



**The Journal of Robotics,
Artificial Intelligence & Law**

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Everything Is Not *Terminator* Defining AI in Contracts

John Frank Weaver*

It is an open secret in the artificial intelligence (“AI”) field that there is no widely accepted definition of “artificial intelligence.”¹ For example, Stuart Russell and Peter Norvig present eight different definitions of AI organized into four categories, including thinking humanly and thinking rationally.² These definitions rely on the internal processes of human intelligence. However, Alan Turing focused on a machine’s external manifestation of intelligence or analytical ability, looking to see if a computer could convince a human that it is also a human.³

One problem in defining AI is that the finish line keeps moving. Chess was once considered a barometer of AI, but that has gradually changed since computers were able to play a decent game of chess in 1960.⁴ IBM’s Deep Blue beat the best human player in the world in 1997.⁵ These developments made many suggest that skill in chess is not actually indicative of intelligence,⁶ but did chess really become disconnected from intelligence merely because a computer became good at it? As one expert laments, “[a]s soon as it works, no one calls it AI anymore.”⁷

Historically, I have defined AI in publications and presentations as “any machine or program capable of recreating one or more element of human intelligence.”⁸ I particularly like that definition when discussing the regulation of AI. It is expansive, and I believe government regulations should use an expansive definition of AI in order to empower regulators to create comprehensive regulatory systems to govern AI. Additionally, an expansive definition of AI permits regulators to reach more systems, programs, and devices and minimizes any uncertainty that the regulators are authorized to govern any particular system, program, or device.

Having said that, when I first started using that definition, there were essentially no definitions of AI in law. More recently, there has been increasing regulatory activity around AI, and with that have come legal definitions of AI. Just as important for private companies working with AI, there are more contracts governing

and defining AI in terms of developing, programming, training, testing, manufacturing, distributing, etc. The need to establish workable definitions of AI in private law is increasing. Below, I discuss a few prominent examples of AI definitions included in statutes and regulations before discussing considerations when defining AI in a contract.

Statutory and Regulatory Definitions of AI

The most prominent regulatory system governing AI never actually uses the term “artificial intelligence,” referring instead to automated processing and automated decision-making. The EU’s General Data Protection Regulation (“GDPR”) addresses and governs profiling and “decisions based on automated processing.” Profiling is defined as:

any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person’s performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements.⁹

By the terms of the GDPR, “data subjects shall have the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her,” subject to certain restrictions.¹⁰

The GDPR does not actually define automated processing or automated decision-making, but the data protection authorities of the member states have done so. For example, the Irish Data Protection Commission notes that “Processing is ‘automated’ where it is carried out without human intervention and where it produces legal effects or significantly affects you.”¹¹ Similarly, the UK’s Information Commissioner’s Office defines automated decision-making as “the process of making a decision by automated means without any human involvement.”¹² Decision-making as well as the actions included in profiling—evaluation, analysis, and prediction—are recreations of functions of human intelligence, so the short definitions in use in Europe in response to the GDPR’s treatment of AI are consistent with the short definition I provided above.¹³

In the United States, a major piece of legislation governing the AI strategy of the Department of Defense became law in 2018. The John S. McCain National Defense Authorization Act for Fiscal Year 2019 (the “McCain Act”) included funding to assess the Department’s use of AI and to deploy further AI applications throughout the Department. The McCain Act also directs the Defense Department to establish activities to coordinate department efforts to develop, mature, and transition AI technologies into operational use. In doing so, the McCain Act provides a definition of AI that is limited by the terms and application of the legislation, but which is likely to be influential given the lack of other statutory definitions of AI and the influence department resources have in funding and shaping AI research. Per the statute, AI includes any of the following:

1. Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.
2. An artificial system developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.
3. An artificial system designed to think or act like a human, including cognitive architectures and neural networks.
4. A set of techniques, including machine learning, that is designed to approximate a cognitive task.
5. An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision making, and acting.¹⁴

Although both this definition and the definition from the GDPR are expansive, the McCain Act definition is obviously a more detailed explanation than what has been offered under the GDPR. However, similar to European governments’ definitions for automated processing and decision-making, the McCain Act refers to human abilities for its definition of AI: “performs tasks under varying and unpredictable circumstances without significant human oversight;” “designed to think or act like a human;” “designed to approximate a cognitive task;” etc.

This reflects a strategy similar to what I have relied on when defining AI. Regulations should define AI broadly in order to empower regulators to consider AI broadly and create comprehensive regulatory systems to govern AI, while also legitimizing the regulators' efforts to regulate the systems, programs, or devices of any entity protesting that such efforts are an overreach.

Contractual Definitions of AI

A key question to take from these legal definitions of AI when considering contractual language is whether to provide a specific or detailed definition of AI. In some contracts, the systems, programs, or devices governed by a contract might have well-established portions that all parties agree are AI. But where the contract governs a relationship in which one or more parties may or may not rely on AI, defining what the contract will consider and treat as AI may be heavily negotiated.

Take this example: While negotiating a contract governing human resources ("HR") software, the parties acknowledge that some elements of the software platform are essentially AI applications that analyze the personal information uploaded by employees to perform some of the platform's functions, but due to the nature of the software and its development, the exact elements that will have AI capabilities are not knowable when the contract is negotiated. The party receiving the software should want to enforce some standards regarding the testing and training of, and the biases in, the AI applications. The party providing the software will want to minimize the training it has to perform, the training datasets it has to devote resources to, and its liability for biases the AI demonstrates in performing HR functions. How AI is defined in the contract will affect how obligations concerning AI are imposed.

