexander Boden
Bonn-Rhein-Sieg University of Applied Sciences
Sankt Augustin, Germany
alexander.boden@h-brs.de

## Abstract

The European Union's Artificial Intelligence Act is a new regulation aimed at ensuring the safe and ethical use of artificial intelligence systems within the EU. This paper investigates the practical impact of the AI Act on the work of AI practitioners. We conducted a qualitative study based on seven semi-structured interviews with AI experts. Our results show organisations face considerable uncertainty when it comes to integrating the new regulatory requirements into their provision processes. In the technical area, the need for transparency and explainability of AI systems and the use of monitoring systems are emphasised. The study also provides insights into initial solutions that organisations are pursuing to overcome these challenges. Our findings extend previous research by providing empirical account from an experts perspective for prevailing challenges. Moreover, our study provides practical implications as well as avenues for future research, i.e. to align practice and legal practice better by standards, tools, and processes.

## CCS Concepts

• **Human-centered computing** → *Empirical studies in HCI*; • **Social and professional topics** → **Governmental regulations**; *Management of computing and information systems.*

## Keywords

AI Act, Practitioner, Expert Interviews, Compliance, Policy, Software Engineering

**ACM Reference Format:**
Dennis Lawo, Thomas Neifer, Yves Anand Roßbach, and Alexander Boden. 2025. Solutions & Challenges of AI Practitioners in AI Act Compliance. In *12th International Conference on Communities & Technologies (C&T 2025), July 20–23, 2025, Siegen, Germany*. ACM, New York, NY, USA, 11 pages. https://doi.org/10.1145/3742800.3742835

## 1 Introduction

Artificial intelligence (AI) is developing rapidly and is being increasingly used in various sectors [6]. With this increase in technological importance and widespread use, the ethical, legal, and safety challenges associated with the implementation of AI systems are also increasing [1, 16, 31, 36, 41]. The European Union's Artificial Intelligence Act (AI Act) was brought into regulatory effect in August 2024 to establish clear guidelines and standards for the development and use of AI to address these challenges [17, 18].

While the AI Act aims to promote the responsible use of AI [17], it remains unclear how effectively these regulatory measures are being implemented in practice by those involved in AI development and design [19, 26, 33]. One particularly important aspect that has been little explored to date is how practitioners are bringing AI systems into compliance with these new regulations within their fast-paced and interdisciplinary working environments [26, 37]. The integration of such regulatory requirements into the often complex and dynamic work processes poses a challenge that needs to be better understood to provide support and guidance in fulfilling the regulatory goals of a safer and more ethical AI [37].

**Research Questions:**

- RQ 1: How do the requirements of the AI Act affect the work of AI practitioners?
- RQ 2: What are current challenges and solutions in implementing the requirements of the AI Act in practice?

To fill this gap, we conducted a qualitative study based on seven in-depth interviews with AI experts. These interviews provide insights into the practical challenges and solutions encountered when dealing with the AI Act, particularly in relation to the interactions with ethical affordances, collaboration, and the influence of work processes on the implementation of regulatory requirements.

Our results show organisations face considerable uncertainty when it comes to integrating the new regulatory requirements into their interdisciplinary work processes. The experts interviewed reported difficulties in interpreting regulations and applying them in practice within existing development cycles. While parts of these challenges are already known from previous research [26, 37], our research uncovered early solutions from practice that were adopted shortly after the AI Act was officially issued.

This study makes an important contribution to understanding the practical impact of the AI Act on the work of AI practitioners. Our findings extend previous research by providing empirical account from an experts perspective for prevailing challenges. Moreover, our study provides practical implications as well as avenues for future research, i.e. to align practice and legal practice better by standards, tools, and processes.



*C&T 2025, Siegen, Germany*

ACM ISBN 979-8-4007-1521-1/25/07
https://doi.org/10.1145/3742800.3742835

# 2 Related Work

## 2.1 The Need for AI Regulation

The utilisation of AI has become pervasive, as demonstrated by the advent of ChatGPT and other LLMs [6]. A diverse range of actors, spanning from corporate entities to individual consumers, are employing AI systems and services to benefit from its advantages [24]. AI is integrated across various industries, including retail [34], agriculture [7], entertainment [21], manufacturing [5], and education [42].

At the same time, researchers and experts from practice raise concerns about the increasing penetration of society by AI systems and the potential risks coming from certain applications [3, 20]. These risks range from discrimination based on poor data quality and/or training procedures [40] to malicious use, e.g., for cyber attacks [10]. These concerns motivate governments to protect their societies by employing AI regulation, e.g., ChatGPT was briefly banned in Italy in 2023 due to suspected data protection violations [9]. In the early phases of the current AI developments, governmental approaches, but also academic, NGO, as well as industry attempts to regulate AI mostly relied on principles such as transparency, justice and fairness, or non-maleficence [25].

These principles alone, however, cannot guarantee effective regulation of AI and therefore minimization of AI risks [30]. AI development, according to Mittelstadt [30], lacks common aims and fiduciary duties, a professional history and norms, proven methods to translate principles into practice, and a robust legal and professional accountability mechanisms. For example, while medical professional are accountable for the health of their patients even in case of contradicting organisational goals, AI developers are not bound to such practices but the goals of their enterprise. This also results in a checklist mentality when it comes to regulatory approaches or frameworks. Thus, we can argue that there is a gap between legal documents and the reality of technological implementation and design in practice, that needs to be bridged to bring regulation into action [22]. In this context, Ibanez et al. conclude to bridge the gap between ethical AI and its implementation, organizations should support their developers by implementing a data-driven culture, focusing on the complete AI life cycle, implementing a code of ethics, as well as providing training on ethics [23]. However, there is a lack of standardised and consistent definitions of key concepts (e.g., interpretability, transparency and explainability) [25, 32]. These terms are often used interchangeably, leading to confusion and inconsistency, nor are they proven to support practitioners [14, 25, 30, 33]. Moreover, Coiseau et al. [14], e.g., found that practitioners perceive the global regulatory landscape as inconsistent and immature or early-stage. Even for more mature regulations, e.g., the data protection regulation developers might face issues in navigating the complex landscape of regulations [4].

Thus, further research is needed to close the gaps between the theoretical concepts of AI regulation and its practical application [14]. According to Morley et al. [33] and Floridi et al. [19] tools and methodologies to support practitioners in this endeavour are not yet effective in real-world practices. While the technical components and design features of trustworthy, interpretable or human-centric AI have received much attention in research, the perspectives of practitioners who need to comply with regulations or normative requirements remain under-researched. To address this research gap, this paper investigates the challenges of AI practitioners with the European Union's AI Act.

