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ARTIFICIAL INTELLIGENCE IN CONTRACTUAL PERFORMANCE: LIABILITY FOR BREACH OF CONTRACT

Artificial intelligence (AI) is taking on a larger role in contract performance. Due to the use of AI, debtors may fail to perform their obligation in the agreed manner, thereby causing damage to creditors. Since this matter is not regulated by EU hard law or soft law, the contractual liability arising from the use of AI is governed by the applicable domestic law. This raises the issues regarding the applicability and adequacy of the rules on contractual liability. In legal systems where contractual liability is strict, the rules can be directly applied. However, in systems that require fault, proving it becomes difficult when AI is involved, leading to a liability gap. The paper analyses four approaches to overcoming the liability gap: granting legal personality to AI, treating AI as an agent, regarding AI as an auxiliary, and introducing an exception in the form of strict liability.

Key words: *Artificial intelligence*. – *Contractual liability*. – *Agency law*. – *Auxiliary*. – *Strict liability*.

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1. INTRODUCTION: ARTIFICIAL INTELLIGENCE AND ITS USE IN CONTRACT PERFORMANCE

Artificial intelligence (AI, *Künstliche Intelligenz*, *intelligence artificielle*) and its application in many professions and fields is a topic that will undoubtedly mark the third decade of the 21st century.[1] Although ideas about intelligent machines appeared as early as the mid-20th century,[2] it took another sixty years for their full realization. Until a few years ago, the idea of artificial intelligence was mostly associated with robots that imitate humans in appearance, behaviour, and speech. The general public primarily perceived it as hardware, certainly not necessary for their day-to-day life. Today, however, it manifests itself as software implemented in different devices, with the aim of making everyday activities easier. This change in perspective is largely due to large language model-based AIs capable of generating and understanding human language, such as ChatGPT, which was introduced to the public in November 2022. This was followed by Microsoft launching Copilot in 2023, and Google making Gemini broadly available in 2024. Concurrently, AI assistants Siri and Alexa were developed, the former introduced by Apple and the latter by Amazon. Thanks to these AI systems, artificial intelligence is no longer perceived as a robot imitating humans, but rather as a widely accessible technology that can make everyday life easier.

What is artificial intelligence? Intelligence itself is defined as '*an innate ability to correctly understand things and phenomena in life and the world* [...] *that is, the ability of comprehension and perception*' (Vujaklija 1966, 361, translated by author). If applied to AI, the definition must be modified in two ways. First, naturally, a machine cannot possess an 'innate' ability. Second, intelligence also implies the ability to make independent decisions about how to act in different situations. In this sense, the European Commission states that a distinctive trait of AI systems lies in their capability to infer.[3] Accordingly, artificial intelligence can be defined as the ability of machines to correctly perceive and comprehend phenomena, and based on such understanding, to decide on how to act in certain circumstances.

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1 See Stanford Institute for Human-Centered Artificial Intelligence (HAI) 2025.

2 The term "artificial intelligence" was first used at the Dartmouth workshop, held in 1956 at Dartmouth College, also known as the founding event of the academic field of AI (Krauss 2024, 108).

3 See Recital (12) of Regulation (EU) 2024/1689 (AI Act). *https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng*, last visited September 8, 2025.

In this sense, artificial intelligence has a wide application in contract law. In the negotiation stage, the parties may use artificial intelligence for market analysis, the assessment of their own needs and transaction costs, in order to decide whether to conclude a certain contract. By analysing large volumes of data, companies can tailor their advertising, relying on the behavioural patterns of their clients and exploiting their 'vulnerability', which leads to a significant asymmetry of information (Ebers 2021, 207–208).[4] The AI in the pre-contractual phase is being widely used in the banking and insurance industries.[5] The role of AI is particularly emphasized in the conclusion of contracts, given the widespread use of contracting tools based on artificial intelligence and machine learning (e.g. in the financial instruments market), as well as chatbots (Ebers 2022, 22).[6] Furthermore, the contracts are often performed in such a way that the debtor fulfils their obligation using AI. Finally, artificial intelligence can assist in dispute resolution by processing claims and enabling online dispute settlement (Ebers 2022, 22–23); its capacity to analyse vast amounts of data can likewise be utilized in the examination of existing case law, which is a function of particular significance in legal systems grounded in common law.[7]

This paper considers the use of artificial intelligence in the performance of contracts, and in particular, the breaches of contract involving artificial intelligence. Such breaches are also called digital breaches of contract (Beckers, Teubner 2021, 6). The author examines how the rules on contractual liability apply if the debtor fails to perform their contractual obligation using artificial intelligence. At present, AI systems are not automatic, e.g. programmed to follow user inputs, but autonomous, thus capable of acting and deciding on its own. A machine based on AI itself is presently not a legal subject and therefore cannot bear liability. In order to understand the peculiarities of contractual liability involving the use of AI, one must understand how AI can be applied in this context. AI can be

[4] A clear example is provided by airlines, which advertise tickets at a higher price if the customer has already searched for the same flight or destination, since they use cookies and the IP address to identify repeated searches.

[5] In these sectors, artificial intelligence is used for the evaluation of clients and their creditworthiness, so that a bank can determine whether it a loan may be granted, or an insurance company can assess whether to conclude an insurance contract and under what conditions (see Ebers, Poncibò, Zou 2022, vi).

[6] The literature refers to the *Motionize* contract-drafting software, an artificial intelligence-based tool that operates as a Microsoft Word add-in (Solanki 2023, 1141).

[7] On the other hand, when it comes to the search for and, in particular, the interpretation of applicable legal rules, artificial intelligence has, in the author's view, still not reached a sufficient level of development to be used for such purposes.

used during contract performance in various ways and forms, as well as in different scopes.[8] The author will classify all cases into two categories, according to the extent of AI involvement and the degree to which the debtor retains control over the performance of the obligation.

First, the debtor may use AI in performing the obligation in the same manner as any mechanical or other tool. Such cases remain by far the most frequently encountered in practice. For example, an architect uses AI for calculations, a nutritionist uses AI when creating a meal plan, a coach uses AI when developing a training programme, and a lawyer uses AI when drafting a contract.[9] AI technology can also be placed into the personal computers/devices. Hence, robotic AI, such as drones that inspect wind turbines, can be used to automatically capture images, analyse them, point out possible irregularities, and suggest adequate actions, but the final repair decision remains with a human (Janssen 2022, 62). The common element across all these cases is that the debtor has full control over the performance of their obligation. Hence, the system cannot be regarded as autonomous in this case. The debtor controls whether they will use AI and to what extent. Furthermore, they determine whether the information obtained in that manner is correct and decide whether to rely on it for the performance of the contractual obligation. The debtor is entirely free to modify and improve the output, in whole or in part, to the extent they deem necessary. They may also decide not to rely on the information provided by AI at all, but to perform the obligation entirely themself. The contract is concluded with the debtor because of their expertise, which, when AI is used, lies in their ability to assess whether the output is reliable and appropriate. In such cases, the creditor may even be unaware of the use of AI or, if aware, consents to it, provided that the obligation is duly performed in accordance with the contract. This group of cases will hereinafter be referred to as 'AI solely as a tool'.

Second, the role of the debtor in the performance of the obligation may be significantly reduced in terms of controlling the performance itself. The contracting party (or even both parties) may outsource their decisions to algorithms (Beckers, Teubner 2024, 53). There are obligations that may be performed mainly depending on AI, being able to make the key decisions

[8] For instance, the AI Act imposes a risk-based approach, classifying AI systems as unacceptable risk, high risk, limited risk and minimal risk AI systems, based on the level of risk they generate. See European Commission n.d. AI Act. *https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai?utm*, last visited September 8, 2025.