In other words, the receiving party will want an expansive definition of AI and the providing party will want a definition that limits the software elements that are considered AI applications. The receiving party should pursue a broad definition like "Artificial Intelligence means a software, program, device, or system that functions without direct human oversight, but which recreates, imitates, or acts in the place of human reasoning, analysis, planning, or decision making." Such a definition imposes a great burden on the providing party, as this language potentially imposes its

obligations concerning AI over a wide array of programs, software, devices, and systems, potentially many more than the providing party anticipates in the negotiations. The providing party will need to review any new features incorporated into the platform going forward to determine if those features have to satisfy the contract's AI requirements.

In contrast, the providing party should pursue a narrow definition that limits the elements of the software that could be classified as an AI application. Ideally, that party will be able to limit the definition of AI to a list of defined elements. However, if the company markets its HR software as a dynamic platform that will incorporate new functions as the company develops them, the receiving party (and other customers) can logically push back against efforts to define AI as a list of specific elements. Instead, the providing party could try a compromise definition that is more limiting than the broad definition stated above: "Artificial Intelligence means a software, program, device, or system that processes the personal information of one or more company employees without evaluation or oversight by a human." This definition introduces two significant limiting factors:

1. Only software, programs, devices or systems that process personal information will qualify as AI.¹⁵
2. As long as the providing party retains human employees to monitor the relevant elements of the software—frequently referred to as the "man in the loop" in military AI operations—it can incorporate as many AI applications as it wants without having contractual obligations to train the AI or liability for the biases of the AI.

There are other ways to contract around these issues, but defining AI in contracts will grow in importance as more companies incorporate into their operations software, programs, devices, and systems that are capable of recreating or imitating elements of human intelligence.

Conclusion

The example above is only one of many where the definition of AI is likely to be a negotiated term: Ed Tech platforms, health-care software, customer relationship management systems, etc.

Additionally, as government regulation of AI expands, contractual definitions of AI will also need to take statutory and regulatory definitions of AI into account.

Companies that retain and supply products and services with AI applications need to pay close attention to the obligations and liabilities the definition of AI creates in their contracts. Careful wording can provide valuable protections during the life of those agreements, which may be particularly valuable given that AI in commercial operations is still relatively new and many of the potential disputes between parties are still unknown.

Notes

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1. See John McCarthy, "What is Artificial Intelligence?," John McCarthy's Home Page 2-3 (Nov. 12, 2007), <http://www-formal.stanford.edu/jmc/whatisai.pdf>.

2. Stuart J. Russell & Peter Norvig, *Artificial Intelligence: A Modern Approach* (3d ed.) (Pearson, 2010), 2.

3. A.M. Turing, *Computing Machinery and Intelligence*, 59 *Mind* 433-45 (1950).

4. See Nils J. Nilson, *The Quest for Artificial Intelligence* (Cambridge University Press, 2009), 194.

5. See Bruce Pandolfini, *Kasparov and Deep Blue: The Historic Chess Match Between Man and Machine* (Simon & Schuster, 1997), 7-8.

6. Matthew U. Scherer, *Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, and Strategies*, 29 *HARV. J. OF L. & TECH.* 2 (Spring 2016), 361.

7. See Moshe Y. Vardi, "Artificial Intelligence: Past and Future," *Communications of the Association for Computing Machinery* (Jan. 2012), 5, at 5.

8. John Frank Weaver, *Robots Are People Too* (Praeger Publishing, 2013).

9. Council Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, 2016 O.J. (L119) 1, Art. 4(4) ("GDPR"). This United Kingdom's Information Commissioner's Office ("ICO") provides

a useful and more succinct summary: “automated processing of personal data to evaluate certain things about an individual.” United Kingdom Information Commissioner’s Officer, “Rights related to automated decision-making, including profiling,” *available at* <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/individual-rights/rights-related-to-automated-decision-making-including-profiling/> (“ICO Guide”).

10. GDPR, *supra* note 9, at Art. 22(1).

11. Data Protection Commission, “Rights of Individuals under the General Protection Regulation,” *available at* <https://www.dataprotection.ie/sites/default/files/uploads/2018-12/Rights-of-Individuals-under-the-General-Data-Protection-Regulation-04-2018.pdf>.

12. ICO Guide, *supra* note 9.

13. Processing is a much more expansive term in the GDPR and includes essentially anything a person or entity can do with or to data: “any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.” GDPR, *supra* note 9, at Art. 4(2). That definition includes many activities that do not require or recreate human intelligence, so I have not included it in the discussion of how the GDPR regulatory system defines AI.

14. John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, §238(g) (2019). Section 1051 establishes an independent National Security Commission on AI to review advances in AI and associated technologies, particularly machine learning, and includes a similar definition of AI.

15. In this definition, the assumption is that “process” has a meaning similar to the definition in the GDPR, which is common in agreements governing data. Additionally, “personal information” is typically defined in a way similar to the definition of “personal data” in the GDPR or “personal information” in the California Consumer Privacy Act.

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