## 2.2 The European AI Act Approach

The EU has recognised the potential as well as risks of AI and its impact on society and economy. Risks, according to the EU, stem from ethical concerns, bias, security issues and threats to fundamental rights [17, 18]. Thus, the EU issued the AI Act in its first version in 2021 and adopted the AI Act in 2024. This regulation, aims for a balance between innovation and safeguards to protect from unacceptable and high risks. The foundation of the AI Act is a risk framework, that determines the required obligations for roles involved in the AI lifecycle systems [35, 38]. The risk categories include *unacceptable risk*, *high-risk*, *limited risk*, and *minimal risk* [18]. While a majority of systems fall under the limited - low risk categories, some use cases are banned due to their unacceptable risk, e.g., systems that exploit peoples vulnerabilities [13]. High risks, however, should be subject to restrictions due to their potential negative impact on users [17].

Major obligations coming from the AI Act include the need to carry out conformity assessments, ensure data governance, documentation and implement monitoring mechanisms for AI systems throughout the complete lifecycle. Given this framework, the AI Act imposes significant responsibilities on AI practitioners, especially those working with high-risk AI systems.

As discussed in the previous section, such requirements add new complexities to the AI development process. Practitioners must not only deal with the expectations of end-users, but also with those of regulators while managing the fast-paced technological developments. While a lot of research considers the discussed ethical dimensions and human-centricity on which the AI Act is based on [1, 16, 31, 36, 41], there is little research on the actual challenges and solutions of practitioners.

Liebl and Klein [29] found in their study that while the majority of AI practitioners consider "record-keeping, human oversight and technical documentation" to be manageable, they consider the overall complexity of complying with the AI Act to be high, especially for high-risk AI system providers. Still, less than 25% of respondents categorised most requirements as straightforward, highlighting the significant challenges involved. Despite the concerns, most practitioners have no intention of moving their business. However, 50% of AI start-ups express the view that the AI law will affect the innovation process in Europe and 16% are considering stopping AI development or relocating operations outside the EU due to the regulatory burden.

Although the regulations are generally supported, as the study of Koh et al. [26] found, some companies express concerns about unclear legal interpretations and emphasise the need for more precise legal definitions. They conclude that companies are in particular need of resources to implement the AI Act, including optimised access to legal advisors and more precise communication of the legal requirements as this poses a major challenge. In particular theirs ample assesses the documentational effort as a burden [26], other than the sample of Liebl and Klein [29]. According to their studies existing guidelines should be more comprehensible. Furthermore, there is a need for additional compliance support, particularly in areas such as performance and bias assessment [26].

Reflecting on their experience from the University of St. Gallen Grand Challenge 2023 (a competition in which interdisciplinary teams are challenged with assessing the legal compliance of real-world AI-based systems based on the AI Act), Scantamburlo et al. [37] found technical challenges, legal challenges as well as cultural challenges. For example, from a legal perspective the use case based definitions of AI made the assessment of general purpose AI quite difficult for the participants. Moreover, developers were challenged by high explainability as well as fairness expectations without being able to rely on robust methods.

To the best of our knowledge, there is no research on the challenges and solutions of practitioners for fulfilling the AI Act regulation. While research such as the study of Koh et al. [26] investigated some of these topics, namely "regulation, the AI Act, performance measurements, explainability, bias mitigation or security", their approach did not aim for an open collection of additional challenges. Moreover, solutions and best-practices of early AI Act adoption where not in scope.

## 3 Method

Our study consisted of seven semi-structured interviews with AI experts [2] from practice to understand the impact of the AI Act on the industry, challenges as well as solutions that organisations establish. The expert interviews were conducted in July/August 2024. Thus, the interviews cover the early phase of the AI Act, which entered into force in August 2024 after being passed by the parliament in March. Thus, the interviews cover an early experience with the AI Act in force. All interviews were conducted online [8] via a video conferencing software and lasted for an average of 55 minutes, with a minimum length of 30 minutes and a maximum length of 79 minutes. We recorded video and audio during the sessions.

### 3.1 Participants

We recruited 7 participants, who were experienced with AI development, design, and regulation (self-assessment as an expert in the field). To ensure reaching experts with different background, i.e. different roles, educational backgrounds, as well as companies, we decided for a board recruiting approach. This approach consisted of directly approaching relevant organisations, e.g., AI-related organisations, but also social media announcements (LinkedIn and Reddit). Moreover, we approached the participants of networking events on AI-related topics [39]. All participants lived in Germany and were males between 27 and 57 years old. As table 2 shows the participants come from various educational background and work in different roles in differently sized companies of varying industries.

Informed consent for the interview study was obtained by providing participants with a detailed consent form outlining the study's purpose, their role, and the handling of collected data. Participants confirmed their voluntary participation, awareness of the recording process, and their right to withdraw at any time without consequences. They were also assured of confidentiality and had the opportunity to ask questions before signing the document.

### 3.2 Semi-Structured Expert Interviews

The semi-structured interview was conducted in accordance with a predetermined yet flexible protocol, with the objective of exploring participants' perspectives on the implementation of the AI Act. The interview commenced with an introduction that delineated the study's objectives, ethical considerations, and data confidentiality protocols. This was followed by demographic questions designed to contextualize participants' backgrounds and assess their expertise. To ensure a shared understanding, the discussion commenced with an alignment of the participant's and the interviewer's definition of the AI Act.

The main section was then structured into four thematic blocks.

The **Implementation** block explored the extent to which awareness of the AI Act has already influenced organisations, whether they have prepared for its implementation, and the perceived consequences of its adoption. Additionally, this section sought to examine whether the anticipated regulations have already influenced AI development tools and practices.

The **Compliance Mechanisms** block was included to address how organizations interpret and respond to the need for adaptation of the AI lifecycle as well as regulatory uncertainties Moreover, we interrogated the experts about administrative oversight and governmental procedures, often criticized as overly complex.

The **Impact on Work Processes** block focused on how compliance affects internal work routines, especially in relation to liability and data protection. It aimed to capture both procedural or behavioural shifts by referencing the five phases of the AI lifecycle, with particular attention to regulatory sandboxes and their role in enabling innovation under the regulatory constraints.

The **Provision and Control** block addressed how organisations plan to align existing AI products with the new regulatory requirements, an aspect that has been relatively underexplored in prior discussions on the AI Act but is of particular interest for understanding long-term adaptation strategies.

The interview concluded with the formulation of an open-ended question, inviting participants to share additional perspectives or raise issues that had not been covered. This methodological approach ensured both consistency across interviews and the flexibility to capture nuanced insights into the implementation and impact of the AI Act.