[9] Janssen (2022, 60) uses the term 'human in loop-scenarios'.

through the process, which leads to the act of performance becoming less transparent for the debtor. Furthermore, the debtor may not even be aware of obstacles that AI has dealt with, the reasoning behind its performance in such a manner, and alternatives that were taken into consideration. For example, in autonomous stock trading, the debtor (e.g. the brokerage firm) may use an AI trading system for the performance of their contractual obligation to manage the client's investment portfolio, allowing the AI to buy and sell stocks in real time without seeking the debtor's prior approval for each transaction. Because of the lack of transparency and autonomous decisions made by AI, those are cases where the creditor is usually aware that their obligation has been performed using AI and consents to it.[10] This group of cases will hereinafter be referred to as 'AI as more than a mere tool'.

Nevertheless, it is not always simple to classify a specific case of AI model use in the first or the second category. The classification primarily serves a didactic purpose in this paper, aiming to provide a clearer understanding of the issue. In reality, however, there are partially autonomous systems or hybrid arrangements (e.g. decision-support AIs, where human oversight is weak but not entirely absent). For example, a bank uses an AI to assess loan applications and recommend approval or denial. Although a human officer formally approves the decision, in practice they rarely override the AI due to its opaque logic and institutional pressure to 'trust the model'. Also, a hospital may use AI to assist radiologists in interpreting scans. Doctors make the final diagnosis but usually follow the AI's suggestion. When the system misses a tumour that a human might have detected, the boundary between tool and autonomous decision-making becomes blurred. In all three scenarios, AI is not a 'mere calculator' (tool) nor a fully independent actor. Human oversight exists, but it is weakened by complexity and opacity (the human cannot realistically verify the AI's reasoning), organisational pressure (staff are incentivised to follow AI), or reliance patterns (the system is trusted by default). This grey zone makes it particularly difficult to apply traditional contractual liability rules.

[10] For example, see Section 5 (Services Offered) in the terms and conditions of the online trading platform AlgosOne (AlgosOne. n.d. Terms & Conditions. *https://algosone.ai/terms/*, last visited 9 August 2025). On the other hand, there are such platforms that use AI solely as a tool, assuring the decisions are made and contract performance is provided by humans. The example is Interactive Brokers, which introduced AI for generating news summaries and AI-powered commentary generator for their clients in 2024, but left the actual trading to humans. See Interactive Brokers. n.d. About the Interactive Brokers Group. *https://www.interactivebrokers.com/en/general/about/info-and-history.php*, last visited August 9, 2025.

This paper examines the application of existing rules on contractual liability in situations where a contract involving artificial intelligence is breached. The analysis focuses on how the legal consequences of non-performance may differ depending on the manner in which AI is deployed in the contractual relationship: solely as a tool or as more than a mere tool. The paper considers how the applicable legal framework determines liability, taking into account whether the given legal system requires the debtor's fault as a precondition for contractual liability, or whether liability arises objectively, irrespective of culpability. By addressing these two dimensions together, the paper seeks to clarify the extent to which traditional concepts of contractual non-performance remain adequate in governing breaches caused by the deployment of AI systems.

The aim of the paper is to examine how contractual liability applies to breaches caused by AI and evaluate four possible approaches to closing the liability gap in fault-based systems. Given the possibility of a liability gap in such legal systems, the author examines potential solutions, as well as the advances and obstacles in legal theory and practice. This research adopts a doctrinal and comparative approach. The analysis is grounded in the contract law systems of England, France, Germany, the Netherlands, Serbia, and Croatia, with the aim of examining how each addresses contractual liability in cases involving AI-related performance. The proposed approaches include: granting legal subjectivity to AI; applying the rules of agency law; operation of rules on vicarious liability or liability of an auxiliary – in the sense of the debtor's liability for the acts of auxiliaries in those legal systems that regulate such liability; and introducing an exception – strict liability in cases of the use of AI in the performance of contractual obligations *de lege ferenda*. The four identified solutions are evaluated using clear and consistent criteria: conformity with existing private law structures, fairness in risk allocation, technological feasibility, and systemic effects.

2. THE CURRENT LEGAL STATUS OF ARTIFICIAL INTELLIGENCE IN CONTRACT PERFORMANCE: A TOOL

Before analysing the rules of contractual liability applicable to the usage of AI during contract performance, one must determine the current legal status of AI-powered systems. Some authors compare AI systems to slaves and *alieni iuris* persons in Roman law, pointing out that both are objects of law rather than the subjects of law (Čerka, Grigiene, Sirbikyte 2015, 10). Others argue that AI systems are more than slaves, i.e. 'digital slaves with

superhuman abilities' (Beckers, Teubner 2021, 11). Nevertheless, the review of the literature and overview of normative efforts regarding this matter reveal that, in terms of contract performance, AI is regarded simply as a tool.

According to the leading view in jurisprudence, AI-powered systems are considered merely as tools employed by humans, i.e. by debtors (Ebers 2021, 213; Beckers, Teubner 2021, 51, 65). AI technology, in this sense, is comparable to any other instrument employed to fulfil contractual obligations, though admittedly more sophisticated in its operation. The focus lies not on the AI system itself, but on the conduct of the debtor who uses such software in performing their obligation. The debtor exercises control over the software and the outcomes it produces in this manner. This approach has also been endorsed by English courts.[11]

When it comes to AI-regulation on a supranational level, it must be noted that far greater attention has been devoted to issues of non-contractual liability arising from the use of artificial intelligence than to issues of contractual liability. For instance, there was a published proposal for a directive on adapting non-contractual civil liability rules to artificial intelligence (2022),[12] preceded by a white paper on AI (2020).[13] However, the proposed directive was withdrawn in February 2025 because there was no consensus among the Member States and stakeholders regarding the crucial provisions.[14] On the other hand, the matter on contract law when AI is involved remains largely within the domestic competence. A common feature of the analysed domestic laws is the lack of specific provisions regarding contractual liability in cases involving AI technology, leaving the matter to be governed by the general rules. These rules vary from one country to another, especially when it comes to contractual liability. Hence, it is unsurprising

[11] See *Software Solutions Partners Ltd. v, HM Customs & Excise* (2007, EWHC Admin 971, para. 67), where the judge concluded that software's role was limited to a technical function and it could not be regarded as an agent in the legal sense (Beckers, Teubner 2021, 51 fn. 31).

[12] European Commission. 2022. Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence. *https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52022PC0496*, last visited September 8, 2025.

[13] European Commission. 2020. White Paper on Artificial Intelligence: A European approach to excellence and trust. *https://commission.europa.eu/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en*, last visited September 8, 2025.

[14] Luca, Stefano De. 2025. A New Plan for Europe's Sustainable Prosperity and Competitiveness, European Parliament. *https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-ai-liability-directive*, last visited September 12, 2025.

that there have not been any attempts to regulate contractual liability and AI, given that even the proposal on non-contractual liability failed, despite that field being more harmonized.[15] Other than the provisions of the applicable legislation, when concluding contracts, the contracting parties are generally unrestricted in their agreement on risk allocation and liability issues, even when AI technology is used, since the relevant norms are dispositive.

