



AI, Machine Learning & Big Data

2019

First Edition

Contributing Editors:

Matt Berkowitz and Joshua Thompson

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Trends

What is the state of the technology and competitive landscape?

France is among the top four countries in the world for the global production of articles on artificial intelligence (AI), along with China, the United States, and the United Kingdom, thanks to its excellence in mathematics, information and communication sciences and technologies (*sciences et technologies de l'information et de la communication*, STIC) and social and human sciences (SHS). France has undeniable theoretical knowledge, with its brains sought abroad, but which is not yet reflected in the emergence of major leading companies.

The French government will allocate €1.5 billion over the next five-year period to develop AI, of which nearly €400 million will be devoted to calls for projects and disruptive innovation challenges. This AI will be the first in the scope of the €10 billion Innovation and Industry Fund, which was set up at the beginning of 2019. In addition, €800 million will be devoted to non-electronics.

The Korean firm Samsung is set to open its third-largest research centre in Paris, at which more than 100 researchers will be based, and the Japanese firm Fujitsu will also open its first European-scale centre in the city. DeepMind, the creator of AlphaGo, will open its first European research centre in France, and Google will sponsor an AI Chair at École Polytechnique. Other major groups will follow.

What are the key legal issues that are arising out of adoption of AI/machine learning/big data?

The growth of AI requires the establishment of legal framework in order for it to fit into the wider legal and moral framework of the country, and of Europe more generally.

Indeed, the emergence of AI could lead to the erosion of the fundamental values and rights of the European Union (human dignity, respect for private life, principle of non-discrimination, etc.). Similarly, consumer rights could be called into question, particularly with regard to product safety criteria.

Finally, questions arise in the field of civil liability, as traditional rules are not well adapted to the specificities of the questions raised by robotics.

What is the government view with respect to the adoption of AI?

A report on AI written by mathematician and MP Cédric Villani was released on March 28, 2018. Among the many ideas proposed are: to create a network of interdisciplinary AI institutes; to set up a supercomputer designed specifically for AI applications; and to make careers in public research more attractive, in order to avoid a brain drain to American giants.

At the supra-national level, Article 14 of the Treaty on the Functioning of the European Union (TFEU) on the common market could serve as a basis for common regulation. This should make it possible to establish a basis for common requirements in terms of safety and liability in particular, which would avoid the emergence of legal uncertainty, which would necessarily have the effect of weakening the competitiveness of European countries on the AI market.

By regulating AI before its real explosion on the European market, the legislator could guide its development in terms of its uses and functioning. Such a framework could also reassure consumers by setting safety and security requirements, but also ethical criteria, in order to favour French and European stakeholders.

What industries/sectors do you see being leaders in the development and adoption of AI?

The above-mentioned report identifies four priority sectors on which France must focus in order to develop AI: health; transport; environment; and defence.

Ownership/protection

What intellectual property issues may arise regarding ownership?

The most innovative issue in the field of IP and copyright is the fate of autonomous machine-generated works. First of all, the question of the eligibility of creations for protection by intellectual property law arises, before that of the holder of any right granted.

French law, like European law, is still lacking with regard to robotic creations. The traditional rules of eligibility for copyright protection are based on the notion of “personality of the author”, which is poorly adapted to a creation generated by an algorithm. However, the personality of the programmer could be used indirectly to characterise the originality needed for protection.

The consecration of a neighbouring right in the field of AI could allow for the protection of generated content, for the benefit of human stakeholders. Indeed, the computer cannot be the owner of the rights due to the lack of legal personality. The issue of the determination of the owner will then arise (designer, installer, programmer...) and the opportunity to qualify the work as collective could be privileged.

How are companies protecting their technology and data?

As a series of elementary operations, the algorithm is assimilated to a mathematical principle that cannot be protected by intellectual property, whether by copyright or by patent.

This is enshrined in Directive 2009/24/EC of 23 April 2009 on the legal protection of computer programs, and in several decisions based on this principle (Cass., Civ. 1, Judgment of 14 November 2013 (c/Microsoft); CA Paris, 24 November 2015, No. 13/24577; and CA Caen, Correctional Appeals Chamber, 18 March 2015 (c/ Skype)).

However, some indirect protection for the algorithm can be provided when it is integrated into a source code of software that meets the principle of originality. Indeed, software, as a form of expression, is protected by copyright. The same applies to a patentable invention using an algorithm.