### 3.3 Thematic Analysis

We transcribed each interview and subsequently coded the transcriptions following the six steps of the reflexive thematic analysis approach [11, 12]. These steps, as outlined by Braun and Clarke [12], include the familiarization step (1), data coding (2), initial theme identification (3), theme review (4), theme definition and naming (5), and report writing (6), which we describe in the following. For the familiarization step, all authors read the transcripts and wrote down initial ideas. With the help of the two research questions *How do the requirements of the AI Act affect the work of AI practitioners? (RQ 1)* and *What are current challenges and solutions in implementing the requirements of the AI Act in practice? (RQ 2)* the first and second authors clustered the thoughts and textual excerpts into initial themes (data coding and initial theme identification). The

| # | Gender | Age | Education | Role | Company |
|---|---|---|---|---|---|
| E1 | Male | 35 | Bachelor (Non-IT) | Senior AI Product Manager | Retail Software (> 10.000 Employees) |
| E2 | Male | 27 | Master (Non-IT) | AI Project Manager | Industry Association (< 20 Employees) |
| E3 | Male | 31 | Bachelor (Non-IT) | Managing Director | Insurance Software (< 20 Employees) |
| E4 | Male | 57 | Apprenticeship (Non-IT) | AI-Designer | Higher Education / Start-Up Center (> 250 Employees) |
| E5 | Male | 48 | High-School | Technology/AI Evangelist | Information Technology (> 100.000 Employees) |
| E6 | Male | 36 | Master (IT) | Lead AI Engineer | Real Estate (< 20 Employees) |
| E7 | Male | 40 | Master (Non-IT) | Head of Digitalization | Information Technology (> 100.000 Employees) |

**Table 1: Overview of the Interviewed Experts.**

reflexive thematic analysis process is generally based on deductive and inductive coding approaches. However, in our case, the approach was more inductive as we formed the themes based on the data material [12]. This step resulted in several themes for the two research questions.

To answer the research questions, the first and second author discussed the textual excerpts in an interactive session. Based on that session's results, the same authors defined a guideline with the generated themes and associated codes and gathered supporting quotations for each theme. This activity resulted in the themes as presented in the results section (theme review, definition, and naming).

After reviewing the results for RQ1 and RQ2, the first and second authors drafted the structure of the report. During this phase the same authors reviewed the relationship between the themes and codes once again and reached a point where no further themes and categories needed to be created. The final phase of producing the report was completed by all authors. While all transcripts were kept in their original language for the analysis phase, some quotes presented in the remaining sections of this paper were translated to English as literally as possible by the authors.

# 4 Results

## 4.1 Basic Understanding

The experts generally understood the AI Act as a regulatory framework that aims to mitigate the risks of AI, implement ethical values, and introduce risk classification. The opinions differ on the details and the impact on their work.

E5 describes the AI Act as a "typical European approach to innovation, focusing on data protection and the political will to take the risk of playing this card".

Two interviewees see the AI Act as a framework that "serves to regulate AI and its risks" (E5) where "ethical values in AI [...] are implemented and [...] risk classifications are made" (E6).

E2 sees the AI Act as a far-reaching regulation of AI that affects many software applications. It is also emphasized that it is the first comprehensive law on AI in the European Union, while regulation of AI due to adjacent law is not new.

> "[...] How can I say, there are various [regulatory] topics about it in New York, but it is the first comprehensive law, especially in the European Union." (E2)

The main objective of the AI Act is seen as the protection of private individuals and data in the context of the use of AI systems. The achievement of the objective is to be ensured through monitoring by the EU.

> "So I was mainly referring to the fact that there are these four risk classes and that the primary aim is to protect citizens from AI." (E7)

The methodology of the AI Act is seen by the interviewees as a deliberate implementation of risk classifications, which "presuppose different forms of regulation" (E2) and, depending on the classification and criticality, "establishes different degrees of regulation" (E1). The participants predominantly consider this to be sensible, as "not every use case has to be reviewed or controlled in a similar way [...]" (E7).

In general, E4 and E5 believe that a major point in the AI Act is the consideration of ethical and normative values and in particular the protection of people and fundamental rights. According to the participants, as an ethics-based legal system, the AI Act requires the transfer of ethical values into code.

> "For example, there is a lot of talk about ethical values in the AI Act. A lot is said about the need to have safe AI products, the need to have human-centric AI products, and a lot of scientific literature points out that all these terms are simply not standardized or defined." (E2)

E4 also sees the AI Act as a consumer protection measure and a protective shield for the EU to classify risks and implement a basic operational order to create the ability to act.

> "And just this thing where you can say I'm going to be put on a Robinson list and I won't get any more advertising. And if you do that anyway, you'll get a

> letter from the lawyer and you'll have to pay. But now the bigger idea within the EU is that what they do is a protective shield." (E4)

The perception of the AI Act varies. While E5 sees the AI Act as "the result of a very quick response, especially to generative AI [...]" and supports this quick response given the otherwise long regulatory processes, E1 "would have hoped for a much smarter solution from the EU perspective", as it is a "relatively weak result".

A frequently voiced concern is that the AI Act could trigger a risk of inhibiting innovation through over-regulation, particularly in European start-ups and small companies. Uncertainties regarding regulatory requirements and high costs for compliance measures could contribute to European companies being placed at a disadvantage compared to their international competitors. Even before the AI Act came into force, the perceived uncertainties were exacerbated by constantly changing political framework conditions, which had a negative impact on innovation processes.

> "The innovative strength on the developer side in AI companies has suffered because a great deal of uncertainty has spread due to the long, how should I put it, the long political negotiation period now caused by the AI Act and the very, how should I put it, constantly changing directions. On the one hand, of course, this has had an impact on innovation, because people have tried to prepare for possible scenarios." (E2)

Despite these hurdles, some experts see the AI Act as an opportunity for Europe to position itself as a safe and trustworthy location for AI development. E7 assumes that "companies complying with the AI Act will have an advantage because customers will have more confidence in their systems."

E4 differentiates Europe from other countries and emphasizes the strategy of ethical principles and security that is being pursued, which would enable European companies to survive in global competition, at least in the long term.

> "There are countries that simply develop AI models without giving much thought to ethical principles or safety. In Europe, we focus on this. That could be an advantage if it is implemented well." (E4)

However, this advantage depends heavily on the practical implementation. If the design is too complicated and restrictive, the AI Act could do more harm to the economy than good.

The protection of consumers and society from potential risks posed by AI systems is generally perceived as a positive central objective of the AI Act. The introduction of risk categories is perceived by the experts as a sensible measure, also to enable differentiated regulation.

> "I think it makes sense to have these risk classes because not every use case has to be reviewed or checked similarly." (E7)

## 4.2 Challenges

*4.2.1 Legal Challenges.* A fundamental problem with the AI Act is the lack of precision in the definition of key terms. Experts emphasise that terms such as 'safe AI' or 'human-centric AI' remain vague and leave companies in uncertainty about how they should adapt their products to meet regulatory expectations. Without clear, standardised definitions, companies are forced to interpret these principles individually, leading to inconsistencies in compliance with ethical standards, as the example of E2 shows.