Nevertheless, the conclusion that AI is regarded merely as a tool can only be drawn indirectly. First, UNCITRAL states that, in general, the natural person or a legal entity on whose behalf a computer was programmed *should ultimately be responsible for any message generated by the machine* (UNCITRAL 2007, 70). It is important to note that this rule applies only to automatic, not autonomous machines, i.e. only to machines that operate strictly within the limits of their pre-programmed technical framework.[16] Also, in accordance with the OECD Recommendation of the Council on Artificial Intelligence, AI users should apply continuous risk management throughout the AI system's lifecycle, in line with their role and ability to act, and adopt responsible practices to address related risks, including through cooperation with other stakeholders.[17] Finally, the EU Artificial Intelligence Act (2024) provides a set of rules that users of AI systems must follow. They are required to ensure human oversight, monitor system performance, keep relevant records, provide adequate training, and maintain transparency towards affected parties.[18] Therefore, the latter two instruments impose numerous obligations on AI technology users, yet AI remains merely a tool in their hands, which, due to its specific nature, requires special control and oversight. In the context of contractual liability, compliance or non-compliance with the imposed obligations may serve to determine whether due care has been exercised or not.

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[15] Even the EU consumer law leaves the regulation of damages to Member States, even though it regulates the other remedies. See Directive 2019/770 on certain aspects concerning contracts for the supply of digital content and digital services. *https://eur-lex.europa.eu/eli/dir/2019/770/oj/eng*, last visited August 26, 2025, Art. 14 para. 4; and Directive 2019/771 on certain aspects concerning contracts for the sale of goods. *https://eur-lex.europa.eu/eli/dir/2019/771/oj/eng*, last visited August 26, 2025, Art. 13 para. 4.

[16] See UNCITRAL 2007, 69.

[17] See principle 1.5. of Recommendation of the Council on Artificial Intelligence, *https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449*, last visited September 5, 2025.

[18] See articles 26, 27 and 50 of Artificial Intelligence Act.

This stance is completely justifiable when AI actually serves only as a tool. However, it appears inadequate in situations referred to as 'AI as more than a mere tool' (see above), since an autonomous decision-making system may behave unpredictably, from a human perspective. In such cases, the debtor has no control over the behaviour of the AI system, nor over the outcome it produces.

3. BREACH OF CONTRACT AND CONTRACTUAL LIABILITY FOR DAMAGE CAUSED BY USE OF AI IN CONTRACT PERFORMANCE

A breach of contract occurs when a debtor does not fulfil their obligation in accordance with the contract (Burrows 2016, 107). Depending on the gravity of the breach (typical of common law legal systems) or the type of breach (common in civil law legal tradition),[19] legal systems provide a range of remedies available to the creditor. One of the legal remedies available to the creditor in the event of a breach of contract, common to all legal systems, is compensation for the damage suffered. The principle of liability for damages requires that the debtor, under certain conditions, compensate the creditor for losses caused by non-performance or improper performance. These conditions vary depending on the specific legal system. In this section, the author will analyse what occurs when artificial intelligence is introduced into the equation and how this affects the rules on contractual liability.

There are three conditions required, regardless of the legal system in question. These are: a breach of contract, damage suffered by the creditor, and a causal link between the breach and the damages sustained. Furthermore, some legal systems require the fault of the debtor. Can these conditions be stretched enough to accommodate the improper performance when AI is involved? The author will separately address legal systems that establish

[19] The conditions for contractual remedies in the event of non-performance differ significantly between common law and civil law systems. Civil law jurisdictions, grounded in the Roman causal tradition, distinguish between multiple forms of non-performance, such as non-delivery, defective performance, and delay, each of whom trigger different legal consequences. Common law legal systems, by contrast, adopt a uniform concept of breach of contract. In general, every deviation from contractual terms constitutes a breach, but the available remedies vary depending on the seriousness of the breach. In English contract law in particular, termination is permitted only where a breach concerns a condition of the contract or where the breach is sufficiently serious to justify bringing the contract to an end (fundamental breach). See Vicente 2012, 186–191.

contractual liability without requiring fault and those that do require it. However, it is important to note that the distinction between fault-based and strict liability systems in contract law is far less binary than it may initially appear. The differences in practical application are often nuanced rather than categorical. For example, even legal systems traditionally classified as strict liability regimes recognize situations in which the debtor's duty is merely to exercise an adequate level of care (typically in service contracts), rather than to guarantee a specific result. Such an obligation, by its very nature, can only be subjective (see Karanikić Mirić 2024, 729). In fault-based systems, the debtor's liability may be 'stricter' in cases involving so-called generic obligations, where opportunities for exoneration are limited due to the allocation of the procurement risk. In that manner German law, which traditionally requires the debtor's fault, states that '[t]he obligor is responsible for intent and negligence if a higher or lower degree of liability neither is laid down nor is to be inferred from the other subject matter of the obligation, in particular the giving of a guarantee or the assumption of a procurement risk'.[20] It is considered that the debtor assumes the procurement risk when goods are generic (Schulze, Dannemann 2020, 405). Moreover, in Serbian law, many contracts contain a mix of result-oriented and diligence-based duties (e.g. contract of mandate).[21] Finally, even in fault-based systems the creditor does not need to prove that the debtor was at fault, as their liability is presumed until proven otherwise.

3.1. Strict Liability-based Contractual Liability Regimes

Regarding the breach, the damage and the causality, legal scholarship is not concerned with the usage of AI. The first condition for establishing the debtor's liability is the breach of an enforceable contract. Thus, the creditor has not received the performance as it was stipulated in the contract, i.e. they may not have received performance at all, or received partial, late, or defective performance. The use AI, whether it has been used 'solely as a tool' or as 'more than a mere tool' (see section two), has no bearing on the fulfilment of this requirement. In any event, the creditor will have little difficulty proving that the obligation has not been (properly) performed. Similarly, the damage suffered, as the second condition, may be proved

[20] § 276 para. 1 German Civil Code (*Bürgerliches Gesetzbuch*, BGB). *https://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html*, last visited January 28, 2026.

[21] Art. 751 Serbian Law on Contracts and Torts (*Zakon o obligacionim odnosima*, ZOO).

regardless of the usage of AI during the performance. The scope of damages in contractual liability varies depending on the particular legal system. Most legal systems limit liability to damages that were foreseeable at the time of contract formation, bearing in mind the ordinary course of things and the special risks the debtor was aware of (Andrews 2016, 324).[22] Furthermore, some legal systems further restrict the damages to material damages only, which encompasses both *damnum emergens* (actual loss) and *lucrum cessans* (loss of profit).[23] The creditor is also required to prove that the damage was suffered as a result of non-performance, late or defective performance of the obligation (causality). In other words, it is necessary that the damage has occurred as a materialization of a risk within the debtor's sphere of control. Since AI is generally regarded as merely an instrument employed by the debtor, the creditor need not distinguish whether the harm was caused by an autonomous decision of the AI system or by the debtor's own conduct. Merely linking the suffered damage and the non-performance – proving that the debtor's breach is the cause of the creditor's loss – is sufficient (Andrews 2016, 323).

Whether or not fault is required for the debtor's liability, non-performance must be attributed to the debtor, meaning that the debtor is the one who bears the risk of it (Smiths 2021, 211). Attribution is often defined in negative terms, by listing situations in which non-performance cannot be attributed to the debtor. As stated in English jurisprudence, non-performance cannot be attributed to debtor, if the debtor's liability is explicitly excluded in general or for specific situations (exception or exclusion clause), if there is a fault on the part of the creditor or the creditor has waived their right to complain about the breach (Andrews 2015, 441; Andrews 2016, 266). Unlike in English law, where exemption from liability due to force majeure must be expressly stipulated in the contract, continental legal systems release

[22] This is often named as the 'remoteness of the damage' (see Andrews 2016, 324). The rule was set in the *Hadley v. Baxendale* (1854) case. However, this limitation does not seem suitable for the usage of AI technology. In that sense, Janssen (2022, 63, 65) states that from the perspective of the debtor, foreseeability is obscured by the unpredictability of machine learning, especially due to the diversity of possible uses and circumstances in which AI is applied. Unlike traditional tools, AI systems may generate outcomes that exceed or deviate from the expectations initially held by the contracting party. As a result, the boundary between foreseeable and unforeseeable harm becomes blurred, potentially undermining the core function of foreseeability as a limiting criterion for contractual liability.