The EU Directive 2016/943 of 8 June 2016 on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure creates a regime for trade secrets, separate from intellectual property rights. If the algorithm is secret, has commercial value because it is secret, and has been subject to reasonable safeguards, it may be protected from disclosure.

Algorithms are also likely to constitute protectable know-how if they are part of a set of non-patented practical information, resulting from experience and know-how which is tested. If the know-how does not constitute a private right of ownership, its misuse may give rise to civil actions in unfair or parasitic competition.

Finally, one of the traditional means offered to the company to protect its secrecy is based on a contract. This contractual arrangement will take the classic form of a confidentiality agreement or a clause integrated into a global contract.

What applicable laws with respect to data ownership, security and information privacy?

The development of AI creates new risks that regulation must take into account, as AI increases the risk of surveillance of individuals and the ongoing collection of personal data. The privacy of individuals can be compromised if the algorithm and cybersecurity of robots fail. Data can then be intercepted by a third party.

In France, like in the other Member States of the European Union, the collection and processing of personal data are governed by the GDPR. The Regulation requires, in particular, the creation of a data protection officer, the establishment of a data processing register, the security, anonymisation or encryption of data, the portability of data and the deletion of data qualified as unnecessary.

In the event of non-compliance, companies may suffer penalties of up to €20 million or 4% of turnover.

New approaches to data management based on AI deserve particular attention, as the level of compliance required by the GDPR is high. The Regulation gives a very broad definition of personal data, so that all data, from information on the identity of the user and web data, including IP addresses and cookies, to more personal information, such as biometric data, sexual orientation and even political opinions, fall within the scope of the Regulation.

A solution using AI-based machine learning techniques can improve data collection, processing and tracking and help companies produce accurate reports on their use. AI could thus be an asset for companies in order to achieve GDPR compliance. Companies can have global and exhaustive data mapping operations falling within the scope of the Regulation.

However, some of the GDPR requirements are difficult to implement in terms of AI. The European Regulation requires companies to obtain informed consent on the profiling and use of the processed data. Consent must be informed, recorded and presented to listeners with details on the use of profiling. When the latter evolves rapidly due to the adaptability of the algorithm, it is difficult to obtain the consent of the individual for each modification.

In the same way, each individual has a right to explanation that will require companies using the AI to explain the process of their algorithms. If the controller is unable to clearly explain to the users of the algorithm its functioning and purpose, he will automatically be deprived of the right to collect and use their personal data.

Antitrust/competition laws

What happens when machines collude?

The increasing use of price algorithms by competing firms can lead to cartel phenomena. Entrusting its pricing policy to algorithms may lead to the emergence of tacit collusion; in other words, to a possible abuse of collective dominance. Indeed, competitors may entrust the same algorithm with the task of coordinating their market behaviour. The software, programmed to implement an agreement, replaces physical price consultation meetings.

Worse, each competitor's algorithms could discover for themselves, through autonomous learning mechanisms, the benefits of tacit collusion and could implement immediate and proportionate retaliation in the event of a deviation from the collusive balance. It would therefore be possible for such balances to emerge without explicit human will.

The consideration of such risks is the subject of a recent study by the OECD (2017) and the French Competition Authority and the German Federal Cartel Office (2016). Indeed, and in the presence of algorithms, the intention for collusion is very difficult to demonstrate, and anti-competitive behaviour is more difficult to sanction.

In the cases of abuse of dominant position, algorithms have been implicated in eviction abuses. These are unilateral practices by which a dominant operator obstructs a potential competitor's market access, or forecloses competitors who are at least as efficient as them by using the leverage of its market position. In the case of online search engines, algorithms have been able to manipulate natural search results (i.e., direct results of their algorithms) to put downstream their services at the expense of their competitors.

As such, Google was heavily sanctioned at the end of June 2017 by the European Commission, which imposed a fine of €2.4 billion for promoting its price comparison service. Beyond these abuses of eviction, the case of abuse of exploitation must also be considered. In this second situation, the algorithm serves as a basis for the imposition of differentiated, if not discriminatory, pricing conditions between users of the platform; the algorithms can then be the vehicle for tariff differentiation, in order to adjust the price offered to each consumer to his maximum capacity to pay.

What antitrust concerns arise from big data?

On 10 May 2016, a joint study was published by the French Competition Authority and the German Federal Cartel Office on the competitive challenges of data collection, processing and use by companies. When data provides significant competitive advantages to its owners, companies must acquire more data and/or analyse and use it more effectively in order to remain competitive and/or gain a competitive advantage over their competitors in the market.