> "A lot is said that you have to have safe AI products, you have to have human-centric AI products, and a lot of scientific literature states that all these terms are simply not standardized or defined." (E2)

This lack of clarity results in companies' autonomous assessment of compliance with the regulations, which can potentially lead to divergent interpretations of ethical standards. This in turn makes consistent implementation of the AI Act more difficult, as the underlying assessments differ.

> "So if you now say that the AI Act aims to issue a corresponding stamp or validation, it can be very good if internal assessments have been made, one company assesses it this way and the other company assesses it this way with actually the same facts." (E1)

Also the AI Acts' risk categorisation is vaguely defined, according to our participants. As a result, even experts have difficulty determining which particular systems fall under which regulatory categorisation. As a result, there is uncertainty about their obligations. This has an ambivalent effect — on the one hand, there is a risk that some companies will act with excessive caution and thus hinder the development of AI innovations. On the other hand, companies may unknowingly breach regulations.

E6 emphasises that the problem is exacerbated by insufficient resources to guide developers and companies to understand their compliance requirements.

> "The first difficulty was that I think many people who now work as programmers or engineers have absolutely no overview of what is involved. [...] And above all, what are the contact points? So where can I get information online and make sure that I'm not making any mistakes?" (E6)

Even if companies want to comply with the regulations, they face another challenge. The AI Act does not provide specific guidance on how its requirements should be implemented as technical solutions or organisational processes. As E5 notes, the requirements are very broad and leave room for interpretation in key areas.

> "It doesn't say what qualifications this person should have. Is it a 24/7 job or is it ultimately someone who looks at a report on Mondays and hooks onto it? There's also a lot of room for improvement in terms of interpretation." (E5)

This lack of specificity makes it difficult for companies to set up compliance processes, as they can only guess what the regulatory authorities expect in practice.

The challenges do not only manifest themselves in vague definitions and a lack of guidelines, but also extend to enforcement. While the AI Act defines general expectations, there are no binding mechanisms or concrete audit procedures in place to ensure compliance. In the absence of clear accountability, there is a possibility that some companies may ignore the regulations altogether, to gain a competitive advantage as E1 states.

> "Nobody is talking about this AI Act because, firstly, I think it is still difficult to grasp and, secondly, it is not yet binding. Nowhere is it said that someone will come and check it and I think that is essential for it to be successful at all, because there will also be companies that say, I don't care if no one checks it, then I'll just do what I want. And there are no concrete specifications yet. What will actually be audited? At the level at which it is formulated now, as I understand it, it can't be checked at all." (E1)

Finally, companies that have already established AI products on the market face additional challenges. Specific regulatory requirements apply to these systems, but the specific requirements remain unclear, leading to economic uncertainty. This is particularly worrying in industries with intensive regulation, such as finance, where AI systems play a crucial role.

> "The AI Act has certain special regulations for products that are already on the market. These are much longer deadlines. But where it could have certain effects is in the financial sector, for example. It's not yet entirely clear whether certain systems, for example, are covered by the bans. There is a need for clarification." (E2)

As companies await further clarification, the risk of non-compliance remains, which could block investment and innovation in AI-driven industries.

*4.2.2 Technical Challenges.* The AI Act confronts stakeholders with a number of technical challenges. One aspect concerns the implementation of technical standards for high-risk AI applications, whereby the implementation of these standards in complex AI systems is considered to be particularly challenging.

E6 emphasises that while industrial AI applications - such as automated quality control on assembly lines - are relatively simple, the real challenge lies in the AI systems facing humans, such as facial recognition software will have the greatest difficulty in ensuring compliance.

> "In Germany in particular, I would say that a large proportion of the AI systems that work here are specified for blatant industrial problems where an ethical problem like this doesn't even arise. Yes, it's about sorting out any defective products on the assembly line. [...] I think the big companies that will actually have problems with this are the big IT groups, because of course [...] they operate products such as facial recognition software, for example, where the question is how you process your data sets in a standardized way." (E6)

Another significant technical challenge is ensuring the proper validation and testing of AI models. A decisive factor here is the quality of the training data. Experts point out that historical biases in data sets can increase discrimination, which makes the development of unbiased AI systems considerably more difficult.

> "So if you look at things like discrimination through bias in a recruitment AI, for example, then you have to make sure that the data set is representative of everything. So even if Amazon goes and trains the AI with historical data from the last 10 years, it will be mainly old white men who hold the managerial positions in this historical data." (E3)

The challenge is therefore, according to E3, not only to identify and reduce prejudices, but also to ensure that AI models do not perpetuate existing inequalities. This perpetuation is exemplified by the reference to Amazon's real-world issues with developing an recruiting AI, that turned out to discriminate women [15].

The implementation of restrictive data protection laws, such as the GDPR, makes it even more difficult to guarantee high-quality training data. Experts point out that developers face a challenge that can be described as a difficult balancing act. As E2 explains, on the one hand, there is a need to provide extensive and diverse data sets in order to train effective AI models, but on the other hand, compliance with strict data protection regulations is required.

> "We have relatively strict data protection regulations within the EU. And that creates a certain tension for people who want to program AI to get hold of data that is high quality enough and compliant at the same time." (E2)

The AI Act mandates human oversight of critical decision-making processes to mitigate risks in high-risk AI applications. While experts generally view this requirement favourably, some wonder whether human involvement might introduce new biases instead of eliminating them.

E5 proposes an alternative: Instead of a one-sided focus on human oversight, monitoring of AI systems by other AI models is proposed to ensure compliance and minimise the potential for human error.

> "I think it's very good in principle, though. But what I would find even better, from my point of view, would be for Europe to take its own AI Act seriously, knowing full well that this is probably another form of over-regulation [...] to create an AI that monitors an AI." (E5)

*4.2.3 Organisational Challenges.* Under the AI Act, companies, especially large companies, are confronted with extensive administrative obligations. Experts warn of the consequences of fulfilling the regulatory requirements. They fear that these will lead to a considerable expenditure of resources and slow down innovation processes. The documentation and reporting obligations are, as the example of E3 shows, considered to be so extensive that compliance will become a major challenge.

> "But I see the bigger problem with large companies, [...] because you have to worry that you're going to have a huge pile of issues with documentation requirements, reporting obligations, I don't know what. So that's just horror for the big companies." (E3)

In addition to documentation, companies are required to modify their internal compliance processes in order to harmonise them with the requirements of the AI Act. Experts, e.g., E5, predict that ensuring compliance with the regulations will not only be time-consuming, but could also put European companies at a competitive disadvantage compared to their global competitors.

> "[We must] integrate structures that enable compliance and thus also [...] legislative and judicial authorities to access this data in line with its usefulness. And that will be a huge competitive disadvantage compared to Asian, Russian or even American AIs, which [...] are virtually all much better and faster for precisely this reason." (E5)

Another challenge lies in determining who is responsible for taking ethical considerations into account in AI systems. The AI Act does not contain any clear regulations on the implementation of ethical principles, meaning that responsibility for their application lies primarily with the developers. Several experts criticise this approach and argue that ethical decisions should not be made by the programmers alone, but should be regulated by independent supervisory mechanisms.