[23] There are states where the starting point is that all damage is recoverable (e.g. France, Belgium, Slovenia, Hungary, Spain, Luxembourg) and states where the starting point is that the recovery of immaterial damage has to be explicitly provided by law (e.g. Germany, Austria, Poland, Italy, the Netherlands, the Nordic countries, Serbia) (European Commission 2022, 164–165).

the debtor from liability in cases of force majeure by operation of law (see Smiths 2021, 211).[24] The issue to be examined is whether such grounds for exemption may apply to cases of non-performance due to the use of artificial intelligence.

In the scenario where AI-usage had contributed to the breach, the contractual parties may exclude liability for damage caused by AI in general or for a certain kind of damage (e.g. damage arising from the malfunction of the AI) or limit it specifically. The ensuing question is whether those types of clauses are valid. The answer again depends on the domestic legal system in question, since neither the Digital Content and Services Directive[25] nor the Sales of Goods Directive[26] regulates the right to damages (Ebers 2021, 213).[27] Neither common law nor civil law systems permit parties to exclude or limit liability for intentional misconduct or gross negligence (Andrews 2011, 425).[28] Beyond this common foundation, civil law jurisdictions often introduce additional restrictions on limitation of liability clauses, which differ from state to state. For instance, under French contract law, a debtor may not exclude or reduce liability for breach of an essential contractual obligation, for causing bodily injury, nor in contracts concluded between a consumer and a professional (see Bénabent 2017, 336–337).[29] Similarly, Swiss law empowers courts to invalidate a limitation of liability clause even in cases of ordinary negligence if the creditor is in a position of subordination to the debtor, or where the debtor's activities are subject to special state

[24] See, for instance, Art. 1231–1 French Code Civil or Art. 263 Serbian Law on Contracts and Torts.

[25] Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services. *https://eur-lex.europa.eu/eli/dir/2019/770/oj/eng*, last visited August 26, 2025.

[26] Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC. *https://eur-lex.europa.eu/eli/dir/2019/771/oj/eng*, last visited August 26, 2025.

[27] On the other hand, the Digital Content and Services Directive 2019/770 (Art. 14 para. 4) and the Sales of Goods Directive 2019/771 (Art. 13 para. 4) do regulate the other remedies: repair or replacement, price reduction or termination of contract (Ebers 2022, 37).

[28] Many European civil law jurisdictions expressly prohibit contractual clauses that exclude or limit liability for intent (and gross negligence), rendering such provisions as null and void; for example, Germany (§ 276 para. 3 BGB), Switzerland (Art. 100 para. 1 Code of Obligations), and Serbia (Art. 265 para. 1 Law on Contracts and Torts).

[29] Art. 1170 Code Civil.

regulation.[30] In English law, the primary focus is on whether the exclusion clause has been properly incorporated into the contract and expressed clearly.[31] Additional constraints may follow from the Unfair Contract Terms Directive 93/13, whose Annex, although initially seen as merely illustrative, has been recognized by the Court of Justice of the European Union (CJEU) as a key reference point in judicial assessment (Ebers 2021, 213).[32]

The user (in this case the creditor) may be negligent in the application of an AI system, for example by using it in an inappropriate environment, under unfavourable conditions, or contrary to the instructions (Geistfeld *et al.* 2023, 27). Such a fault on the creditor's part would discharge the debtor from liability. For example, if the creditor inputs incomplete and outdated data into an AI-based risk-assessment tool and blindly relies on its output, any resulting damage cannot be attributed to the debtor; the creditor using AI technology contrary to its purpose would lead to the same outcome.

Force majeure is usually defined as an event characterized by three features: it is unavoidable, unforeseeable, and external (Bénabent 2017, 286). This paper argues that under no circumstances should the deficiency in the AI system be considered force majeure, neither when it is used 'solely as a tool' nor when used as 'more than the mere tool'. Even though it concerns a complex and autonomous system, AI is internal to the debtor (a tool they use in the fulfilment of their contractual obligations) and not external to them. Accordingly, the condition of an external cause is inherently negated. Therefore, defective AI technology may not be regarded as force majeure.[33]

Hence, contractual liability for the damage caused to the creditor through the use of AI-based autonomous technology can be attributed to the debtor in the legal systems where contractual liability is regarded as a strict liability. Strict liability governs the machine's functioning and attaches to the person it serves, regardless of whether the specific conduct was anticipated or envisaged (Čerka, Grigiene, Sirbikyte 2015, 10). The conditions for the debtor's liability are met, the liability may be attributed to them, and force majeure cannot be

30 Arts. 100 and 101 Swiss Code of Obligations.

31 The courts first examine whether the party relying on the clause took reasonable steps to draw it to the other party's attention. If incorporation is established, the clause is interpreted according to ordinary rules of construction. Provided that the wording is sufficiently clear and unambiguous, liability may in principle be excluded even for negligence or for serious breaches of contract (Andrews 2015, 420–433).

32 Over time, the CJEU has elaborated the Annex's abstract criteria, thereby laying the groundwork for Europe-wide standards on the fairness of liability-limiting clauses for AI systems (Ebers 2021, 213–214).

33 See Janssen 2022, 65.

deemed to have occurred. This is typical of common law legal systems. Also, many European legislatures do not require the debtor's fault (e.g. French law for *obligation de résultat*,[34] Serbian law,[35] Croatian law[36]).

3.2. Fault-based Contractual Liability Regimes

When AI is employed in the performance of a contract, establishing a debtor's fault may prove difficult, if not impossible. Courts will assess whether the standard of due care has been met, which implies that the debtor employed appropriate AI technology and used it in a proper and responsible manner. Nonetheless, certain difficulties may arise. First, the AI-powered system may have malfunctioned during the performance and thus caused damage to the creditor. Even when operating in accordance with its design, the AI system may nonetheless generate an unintended outcome due to its capacity for self-learning and adapting its behaviour to novel circumstances (Geistfeld *et al*. 2023, 27).[37] Moreover, AI systems that are integrated into hardware may cause damage because of defects inherent to the hardware or owing to the features of the AI that triggered hardware failure (Geistfeld *et al*. 2023, 27). Also, the implementation of AI systems often relies on interaction with other technologies, frequently AI-based themselves, which drastically increases the difficulty of identifying the actual cause of damage (Geistfeld *et al*. 2023, 28). In all these situations the debtor used the AI technology properly and

[34] French jurisprudence divides the obligations to *obligations de moyen* and *obligations de résultat*. The first category requires the debtor to undertake every effort that a reasonable person in such circumstances would be expected to make, while the latter obliges the debtor to achieve a specific result, namely the one agreed upon in the contract (Smiths 2021, 213). When it comes to *obligations de moyen*, the debtor is liable only if the creditor proves that they did not undertake such an effort (the burden of proof of the debtor's fault is on the creditor), while the debtor is presumably liable if they failed to fulfil the *obligations de résultat* (the debtor bears the burden of proving that they are free of fault) (see Benabent 2017, 321–322). However, it is not always east to classify the obligation into one of these categories. There are the so called 'relaxed *obligations de résultat*', where the debtor can prove the absence of his fault and thus escape the liability, as well as '*obligations de moyen renforcée*' which require a higher level of effort (see DiMatteo *et al*. 2025, 565).