At the same time, companies can use their data-based market power to gain a competitive advantage in adjacent markets. This is particularly the case in the case of tied sales, whereby a company links access to its database to the use of its own data analysis services. Cross-data analysis, i.e. the use in one market of data collected in another market, increases the risk of foreclosure by allowing companies in a strong dominant position to offer customised offers to consumers in adjacent markets.

Competition concerns are also often raised when data allows price discrimination. Denial of access to data may be anti-competitive if the data in question constitutes an "essential facility" for market access. However, the European Court of Justice (ECJ) has limited mandatory access to essential facilities to a limited number of cases, on the understanding that, even if dominant, an undertaking cannot in principle be obliged to favour the activity of its competitors (ECJ, IMS Health, C-418/01, judgment of 29 April 2004; GC, Microsoft, T-201/04, judgment of 17 September 2007). The ECJ criteria would only be met if it is demonstrated that the data held by the person concerned is truly unique, and if the person's competitor cannot obtain the data otherwise to provide its services.

Board of directors/governance

What governance issues do companies need to be aware of, specific to AI and big data?

Algorithms are decision-support tools based on concrete information from multiple sources: external data.

Every day, every company and its competitors scatter a lot of information online: recruiting new employees; filing patents; or spending on advertising. This information is an indication of how it is possible to anticipate the next movements of competitors. Those who pay attention to their competitors' activities find themselves with a considerable advantage: information.

How does AI and big data affect the due diligence process for boards of directors?

AI enables an analysis of impressive volumes of data, allowing for the evaluation of the performance of certain markets and the detection of their trends and cycles, in order to extract the strengths and weaknesses of the company and to indicate points that require particular attention.

The processing of internal company data, coupled with external data collected, allows for predictive analyses, makes sharp strategic trade-offs and anticipates the risks of each investment, and estimates income for the coming months, unnecessary expenses and points for improvement.

For marketing, the development of AI and big data already permits the tracking of Porter's five strengths in real time (competitors, suppliers, customers, potential entrants and substitutes). The ability to anticipate market developments is a considerable asset in guiding choices in terms of positioning, innovation and investment. The competitive gap is therefore likely to widen between companies using AI and those simply using traditional methods.

Regulations/government intervention

Does your jurisdiction have specific laws relating to AI, machine learning or big data?

There is currently no legal framework specific to AI. No French or European provision specific to AI exists or takes into consideration the specificities of algorithms, AI's decision-making, learning and autonomy capacities, or even its cooperation with human beings.

Are any laws or law reform authorities considering specific laws relating to AI, machine learning or big data?

A draft report was published by the European Parliament's Committee on Legal Affairs on 31 May 2016, with recommendations to the European Commission on future civil law rules on robotics. The European Commission's future action concerns the adaptation of legislation to robotics and AI, and would be based on Article 114 of the TFEU; Article 5(3) of the Treaty on European Union establishes the principle of subsidiarity, allowing the European Union to intervene in cases where "the objectives of the proposed action cannot be sufficiently achieved by the Member States".

Civil liability

What are liability considerations when using AI technology?

As mentioned above, there is currently no legal regime specific to AI, and there is no specific legal basis for it. It is therefore necessary to look at the pre-existing legal foundations of civil liability in the Civil Code. The occurrence of damage in connection with AI raises a legal basis issue in French law, because liability falls within the field of human action.

Responsibility for things, animals, children or attendants also depends on human action through the notion of custody. The presumption of responsibility can be overturned if it can be proved that a person had no ability to influence events and the course of events through his or her decision and action.

The self-determination capacity of AI allows it to simply escape the scope of civil liability. The fault presumes an awareness of the rule and its non-compliance that the machine is not able to apprehend.

The application of strict liability can also be criticised because of the diversity of the actors likely to be involved, their degree of contribution to the implementation of the AI, and the impossibility of apprehending, quantifying and therefore insuring the risk.

The recent reform of the French law of obligations has not incorporated new rules likely to establish autonomous liability for robots. The European Commission is considering granting a “legal personality” to robots. This reform project has revealed many fears that such a status will lead to claims for rights to be granted to them.

Where does the liability fall when AI fails (e.g., contractual issues, etc.)?