> "I think that the developers should clearly get involved, but I would say that it is not primarily their job to define ethical values. They have to work following the law and not according to a diffuse understanding of ethics." (E2)

The AI Act not only affects the development of AI systems, but also their maintenance. According to several experts, the new regulations could significantly change the update cycles for AI products, especially with regard to high-risk applications. In the event of a breach of the regulations, companies could be obliged to make immediate corrections or even consider discontinuing their services.

> "That is the case [E6 is referring to by law enforced updates in case of non-acceptable behaviours] and it will also mean that companies that are active in these high-risk areas, or perhaps not necessarily only those, but that use their algorithms in an area where there are ethical issues, will of course be forced to increase the speed of iteration and the number of iterations over the actual model, which is of course clear in the case of, well, we are now in the age of, let's say, large language models and large vision models and that can of course lead to the death of the company, especially for them." (E6)

Even companies that are used to regular update cycles can be disrupted by sudden regulatory changes. This can lead to higher costs and delays in the implementation of new developments.

> "I think we will basically stick to it because it is simply pragmatic, because it also corresponds to the reality of delivering at speed. What can happen, of course, and this can also happen due to other emergency cases, is that you say, okay, something has happened. We need a solution immediately and we have to roll out the fix within two weeks." (E1)

Another problem is the lack of clarity regarding the long-term legal implications of the AI Act. The lengthy political decision-making process has already had an impact on the innovation process according to our experts' perception. In view of future changes of the legal framework, e.g., by case law, AI providers may adopt a wait-and-see attitude, as the statement of E2 shows.

> "But what we have also noticed, especially before implementation, now before it comes into force, is that the innovative strength of developers in AI companies has simply suffered because a great deal of uncertainty has spread due to the long political negotiation period caused by the AI Act and the constantly changing priorities." (E2)

The lack of clarity regarding enforcement measures and compliance expectations can lead companies to take a conservative approach to AI development. In the absence of clear legal precedents, many companies may postpone innovation for fear of potential legal consequences.

> "I think that the fact that there are ultimately no judgments or previous measures means that many people will initially feel safe and think, oh well, I'll just do it in peace or whatever, maybe I'm not aware that it should already exist." (E5)

In addition to the administrative burden, the financial burden poses a further challenge. In particular, companies that specialise in large-scale AI models can be faced with significant costs if they have to retrain their models due to regulatory concerns. For start-ups and smaller companies, this financial burden could be insurmountable as E6 predicts.

> "Of course, that can really kill a company, a young company, because it's incredibly expensive to train these things in the first place. [...] And that means that if incorrect data has flowed into it, you have almost no choice but to carry out pre-training from scratch, which will cost, I don't know, hundreds of millions of euros in the order of magnitude of chat GPT." (E6)

## 4.3 Solutions

*4.3.1 Legal Solutions.* Even before the implementation of the AI Act, companies have started to categorise their AI systems according to risk levels in order to anticipate the impact of the regulations even before the AI Act was officially issued. This proactive approach allowed them to assess compliance requirements as early as the development phase.

> "But what we did, for example, with products that had already been launched on the market before the event came into force, while it was still in the design phase, was to assess which risk category it could fall into." (E2)

The development of internal tools such as flowcharts by the companies serves as a facilitater for the assessment. These materials supplement the AI Act and make its requirements more tangible and easier to handle for companies.

> "[...] there was an overview with a kind of flowchart where you could go through whether a process was affected by the AI act or not." (E6)

In addition to internal measures, some experts are calling for increased cooperation within the industry. Participation in committees and standardisation bodies is seen as a way of shaping

| Level | Challenges | Solutions |
|---|---|---|
| Legal | Non-standardised and unclear definitions | Involvement in stakeholder groups to actively promote and shape normalisation and standardisation |
| | Uncertainty about risk classification | Early initial categorization to anticipate effects |
| | Lack of precise guidelines for implementation | Usage of flow charts and tools for evaluation |
| | Lack of standardised audit mechanisms | External consultation for audits when lacking expertise |
| Technical | Difficulty of validating complex AI models | Use of intelligent technologies for monitoring and control |
| | Bias due to historical data | Selection, generalisation and compliant preparation of the right data |
| | Field of tension between data privacy and quality | Human-in-the-loop |
| | Explainability and comprehensibility of decisions | Transparent and explainable AI design |
| Organisational | High documentation requirements and obligations | Establishment of company-wide rather than purely project-related compliance structures |
| | Resource and cost effort | Utilisation of structures and experience from the implementation of the General Data Protection Regulation |
| | Unclear responsibility for ethical principles | Establishment of specific roles for AI compliance |
| | Disruption of update cycles | |

**Table 2: Challenges in and Solutions for Dealing with the AI Act**

regulations and developing common best practices. During the survey, such initiatives were not yet implemented, but were considered essential to reduce uncertainty and accelerate compliance.

> "[...] not the internal work, but the external work, that companies perhaps get involved in committees, standardization committees, standardization committees that now have to develop all these standards and norms, but that they do not work internally on compliance, but rather that they help to implement it externally as quickly as possible so that they can then deal with internal compliance as quickly as possible." (E2)

Companies are faced with the challenge of effectively managing compliance risks. In this context, they consider external audits to be an effective tool. Given the complexity of the AI Act, independent validation is considered crucial by E1 to ensure compliance and avoid reputational damage.

> "Well, then we also have to make sure somewhere that we're not doing anything bad with AI, and it's not enough for us to promise that, an independent auditor also has to confirm that, and then of course we also have to live it and go the extra mile to implement it." (E1)

Regulatory sandboxes are seen as valuable test environments — as the quote of E2 exemplifies — that allow companies to experiment with AI applications under real-life conditions while ensuring compliance with regulations. This approach has already proven effective in other highly regulated sectors, such as the financial sector.

> “But we also have to say that in the financial sector, for example, if you look at fintech start-ups, this regulatory sandbox model has been around for a long time.” (E2)

*4.3.2 Technical Solutions.* Compliance with the AI Act requires companies to improve the transparency and explainability of AI systems. This not only contributes to regulatory compliance, but can also provide a competitive advantage by demonstrating high ethical standards. This is extended by E1 who addresses the establishment of internal ethical guidelines and processes, which could also go beyond the legal requirements.

> "Then we can also make it transparent to the customer that we are doing a lot to adhere to this, because only then will you have a competitive advantage. So doing this for its own sake is okay, but then of course the question is, do we want to be ethically better than Amazon?" (E1)

Moreover, companies are investing in monitoring systems that log the use of AI and ensure compliance with the new regulations. These technologies should enable audit-proof documentation and strengthen internal governance structures.