[35] See Karanikić Mirić 2016, 46–64.

[36] See Nikšić 2022.

[37] Geistfeld *et al*. (2023, 26–28) discusses these difficulties in the context of causation, but I would argue that this is not a matter of causation, but rather of the absence of the debtor's fault.

indeed can prove it (Beckers, Teubner 2021, 6). This list is not exhaustive, but it shows some of the possible situations where the creditor did not receive proper performance, yet the debtor exercised reasonable care.

In these scenarios, we should distinguish between situations where AI was used 'solely as a tool' and when it was utilized as 'more than a mere tool'. If AI was used merely as a tool, the debtor retained (or at least should have retained) full control of the system, with access to all its decisions and the ability to promptly influence or modify them. Hence, they should have noticed the malfunction and prevented the damage in accordance with the required standard of care. The courts will examine whether the choice of instrument itself was reasonable. Therefore, the creditor will be able to prove the negligence on the debtor's part.[38] By contrast, if the debtor could not maintain supervision of AI and had no insight into its decision-making process or the possibility to intervene, their fault cannot be proved. This is the scenario for AI as 'more than a mere tool' usage. In this case, not even the lowest degree of fault–negligence on the part of the debtor can be established, since the act of performance was carried out by the AI-powered system. For creditors, proving fault or even causation in cases of AI malfunction is often practically impossible, as they lack access to the necessary technical information. This evidentiary asymmetry is rarely acknowledged explicitly, yet it lies at the very core of the existing liability gap. Consequently, the creditor is left without compensation and the *casum sentit dominus* principle applies (Beckers, Teubner 2021, 7). The conditions for establishing the debtor's liability are not met and the AI system is not a legal subject. Thus, neither of them is responsible and therefore a liability gap arises.

This reflects the approach taken in some civil law jurisdictions rooted in German legal tradition: a debtor can avoid responsibility by proving that they acted with reasonable care under the given circumstances (Reimann, Zimmerman 2006, 922). Under German law, a breach (*Pflichtverletzung*) must be committed intentionally or negligently in order for the creditor to claim

[38] Moreover, it may even be possible to establish gross negligence (e.g. a trainer creates a training plan using AI that includes exercises the client should not perform because they had back surgery, or a marketing agency, without verification, uses AI and sends the client ads with prohibited claims, causing serious harm). On the other hand, it is nearly impossible to prove intent because the debtor can argue that the non-performance was a matter of oversight or misplaced reliance on AI, rather than a deliberate intent to harm the creditor.

damages (Smiths 2021, 213).[39] In French law, in the case of *obligations de moyens*, the debtor is liable for damages solely when they do not display the diligence and best efforts reasonably required of them (Smiths 2021, 213).

4. ADDRESSING THE LIABILITY GAP IN FAULT-BASED SYSTEMS WHEN AI IS USED AS 'MORE THAN A MERE TOOL'

In this section, the author examines how the liability gap could be overcome in cases where, cumulatively: 1) a breach of contract has occurred; 2) AI technology was used in performing the obligation; 3) AI technology acted autonomously in a way that the debtor had no control over it; 4) the legal system in question requires the debtor's fault as a condition for liability; and 5) the debtor can prove that the AI-powered system had been used correctly. For example, company A undertakes to carry out automated safety testing of electronic components for company B using an AI-based inspection system. The system autonomously determines whether each component meets the agreed safety and technical specifications. However, it incorrectly classifies certain defective components as compliant, resulting in a breach of contract. Company A can show that the system was properly configured, regularly maintained, and used with due care, and that the error was attributable solely to the autonomous operation of the AI, not to any fault on its part.

This question of liability in such a case, both of considerable theoretical and increasing practical importance, may be resolved using several possible solutions. In this section, the author will lay out each of these approaches, providing the arguments both in their favour and against them.

4.1. AI as a Legal Subject

The first possible solution is to attribute the acts of the AI to itself. In order to do so, legal subjectivity must be granted to autonomous AI-powered systems, so that the responsibility may be attributed to them. Namely, to be recognized as a subject of a legal relationship, an entity must be a legal subject (*Rechtsubject*, *personne juridique*). Legal subjectivity (personhood) refers to the status of being a subject of rights and duties. Typically, legal subjects are understood to be natural and legal persons, though some

[39] See §276 and § 280 BGB.

scholars also include animals (see Vodinelić 2020, 333). Applicable law does not recognize AI-powered systems as legal subjects, regardless of their autonomy in terms of decision-making. The possibility of a different solution was discussed by Lawrence Solum more than three decades ago. At this time, the matter was solely theoretical, since no AI model had the capacity that would justify serious concern about the issue of legal personhood (Solum 1992, 1231). Solum (1992, 1258), among other things, points out that AI lacks 'some critical component of personhood, for example souls, consciousness, intentionality, or feelings', and it will forever remain nothing more than human property. Because of a lack of consciousness on its part, it cannot make a legally valid declaration of intent. Although the AI models have gained autonomy in terms of making decisions and have been developing rapidly, modern scholarship majorly shares the same view as Solum.[40] However, Beckers and Teubner (2021, 58) argue that, although AI technology lacks consciousness, it may nonetheless be possible to recognize its digital equivalent. Nevertheless, if AI was granted legal subjectivity, an additional set of issues would emerge, especially when it comes to its appearance before a court of law. Regardless of whether the AI model would be a plaintiff or a defendant, it cannot represent itself in court but must be represented by humans instead (Koops, Hildebrandt, Jaquet-Chiffelle 2010, 514). Since it possesses no assets, an AI-powered system would have to be insured against liability (Solum 1992, 1245). However, this would relieve manufacturers and users of responsibility, thereby creating a moral hazard (Beckers, Treubner 2021, 11). Additionally, it is impossible to prove that an AI system had acted with intent, and therefore it cannot be held liable on that basis in both civil and criminal proceedings (Koops, Hildebrandt, Jaquet-Chiffelle 2010, 514). Considering all the concerns outlined above, it appears that, at present time, there are no grounds to confer legal capacity upon AI technology *de lege ferenda*, as is the case with natural persons and legal entities, regardless of its degree of autonomy.

4.2. Application of Agency Law

In many cases, AI-powered models operate on behalf of humans, in a manner akin to agents. An agent is usually defined as a person who has agreed to act on the principal's behalf (Peel 2015, 16–001; Dalley 2011, 500). For example, in financial markets, an AI trading system may be authorized to buy and sell securities on behalf of an investor, thereby acting as an

[40] See Koops, Hildebrandt, Jaquet-Chiffelle 2010; Čerka, Grigiene, Sirbikyte 2015.

agent, while all legal effects of the transactions are attributed directly to the investor. The human principal determines the scope of authority, objective, instructions and means, whereas the AI system operates on their account (Koops, Hildebrandt, Jaquet-Chiffelle 2010, 512). Thus, can AI be regarded as an agent? Some scholars argue that this should be the proper qualification, especially in the context of concluding a contract by means of an AI system acting in an autonomous capacity (see Beckers, Teubner 2021, 54–55).

The precondition for agency is legal subjectivity. Thus, the prerequisite for such legal qualification would be to grant a narrow legal subjectivity to an autonomous AI-powered system (see Beckers, Teubner 2021, 55–57). The objections against granting legal subjectivity to AI systems stated above apply here as well, even for the narrower scope. Treitel (Peel 2015, 16–013) states that the agent needs to be capable of consenting to act as an agent. Even if some form of legal capacity were to be recognized, it would remain doubtful how AI could satisfy this requirement. Namely, whether it could genuinely refuse to consent, and on what such a possibility would ultimately depend. A similar problem arises with defects of consent, which must be assessed at the level of the AI system, namely whether the declared will was founded on a mistaken perception of reality (Appelmans, Herbosch, Verheye 2021, 347). If the principal (the AI, in this case) acts outside the scope of the contract, it would generally be liable for damages caused to a *bona fidae* third party, yet the problem persists, since the AI lacks assets from which compensation could be paid (Appelmans, Herbosch, Verheye 2021, 350–351). Furthermore, agency presupposes the capacity to make choices guided by moral judgment and responsibility, which AI systems, unlike natural persons, do not possess. Above all, the idea of qualifying AI as an agent does not really solve the problems of contract performance and breach of contract. Agency rules are primarily concerned with the conclusion of contracts – the binding of the principal through the acts of the agent and thus concern the legal acts. Contrarily, the performance of obligations is the material act. The law of agency does not extend to this stage and therefore offers little guidance in terms of liability for breach of contract. Therefore, the agency rules (e.g. unauthorized agency, acting beyond the scope of authority) are not suitable. The approach that software cannot be regarded as an agent (not even in the contract formation) has been affirmed by the German courts, holding that a malfunction in software is to be equated with an error made directly by the person controlling it and considered indistinguishable from it.[41]

[41] A company sold computers through its website, but due to a software malfunction a laptop was displayed at price EUR 245 instead of EUR 2,650. A customer ordered the laptop at the lower price, received automatic email confirmation, and the product was delivered to him. The seller later sued him and

4.3. AI as an Auxiliary

Some legal systems (e.g. French, German and Swiss law) recognize the concept of liability for auxiliaries (*auxiliaire*, *Erfüllungsgehilfe*, *Hilfsperson*). An auxiliary is a person whom the debtor engages in the performance of the obligation. They are chosen by the debtor and act in accordance with the debtor's instructions and under their control. For example, French courts hold that a debtor who uses an auxiliary for performance remains responsible for the auxiliary's misconduct (*faute de l'auxiliaire*).[42] Similarly, the German Civil Code provides that the debtor is liable for the fault of a *Hilfsperson* to the same extent as for his own fault, thereby ensuring that any breach committed by a person engaged in the performance of the obligation is attributed directly to the debtor.[43] The same approach is adopted by the Swiss law.[44] Hence, any liability incurred by the auxiliary is imputed to the debtor. From the creditor's perspective, the auxiliary is not considered a third party, given the absence of any contractual relationship between them (Benabent 2017, 328). The creditor cannot be put in a worse position because their obligation was fulfilled by the auxiliary instead of the debtor. In the absence of an express contractual rule, other legal systems derive similar principles from the inherent principles of the law of obligations. There is no 'transfer of liability' to sub-debtor, but the 'original' debtor remains liable to the creditor for the breach occurred (Peel 2015, 17–012).[45]

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declared avoidance of the contract, arguing the price resulted from a software error. The courts held the seller was entitled to avoid the contract on the grounds of an error in declaration, treating the software malfunction as equivalent to a human mistake or as a transmission error through a technical medium (§ 120 BGB). This reasoning underscores that AI functions merely as an instrument of execution, not as an agent, and that the will and liability remain solely with the human. See Federal Court of Justice, judgment of 26 January 2005 – VIII ZR 79/04. *https://lorenz.userweb.mwn.de/urteile/viiizr79_04.htm*, last visited August 30, 2025.

42 See Cour de Cassation, Chambre mixte, 22 April 2005, 02–18.326.

43 § 278 BGB. However, the difference when the debtor uses the auxiliary in performing the obligation is that they may be released in advance from liability for (the auxiliary's) intent, which is not possible when they perform the obligation by themselves (compare § 276 BGB and second sentence in § 278 BGB).

44 A person who delegates the performance of an obligation or the exercise of a right arising from a contractual obligation to an associate, such as a member of their household or an employee, is liable to the other party for any damage the associate causes in carrying out such tasks, even if their delegation was entirely authorised (Art. 101 para. 1 of Federal Act on the Amendment of the Swiss Civil Code (Part Five: The Code of Obligations).

45 In the case *Stewart v Reavell's Garage* (1952), the court decided that even though the car owner had agreed to the work being done by a sub-contractor, the defendants were still liable for the poor workmanship. Their contractual liability

Can the AI-powered system be regarded as the auxiliary (sub-contractor)? Some authors argue that the usage of AI and human assistants during contract performance must lead to the same legal consequences, because the damage caused by both falls within the debtor's sphere of control (Janssen 2022, 70–71). A different solution (i.e. the exemption of the debtor from liability when using AI technology) would be unjust, because of the privileging of debtors who use AI technology instead of human helpers (Janssen 2022, 70–71). However, similarly to the reasoning applied in relation to the agent, owing to the absence of legal personhood, AI cannot qualify as an auxiliary, since it is not a subject of law.[46] It has no legal capacity to act as one, as such liability arises if the human assistant breaches the contract (Beckers, Teubner 2024, 6). Similarly to the agency law approach, this obstacle may be overcome by granting AI-powered models (narrow) legal capacity, as argued above. Nevertheless, all the applicable rules and legal theory regulating the liability of auxiliary lead to the sole liability of the debtor themself. Thus, even if we qualify an autonomous AI system as an auxiliary, we obtain no further insight beyond the prevailing view that regards AI merely as a tool, since the legal effects remain the same.

4.4. Imposing Strict Liability if AI technology Was Used for Performance

Finally, the liability gap in legal systems that require the debtor's fault could be resolved by introducing a strict liability exception for the use of AI in contract performance. In addition to closing the existing liability gap, this would ensure equal treatment between the use of human assistants and AI and provide greater legal certainty for creditors, while encouraging operators to exercise due care when employing AI systems. Nevertheless, appropriate exceptions should be introduced to mitigate potential excessive rigidity of strict liability solutions.[47]

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was not transferred, and the sub-contractor had no contractual liability towards the owner (Peel 2015, 17–012).

[46] There are German scholars who state that AI systems shall be regarded as agents, e.g. Phillip Hacker, Jan-Erik Schirmer, Gunther Teubner (Ebers 2021, 213 ff. 61).

[47] It has already been pointed out why the force majeure exception is not applicable here (see above).

The Dutch Civil Code prescribes an interesting solution regarding the usage of objects (things) during contract performance. 'Where, in the performance of an obligation, a thing is used that appears to be unfit for that purpose, the non-performance which might result from this, is attributable to the debtor, unless this would be unreasonable in view of the content and necessary implication of the juridical act from which the obligation arises, the generally accepted principles (common opinion) and other circumstances of the situation'.[48] Hence, the rule imposes strict liability if the debtor used an unsuitable object for contract performance and breached the contract because of its unsuitability, but this rule is followed by noteworthy exceptions (Graaf, Wuisman 2022, 268). In the context of a breach of contract involving autonomous AI technology, this rule may apply when the AI itself is the 'object' employed, even though it is not literally an object, but functionally equivalent to one (Graaf, Wuisman 2022, 272–274).[49] The prescribed exceptions also seem reasonable when it comes to the debtor's liability and AI malfunction. The debtor is liable for breach of contract when they used AI technology during the contract performance, regardless of the implied standard of care (strict liability). The first exception should be applied when the debtor had no freedom to choose whether to use AI, or when the AI was provided by the creditor. For instance, if a supplier (debtor) is forced to use a state-mandated AI system to deliver a service, and the system fails, it would be unfair to claim that the supplier breached the contract, because the use of AI was not their choice. Furthermore, an additional requirement is the debtor's lack of control over the system during performance, in the sense that they were unable to intervene in its decision-making process. The second exception regards common opinions, as views that are shared by the majority of society, which serve as an additional corrective and protect the debtor in cases where, according to general perception, it would be unfair for them to bear the risk of non-performance under the precise circumstances (Graaf, Wuisman 2022, 268–269).