> "I think it's more the case that you have to integrate other technologies to guarantee this control. [...] you have to build a complete layer around it, so to speak so that this information is generated about the use of these systems and then probably also [...] that you store it in an audit-proof manner somewhere in the company." (E6)

E5 adds that "ultimately, monitoring is based on existing structures and expanded to include these concepts." Thus prior experiences with monitorting of AI can be leveraged to ensure compliance.

In addition to purely technological solutions, experts emphasise the need for human control in AI decision-making processes. Human-in-the-loop approaches help to ensure safety and enable continuous optimisation of AI models through feedback loops.

> "There should be control gates [...] where a human has to be shown this again at critical points. [...] It's also about giving the AI feedback" (E7)

Embedding compliance requirements into the early stages of AI development can enhance regulatory certainty and streamline project planning, according to the experts. Strong requirements engineering is seen as an essential component for aligning technical development with legal requirements.

> "If we know what is required from the outset, then we can plan the corresponding project plans or even the agile implementation accordingly." (E7)

In the context of requirements engineering and early process steps, the aspects of data quality and the ethical handling of data are becoming increasingly relevant for companies. Some companies are already implementing data generalisation procedures to protect the privacy of data subjects and ensure the robustness of AI models.

> "So what we are already doing is generalizing data, [...] creating profiles, so to speak. That is, in a way, that is already being done there." (E1)

Another important focus area is the avoidance of bias in AI models. E6 emphasise the importance of careful data selection to ensure fairness and avoid discriminatory results.

> "But basically, as soon as you work with a topic that directly affects people, you have to be careful how you prepare your data sets so that you have balanced data sets [...] you also validate your algorithm to ensure that it has no bias in any direction. That is extremely important." (E6)

*4.3.3 Organisational Solutions.* Experts emphasise the need for specific roles and processes that are responsible for compliance with AI regulations. This aspect is compared to the implementation of the GDPR, which also required companies to appoint specialists to ensure compliance with data protection laws.

> "Specific roles are needed in the company that are explicitly responsible, if not for the technology, then for the subject matter." (E1)

> "And then of course [...] if you have to implement regulations because of the AI Act, you're moving into a field where many IT people have no expertise at all. So of course you have to think about how to implement these processes in the first place [...], which is also associated with additional costs and greater complexity." (E6)

The complexity of the AI Act has resulted in a significant number of companies, particularly smaller ones, seeking the expertise of external legal and compliance professionals. However, the high demand for specialised AI law firms has led to a increase in costs and long waiting times for other to get the necessary support.

> "It's all a bit tricky and very stepmotherly if I'm honest. But not in the sense that we enjoy the gray area, but in the sense of pragmatism, we don't yet know how to deal with it and we simply don't have the monetary or budgetary resources for it. But theoretically, you would now have to get a law firm that specializes in AI. But they have a huge waiting list of companies themselves, so we have to dig deeper into our pockets and so on." (E5)

Some experts point out that, organisations that have already established robust GDPR compliance frameworks are regarded as having a solid foundation for meeting the requirements of the AI Act. Companies with experience in data protection regulation processes may possess a distinct advantage in adapting to AI Act regulation.

> "[...] I don't believe that this will have a greater impact on our approach than before. From the background, however, because we already recognized data protection as an issue beforehand." (E5)

Whilst there is an upfront investment required for compliance efforts, some experts argue that these efforts will ultimately lead to more efficient AI development. The establishment of robust data governance and compliance mechanisms in the present may result in faster project timelines in the future.

> "I think first of all, the groundwork in terms of ensuring data quality, ensuring the systems are compliant, that may be more time-consuming in the first step, but that's the groundwork. That's why the projects are perhaps currently longer than we will see in the future." (E7)

## 5 Discussion

Our research on identified practical implications for supporting organisations in their AI Act compliance. These address organisational stakeholders but also other practitioners and researchers who aim to support practice by relevant tools. Moreover, our research bears implications and avenues for research.

In general our research support many of the assumptions of previous research but provides empirical account. For example, the categorization of the challenges is in line with the experience report of Scantamburlo et al. [37]. However, regarding the administrative burden our research shows that, in contrast to Liebl's and Klein's [29] research, our participants perceived documentation as a costly extra-effort coming with the AI act. This is in line with Koh et al. [26], whose practitioners also perceived the effort as an additional burden.

*Design Usable Supplementary Materials to the AI Act.* Prior research [19, 33] on technology regulation found tools and methodologies to support practitioners are not yet effective in real-world practices. In particular, in the context of the AI Act the communication of legal requirement to non-legal professional is challenging [26].

This challenge was also addressed by the experts in our sample, who describe particular legal challenges arising from uncertainties of concepts, procedures, and compliant technical solutions. Based on their observations supplementary/supportive resources could help in communicating the complex legal requirements in a actionable way. While other organisations could adopt such an approach, research should engage in researching the design of these kind of translational-tools for practitioners. While we know these problems from informations security policies, solutions remain under-researched [27].

Interestingly this shifts the focus towards the communication of clear legal requirements instead of ethical decision making as suggested by Ibanez et al. [23]. Still, we would argue for both clear legal guidance and ethical skills to deal with ethical requirements beyond the legal obligations and successfully manage edge-cases.

*Science/Practitioner/Policy Collaboration.* Another solution to deal with the legal uncertainties that our experts brought forward was the engagement in industry groups to establish common standards for compliance with the AI Act. Such establishment of industry standards can be supported by research, as the policy engagement of HCI on digital accessibility has shown in the past [28].

Such collaboration of practitioners and researchers could complement what Koh et al. [26] call "Linking industry & political agenda". Establishing a proper science/industry policy interface on AI regulation could help resolving legal uncertainties based on collaboration, instead of waiting for case law to resolve these uncertainties.

*Refine Definitions and Provide Actionable Benchmarks.* Our research was particularly motivated by the gap between the research that considers the discussed ethical dimensions and human-centricity on which the AI Act is based on [1, 16, 31, 36, 41] and the little focus on practical challenges from the rather vaguely defined terms [25, 29, 32] as well as the regulatory obligations of the AI Act [26, 37].

Regarding this gap, our research supports the assumption that key-concepts are unclear to practitioners and thus create uncertainties. While some of these uncertainties can be resolved by said engagement in standardisation, other remain vague. Thus, besides technical and procedural standard clear definitions and benchmarks are required. Thereby, in particular, research can support practice by providing the necessary guidance through actionable definitions.

*Linking GDPR and AI Act.* Quite interestingly, our experts draw a connection between GDPR compliance processes and AI Act. This is in line with the experience report of Scantamburlo et al. [37], who also see their prior experience with GDPR as beneficial for the Grand Challenge they participated in. Thus, integrating regulatory compliance of both European regulations could be beneficial for practice to reduce effort and efficiently use the same organisational resources.

Moreover, from our perspective, the integration of GDPR and AI Act could help in resolving the tension between the reliance on biased publicly available data and the collection of new data. Still, this entails challenges for research and practice, as processes need to be aligned. Here, research could engage in supporting to close these organisational gaps, by understanding integration opportunities and designing tools for a more general regulatory compliance of the AI life-cycle.

*Provide Account for Long-Term Benefits.* Lastly, we want to catch up a quite interesting thought by E7.

> "I think first of all, the groundwork in terms of ensuring data quality, ensuring the systems are compliant, that may be more time-consuming in the first step, but that's the groundwork. That's why the projects are perhaps currently longer than we will see in the future." (E7)

From our perspective, research and practice have primarily been focusing on ensuring compliance rather than increasing and communicating the benefits of compliance. Benefits here could be business benefits, in the sense of competitive advantage as well as societal benefits, e.g., prosperity and well-being. Thus, we should in collaboration with partners from practice link regulatory goals such as an absence of AI bias to clear benefits for the stakeholders. Thereby, research could provide the empirical account for the linkage between compliance and the specific benefits, to motivate adoption of the AI Act, even beyond the EU legislation.

## 5.1 Limitations

While our study provides valuable insights into the preparation for the AI Act, it is limited by several factors.

Firstly, our research is limited by the rather small sample, although we perceive the interviewed experts as key figures due to their positions in large companies or their network effects in industry associations. Thus, larger scale studies similar to the approach of Liebl and Klein [29] should be conducted in the future.

Moreover, the interviews were conducted at a time when the regulation was just accepted a few month ago and about to become partly effective (full applicability from August 2026 onwards). The participants' statements are therefore based on anticipated challenges and preparational efforts, instead of experience with authorities and regulatory issues.This also explains the lack particular solutions, e.g., how to design effective artefacts, to bridge the gap between policy and practice. Thus future research should pick up these findings and dive into designing and further research these specific solutions.

Thirdly, the composition of the sample must be viewed critically. The participants showed a high level of knowledge about the AI regulation — which is probably caused by the selection mechanism. Although there was no formal pre-selection in terms of prior regulatory knowledge, there is probably a self-selection effect evident here. As a result, perspectives from more practical, less regulation- or management-oriented roles could be underrepresented. Future studies should focus on a larger heterogeneity and more hands-on practitioners.

# 6 Conclusion

This paper analysed the practical impact of the AI Act on organisations and uncovered significant challenges in integrating the new regulatory requirements into their provision processes. The expert interviews highlighted difficulties related to legal uncertainties due to unclear definitions and a lack of specific implementation guidelines, technical challenges in validating complex AI models and dealing with data bias, as well as organisational burdens due to extensive documentation requirements and the need to adapt internal compliance processes.

The study also provides insights into initial solutions that organisations are pursuing to overcome these challenges. These include the early risk classification of AI systems, the development of internal assessment tools such as flowcharts, efforts to increase industry cooperation in standardisation committees and the consideration of external audits. In the technical area, the need for transparency and explainability of AI systems and the use of monitoring systems are emphasised. In organisational terms, the creation of specific roles for AI compliance and the use of experience from the implementation of the GDPR are seen as potentially helpful.

Based on these findings, our research makes an important contribution to understanding the practical impact of the AI Act on the work of AI practitioners. Our findings extend previous research [26, 37] by providing an empirical account of prevailing challenges from an expert's perspective. Moreover, our study provides practical implications as well as avenues for future research, i.e. to align practice and legal practice better by standards, tools, and processes.

## References


[1] Ashraf Abdul, Jo Vermeulen, Danding Wang, Brian Y Lim, and Mohan Kankanhalli. 2018. Trends and Trajectories for Explainable, Accountable and Intelligible Systems: An HCI Research Agenda. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (2018). https://doi.org/10.1145/3173574

[2] Eileen M Ahlin. 2019. Semi-structured interviews with expert practitioners: Their validity and significant contribution to translational research. (2019).

[3] AlgorithmWatch. 2023. AlgorithmWatch demands the regulation of General Purpose AI in the AI Act. https://algorithmwatch.org/en/algorithmwatch-demands-regulation-of-general-purpose-ai/

[4] Jozef Andraško, Matúš Mesarčík, and Ondrej Hamuľák. 2021. The regulatory intersections between artificial intelligence, data protection and cyber security: challenges and opportunities for the EU legal framework. *AI & society* (2021), 1–14.

[5] Jorge F Arinez, Qing Chang, Robert X Gao, Chengying Xu, and Jianjing Zhang. 2020. Artificial intelligence in advanced manufacturing: Current status and future outlook. *Journal of Manufacturing Science and Engineering* 142, 11 (2020), 110804.

[6] Hasnan Baber, Kiran Nair, Ruchi Gupta, and Kuldeep Gurjar. 2023. The beginning of ChatGPT–a systematic and bibliometric review of the literature. *Information and Learning Sciences* 125, 7/8 (2023), 587–614.

[7] Gouravmoy Bannerjee, Uditendu Sarkar, Swarup Das, and Indrajit Ghosh. 2018. Artificial intelligence in agriculture: A literature survey. *international Journal of Scientific Research in computer Science applications and Management Studies* 7, 3 (2018), 1–6.

[8] Antonina Bauman. 2015. Qualitative online interviews: Strategies, design, and skills. *Qualitative research in organizations and management: An international journal* 10, 2 (2015), 201–202.

[9] BBC News. 2023. ChatGPT banned in Italy over privacy concerns. https://www.bbc.com/news/technology-65139406

[10] Kirti Raj Bhatele, Harsh Shrivastava, and Neha Kumari. 2019. The role of artificial intelligence in cyber security. In *Countering cyber attacks and preserving the integrity and availability of critical systems*. IGI Global, 170–192.

[11] Virginia Braun and Victoria Clarke. 2012. Thematic analysis. *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological.* (3 2012), 57–71. https://doi.org/10.1037/13620-004

[12] Virginia Braun and Victoria Clarke. 2021. *Thematic Analysis: A Practical Guide* (1st ed.). SAGE Publications Ltd, London.

[13] Johanna Chamberlain. 2023. The risk-based approach of the European Union's proposed artificial intelligence regulation: Some comments from a tort law perspective. *European Journal of Risk Regulation* 14, 1 (2023), 1–13.

[14] Carter Cousineau, Rozita Dara, and Ataharul Chowdhury. 2024. Trustworthy AI: AI developers' lens to implementation challenges and opportunities. *Data and Information Management* (2024), 100082.

[15] Jeffrey Dastin. 2018. Insight - Amazon scraps secret AI recruiting tool that showed bias against women. https://www.reuters.com/article/world/insight-amazon-scraps-secret-ai-recruiting-tool-that-showed-bias-against-women-idUSKCN1MK0AG/ [Accessed: 16.05.2025].