Introducing such an exception in legal systems that base contractual liability on the debtor's fault would resolve the issue of the liability gap arising from the use of AI technology. As a rule, the debtor would be liable, while exceptions would allow release from liability in situations where it would be unfair to impose the risk of non-performance, whether because the debtor had no choice but to use the given AI model and had no control over it,

[48] Art. 6:77 Dutch Civil Code. *http://www.dutchcivillaw.com/legislation/dcctitle6611aa.htm#sec0619*, last visited January 30, 2026.

[49] It cannot be defined as an object because the object is necessarily under human control, and autonomous AI is often not.

or because it would otherwise be unjust to impose liability, considering the general societal principles. This solution addresses the liability gap without requiring interference with the fundamental principles of civil law, such as the rules on legal capacity. Moreover, AI is not inappropriately located within the framework of another legal institution, rather, it remains a tool in the hands of the debtor, for which the debtor is liable, except in cases where such liability would be unreasonable.

Furthermore, the new EU Product Liability Directive[50] illustrates a broader European shift towards strict liability in situations involving autonomous decision-making. According to this directive, manufacturers may be held strictly liable for damage caused by defective products incorporating AI-based components, without the need for the injured party to prove fault.[51] While this reform primarily concerns product liability rather than contractual liability, it reflects a normative trend in EU law aimed at addressing the specific risks associated with autonomous and unpredictable behaviour of AI systems. This trajectory reinforces the argument that an exception introducing strict contractual liability for AI-related breaches could be viewed as consistent with the developing European legal framework.

On the other hand, imposing strict liability is not costless. It may over-deter the use of beneficial AI technologies, create unfair burdens on small debtors, and shift costs inefficiently. Parties might therefore avoid using innovative AI systems out of fear of excessive risk and liability, which could slow down technological progress in the long run. However, the introduction of strict liability may at the same time encourage contracting parties to implement adequate preventive, safety, and monitoring mechanisms in order to minimize AI malfunctions and detect them as early as possible. Moreover, strict liability ensures that responsibility rests with the party who operates, supervises, and benefits from the use of the AI system – *cuius commodum eius damnum* (in this context the debtor) (Karanikić Mirić 2016, 37–38). After all, the use of AI systems inherently generates an increased risk of harm, which justifies the imposition of strict liability.

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[50] Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC. *https://eur-lex.europa.eu/eli/dir/2024/2853/oj/eng*, last visited December 7, 2025.

[51] See Directive (EU) 2024/2853 Recitals 2, 6, 9, 13.

5. CONCLUSION

Despite the rapid advancement of AI technology, the law has yet to keep pace, particularly regarding the deployment of AI in the performance of contractual obligations. The defining feature of an AI system – its autonomy, e.g. its capacity to make decisions independently rather than merely following predetermined instructions – seems to be overlooked by legislators for now. Its additional aspects, such as unpredictability, opacity (the 'black box' problem), and the impossibility of fully monitoring the inputs as well as the outputs also complicates the application of liability rules. By contrast, AI technology in this context is treated merely as a tool, a means in the hands of the debtor over which they exercise full control and which they are expected to operate in line with their will and expertise. The use of AI in a manner where the debtor retains full control over performance throughout the process, makes all decisions, and determines how to handle AI-generated information represents only one possible way of employing AI for the fulfilment of contractual obligations ('AI solely as a tool'). AI technology, on the other hand, can also be employed in performance in a manner where the system itself makes decisions, with the debtor having neither full insight into the process nor control over the output ('AI as more than a mere tool'). Regardless of the scope or manner of AI use, a breach of contract may occur because of a malfunction of the system, its inadequate adjustment to the circumstances, or something else. However, the latter situation is particularly problematic in light of the existing legal framework.

EU law so far does not regulate contractual liability in the context of AI technology, nor does it provide a model for national legislators to follow – not even through soft-law instruments. Instead, the domestic contract law is applied. Depending on whether fault is required as a basis for contractual liability, legal systems can be classified as those that impose strict liability and those that follow a fault-based model. For the first group of systems, there is no difficulty in applying the existing rules to situations where a contractual obligation is breached using AI technology. For the creditor, the burden of proving the breach, the damage suffered, and the causal link remains unaffected by the fact that AI technology was involved. However, the problem arises in the second group of legal systems. In cases where the breach of contract results from a malfunction of the autonomous AI system, the debtor can effectively defend themselves by arguing that they acted with due care. This would especially be the case where AI technology is employed as more than a mere tool, since in such instances the debtor does not exercise full control over the system. It is in such circumstances that the liability gap emerges: the debtor is not liable for damage that occurred, AI is not a legal subject, but a mere tool, and the creditor has no contractual

relationship with the AI manufacturer and is often not even aware of which exact technology was employed. As a result, the principle of *casum sentit dominus* applies. The liability gap is therefore not merely conceptual, i.e. arising from the fact that AI systems are not legal subjects, but also profoundly practical, reflected in the difficulty for the creditor to prove fault, the pronounced information asymmetry, and the lack of contractual privity with AI developers and manufacturers.

It should be noted that contract law already contains mechanisms capable of extending liability, such as the duty to select appropriate instruments or tools, the principle of foreseeability of malfunction, and contractual risk allocation. Nonetheless, these mechanisms alone can be insufficient, bearing in mind the mentioned autonomy, opacity and unpredictability of such technologies. Even the most diligent parties may be unable to fully evaluate the reliability or potential risks of complex AI systems. The principle of foreseeability becomes ineffective in the context of AI, as malfunctions may stem from inherently unpredictable, self-learning processes that operate beyond human understanding or control. Contractual risk allocation is left to the parties' discretion rather than being legally prescribed. Moreover, the technical uncertainty surrounding AI makes it difficult to identify and allocate risks *ex ante*, especially if the creditor is not familiar with the technology.

The liability gap that arises under the circumstances explained above could be resolved in several ways. The first is to grant legal subjectivity to autonomous AI systems. This way, actions performed by such systems could be attributed to them, and AI models could also be held liable for the damage, which would in turn require them to be insured. However, there are numerous theoretical and practical obstacles: AI lacks genuine will, consciousness, and emotions, difficulties arise regarding its representation before the courts, and such a solution would also create moral hazard on the part of the debtor (as well as the manufacturer). Another option would be to apply the rules of agency law, given that AI acts on behalf of the person who employs it. Yet this approach once again encounters the problem of the absence of genuine will, which raises the issue of AI's consent. Overcoming this difficulty would require granting AI at least a limited form of legal capacity, thereby triggering the aforementioned challenges. Moreover, since the performance of a contractual obligation is a material rather than a legal act, agency law does not appear to be the most suitable framework. The third solution would be to treat an AI system as an auxiliary. This solution would likewise require granting AI at least a limited legal capacity, yet in substance it produces the same effect as treating AI merely as a tool, since any other solution would unjustly favour AI technology over human auxiliaries. Finally, the fourth option, which appears least problematic from both a theoretical and practical standpoint, is to

establish an exception whereby the debtor incurs strict liability if autonomous AI technology has been employed in the performance of the obligation. Such a solution necessarily entails the introduction of exceptions. Dutch law could serve as a model, as its norms provide the release of the debtor from liability where they had no choice but to employ a particular AI technology, or where imposing liability would, in view of common opinion and the particular circumstances, be considered unfair.

Nevertheless, it is certain that the law will continue to evolve in the direction of addressing peculiarities that AI technologies introduce into contract law, including, among others, the existing liability gap. Recent EU initiatives, such as the AI Act and the reform of the Product Liability Directive, are likely to influence the interpretation and adaptation of domestic contract law. These instruments may serve as a reference point for redefining standards of diligence, risk allocation, and accountability in contractual relationships involving AI.

LITERATURE

[1] Andrews, Neil. 2015. *Contract Law*, 2nd ed. Cambridge: Cambridge University Press.

[2] Andrews, Neil. 2016. *Contract Rules: Decoding English Contract Law*. Cambridge, Antwerp, Portland: Intersentia.

[3] Appelmans, Alexander, Maarten Herbosch, Benjamin Verheye. 2021. AI in Belgian Contract Law: Disruptive Challenge or Business as Usual? 335–358 in *Artificial Intelligence and the Law*, edited by Jan De Bruyne and Cedric Vanleenhove. Gent: Centrum Voor Verbintenissen-En Goederenrecht; Cambridge, Antwerp, Portland: Intersentia.

[4] Beckers, Anna, Teubner, Gunther. 2021. *Three Liability Regimes for Artificial Intelligence: Algorithmic Actants, Hybrids, Crowds*. Oxford: Hart Publishing.

[5] Bénabent, Alain. 2017. *Droit des obligations*, 16th ed. Paris: LGDJ.

[6] Burrows, Andrew. 2016. *A Restatement of the English Law of Contract*. Oxford: Oxford University Press.

[7] Dalley, Paula J. 3/2011. A theory of agency law. *University of Pittsburgh Law Review* 72: 495–547.

[8] DiMatteo, Larry, Marta Infantino, Jingen Wang, Sergio Long Garcia. 2025. Role of Effort in Contract Performance: A Comparative Analysis. *Tulane Journal of International and Comparative Law* 33: 555–614.

[9] Ebers, Martin. 2021. Liability for Artificial Intelligence and EU Consumer Law. *Journal of Intellectual Property, Information Technology and Electronic Commerce Law* 12: 204–220.

[10] Ebers, Martin, Cristina Poncibò, Mimi Zou. 2022. *Preface.* v–ix in *Contracting and Contract Law in the Age of Artificial Intelligence*, edited by Martin Ebers, Cristina Poncibò, Mimi Zou. Oxford, New York, Dublin: Hart Publishing.

[11] Ebers, Martin. 2022. Artificial Intelligence, Contracting and Contract Law: An Introduction. 19–40 in *Contracting and Contract Law in the Age of Artificial Intelligence*, edited by Martin Ebers, Cristina Poncibò, Mimi Zou. Oxford, New York, Dublin: Hart Publishing.

[12] European Commission. 2022. *Impact Assessment Report on the Proposal for an Artificial Intelligence Liability Directive*. Brussels: European Commission. *https://commission.europa.eu/document/download/a25ea208–9a1d-483b-ab71-bcd1905e9000_en?filename=1_4_197608_impact_asse_dir_ai_en.pdf*, last visited September 12, 2025.

[13] Geistfeld, Mark A., Ernst Karner, Bernhard A. Koch, Christiane Wendehorst. 2023. *Civil Liability for Artificial Intelligence and Software*. Berlin, Boston: De Gruyter.

[14] Graaf, Tycho J., Iris S. Wuisman. 2022. Contractual Liability for the Use of AI under Dutch Law and EU Legislative Proposals. 259–277 in *Law and Artificial Intelligence*, edited by Bart Custers and Eduard Fosch-Villaronga. The Hague: T.M.C. Asser Press.

[15] Janssen, André. 2022. AI and Contract Performance. 59–73 in *The Cambridge Handbook of Artificial Intelligence*, edited by Larry A. DiMatteo, Cristina Poncibò and Michel Cannarsa. Cambridge: Cambridge University Press.

[16] Karanikić Mirić, Marija. 2024. *Obligaciono pravo*. Belgrade: Službeni glasnik.

[17] Karanikić Mirić, Marija. 2016. *Objektivna odgovornost za štetu*. Belgrade: Službeni glasnik.

[18] Koops, Bert-Jaap, Mireille Hildebrandt, David-Olivier Jaquet-Chiffelle. 2/2010. Bridging the Accountability Gap: Rights for New Entities in the Information Society? *Minnesota Journal of Law, Science & Technology* 11: 497–561.

[19] Krauss, Patrick. 2024. *Artificial Intelligence and Brain Research*. Berlin, Heidelberg: Springer.

[20] Nikšić, Saša. 2022. Krivnja kod ugovorne odgovornosti za štetu. 193–216 in *Hrvatsko obvezno pravo u poredbenopravnom kontekstu: Petnaest godina Zakona o obveznim odnosima*, edited by Ivan Tot and Zvonimir Slakoper. Zagreb: Ekonomski fakultet Sveučilišta u Zagrebu.

[21] Peel, Edwin, ed. 2015. *Treitel on the Law of Contract*, 14th ed. London: Sweet & Maxwell.

[22] Reimann, Mathias, Reinhard Zimmermann (eds.). 2006. *The Oxford Handbook of Comparative Law*. Oxford: Oxford University Press.

[23] Smiths, Jan M. 2021. *Contract Law: A Comparative Introduction*, 3rd ed. Cheltenham: Edward Elgar.

[24] Solanki, Kinnari. 3/2023. Artificial Intelligence in Contract Law. *Journal of Legal Research and Juridical Sciences* 2: 1138–1147.

[25] Solum, Lawrence B. 4/1992. Legal Personhood for Artificial Intelligences. *North Carolina Law Review* 70: 1231–1287.

[26] Schulze, Reiner, Gerhard Dannemann (eds.). 2020. *German Civil Code: article-by-article commentary*, Books 1–3: §§ 1–1296. Munich: C. G. Beck.

[27] United Nations Commission on International Trade Law (UNCITRAL). 2007. *United Nations Convention on the Use of Electronic Communications in International Contracts*. Vienna: UNCITRAL. *https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/06–57452_ebook.pdf*, last visited September 5, 2025.

[28] Vicente, Dário Moura. 2021. *Comparative Law of Obligations*. Cheltenham: Edward Elgar Publishing.

[29] Vodinelić, Vladimir V. 2020. *Građansko pravo: Uvod u pravo i opšti deo građanskog prava*. Belgrade: Pravni fakultet Univerziteta Union.

[30] Vujaklija, Milan. 1996. Leksikon stranih reči i izraza. Belgrade: Prosveta.

[31] Čerka Paulius, Jurita Grigiene, Gintare Sirbikyte. 3/2015. Liability for damages caused by artificial intelligence. *Computer Law & Security Review* 31: 376–389.

[32] Stanford Institute for Human-Centered Artificial Intelligence (HAI). 2025. *Artificial Intelligence Index Report 2025*. *https://hai.stanford.edu/assets/files/hai_ai_index_report_2025.pdf*, last visited December 3, 2025.

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