[16] Motahhare Eslami. 2017. Understanding and Designing around Users' Interaction with Hidden Algorithms in Sociotechnical Systems. *Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '17 Companion)* (2017). https://doi.org/10.1145/3022198.3024947

[17] European Commission. 2021. Proposal for a Regulation laying down harmonised rules on artificial intelligence | Shaping Europe's digital future. https://digital-strategy.ec.europa.eu/en/library/proposal-regulation-laying-down-harmonised-rules-artificial-intelligence

[18] European Commission. 2022. Regulatory framework proposal on artificial intelligence | Shaping Europe's digital future. https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai

[19] Luciano Floridi and Josh Cowls. 2022. A unified framework of five principles for AI in society. *Machine learning and the city: Applications in architecture and urban design* (2022), 535–545.

[20] Future of Life Institute. 2023. Policymaking in the Pause. (2023).

[21] Giri Gandu Hallur, Sandeep Prabhu, and Avinash Aslekar. 2021. Entertainment in era of AI, big data & IoT. *Digital Entertainment: The Next Evolution in Service Sector* (2021), 87–109.

[22] Stefan Albert Horstmann, Samuel Domiks, Marco Gutfleisch, Mindy Tran, Yasemin Acar, Veelasha Moonsamy, and Alena Naiakshina. 2024. "Those things are written by lawyers, and programmers are reading that." Mapping the Communication Gap Between Software Developers and Privacy Experts. *Proceedings on Privacy Enhancing Technologies* (2024).

[23] Javier Camacho Ibáñez and Mónica Villas Olmeda. 2022. Operationalising AI ethics: how are companies bridging the gap between practice and principles? An exploratory study. *Ai & Society* 37, 4 (2022), 1663–1687.

[24] Yuchen Jiang, Xiang Li, Hao Luo, Shen Yin, and Okyay Kaynak. 2022. Quo vadis artificial intelligence? *Discover Artificial Intelligence* 2, 1 (2022), 4.

[25] Anna Jobin, Marcello Ienca, and Effy Vayena. 2019. The global landscape of AI ethics guidelines. *Nature machine intelligence* 1, 9 (2019), 389–399.

[26] Fiona Koh, Kathrin Grosse, and Giovanni Apruzzese. 2024. Voices from the Frontline: Revealing the AI Practitioners' viewpoint on the European AI Act.. In *HICSS*. 1870–1879.

[27] Dennis Lawo and Gunnar Stevens. 2024. Information Security Policy Usability Scale: A Questionnaire for Evaluating the Usability of Information Security Policies. In *Mensch und Computer 2024-Workshopband*. Gesellschaft für Informatik eV, 10–18420.

[28] Jonathan Lazar, Julio Abascal, Simone Barbosa, Jeremy Barksdale, Batya Friedman, Jens Grossklags, Jan Gulliksen, Jeff Johnson, Tom McEwan, Loïc Martínez-Normand, et al. 2016. Human–computer interaction and international public policymaking: a framework for understanding and taking future actions. *Foundations and Trends® in Human–Computer Interaction* 9, 2 (2016), 69–149.

[29] Andreas Liebl and Till Klein. 2022. AI Act impact survey. *Exploring the impact of the AI Act on Startups in Europe* (2022).

[30] Brent Mittelstadt. 2019. Principles alone cannot guarantee ethical AI. *Nature machine intelligence* 1, 11 (2019), 501–507.

[31] Brent Mittelstadt, Chris Russell, and Sandra Wachter. 2019. Explaining Explanations in AI. *Proceedings of the Conference on Fairness, Accountability, and Transparency* (2019). https://doi.org/10.1145/3287560

[32] Jessica Morley, Anat Elhalal, Francesca Garcia, Libby Kinsey, Jakob Mökander, and Luciano Floridi. 2021. Ethics as a service: a pragmatic operationalisation of AI ethics. *Minds and Machines* 31, 2 (2021), 239–256.

[33] Jessica Morley, Luciano Floridi, Libby Kinsey, and Anat Elhalal. 2020. From what to how: an initial review of publicly available AI ethics tools, methods and research to translate principles into practices. *Science and engineering ethics* 26, 4 (2020), 2141–2168.

[34] Radhika Pillarisetty and Pratika Mishra. 2022. A review of AI (artificial intelligence) tools and customer experience in online fashion retail. *International Journal of E-Business Research (IJEBR)* 18, 2 (2022), 1–12.

[35] Lena Recki, Dennis Lawo, Veronika Krauß, Dominik Pins, and Alexander Boden. 2024. " You Can either Blame Technology or Blame a Person..."—A Conceptual Model of Users' AI-Risk Perception as a Tool for HCI. *Proceedings of the ACM on Human-Computer Interaction* 8, CSCW2 (2024), 1–25.

[36] Lindsay Sanneman and Julie A. Shah. 2022. The Situation Awareness Framework for Explainable AI (SAFE-AI) and Human Factors Considerations for XAI Systems. *International Journal of Human–Computer Interaction* 38, 18-20 (12 2022), 1772–1788. https://doi.org/10.1080/10447318.2022.2081282

[37] Teresa Scantamburlo, Paolo Falcarin, Alberto Veneri, Alessandro Fabris, Chiara Gallese, Valentina Billa, Francesca Rotolo, and Federico Marcuzzi. 2024. Software Systems Compliance with the AI Act: Lessons Learned from an International Challenge. In *Proceedings of the 2nd International Workshop on Responsible AI Engineering*. 44–51.

[38] Jonas Schuett. 2024. Risk management in the artificial intelligence act. *European Journal of Risk Regulation* 15, 2 (2024), 367–385.

[39] Leo Van Audenhove and Karen Donders. 2019. Talking to people III: Expert interviews and elite interviews. *The Palgrave handbook of methods for media policy research* (2019), 179–197.

[40] Mengyi Wei and Zhixuan Zhou. 2023. AI Ethics Issues in Real World: Evidence from AI Incident Database. In *Proceedings of the Annual Hawaii International Conference on System Sciences*. Hawaii International Conference on System Sciences. https://doi.org/10.24251/hicss.2023.602

[41] Katharina Weitz, Dominik Schiller, Ruben Schlagowski, Tobias Huber, and Elisabeth André. 2019. I"do you trust me?": Increasing User-Trust by Integrating Virtual Agents in Explainable AI Interaction Design. *IVA 2019 - Proceedings of the 19th ACM International Conference on Intelligent Virtual Agents* (7 2019), 7–9. https://doi.org/10.1145/3308532.3329441

[42] Xuesong Zhai, Xiaoyan Chu, Ching Sing Chai, Morris Siu Yung Jong, Andreja Istenic, Michael Spector, Jia-Bao Liu, Jing Yuan, and Yan Li. 2021. A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity* 2021, 1 (2021), 8812542.