In the face of the legal vacuum in which AI evolves, it is up to the contract to adapt the rules relating to contractual liability. Contract management involves taking into account three main issues:

- The establishment of a reference framework to secure the contractual relationship: the European Parliament adopted a resolution on 16 February 2017 containing recommendations to the Commission on civil law rules on robotics. Parliament considers that “the question of standards development [...] is crucial for future competition in the field of artificial intelligence and robotics technologies”. These standards could be created at the supranational level.
- Allow the parties to provide for the applicable regime by establishing the conditions for exemption from liability in the contract: Order No. 2016-131 of 10 February 2016 provides that: “The debtor shall be liable only for damages that were or could have been provided for at the time the contract was concluded, except where the non-performance is due to gross negligence or fraud.” Predictability of liability is a law principle that should be applied to the AI. Incorporating unpredictability into the performance of the contract could exempt the parties from liability. In a field where unpredictability is the very principle due to the deep learning of the software, the requirement set by the Civil Code takes on a specific dimension. However, even in the event of an unforeseeable event disrupting the performance of the contract, the unpredictability of the AI will be confronted with the prohibition against depriving the essential obligation of the contract of its substance.
- Define and regulate the rights arising from the performance of the contract, in particular intellectual or industrial property rights: an effective clause could protect both the AI itself and its creations by determining the ownership of inventions.

Criminal issues

The Council of Europe Convention on Cybercrime (“Budapest Convention”) distinguishes two main categories of facts: offences against automated data processing systems; and ordinary offences facilitated by a digital environment. AI is able to increase the automation of direct or indirect attack modes on information systems, by stealing from human operators the information necessary to access a system in order to steal sensitive data or block the operation of the system.

Other types of offences should also be considered, such as stock market manipulation or voluntary changes in AI behaviour by other AIs for criminal purposes.

The question of an alleged autonomous “will” of AI (and AI-based robots) must be ruled out in the case of intentional offences committed or ordered by humans. It is indeed necessary to systematically return to the human agent who used or assembled these systems with the intention of committing an offence. The AI must then be analysed as a tool used for criminal purposes.

On the other hand, the search for responsibility may become more complex when different technologies are aggregated (e.g., robotics, AI, big data, blockchain) and/or if the machine has carried out an autonomous learning phase. The creation of a specific legal personality, envisaged by the European Parliament, could make it possible to improve compensation for victims of unintentional damage but would be likely to make designers less responsible.

Discrimination and bias

The processing of data by AI may lead to the reproduction and legitimisation of existing discrimination through deep learning. AI simply reproduces the model that the programmer submitted to it. In order to prevent discrimination created by AI, ethical charters have been adopted.

The white paper on predictive justice published by the Sciences Po School of Law in November 2018 makes several recommendations; in particular the implementation of a study on techniques for selecting learning samples to ensure their statistical representativeness and the implementation of open analysis criteria. To this end, developers of predictive justice tools must document the process of building the databases mobilised, specifying how court decisions are collected and their statistical representativeness, the logic behind the constitution of learning samples and how the criteria for analysing court decisions are selected.

The Council of Europe has also adopted an ethical charter, the first at European level on the use of AI in judicial systems. It acknowledges that the development of AI could bring progress, while reiterating the need for its deployment to guarantee respect for fundamental rights guaranteed in particular by the European Convention on Human Rights (ECHR) and the Council of Europe Convention on the Protection of Personal Data.

In this respect, the Council of Europe recommends five guidelines:

- to ensure the design and implementation of AI tools and services compliant with fundamental rights;
- principle of non-discrimination: to specifically prevent the creation or reinforcement of discrimination between individuals or groups of individuals;
- principle of quality and security: for the processing of judicial decisions and data, use certified sources and intangible data with models designed in a multi-disciplinary manner, in a secure technological environment;
- principle of transparency, neutrality and intellectual integrity: to make data processing methodologies accessible and understandable, allowing external audits; and
- principle of user control: to ban a prescriptive approach and allow the user to be an enlightened actor and master of his choices.

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Admitted to the Paris Bar in 2012, Cloé Si Hassen assists and represents entrepreneurs, companies and their managers in all areas of business law in both advisory and litigation.

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Business lawyer and admitted to the Paris Bar in 2011, Marine Travailot assists and represents companies and their managers, particularly in the startup ecosystem. She decided to specialise in this field following a simple observation: despite the development of innovative companies and the multiplication of incubators, startups meet difficulties to find a legal offer adapted to their specific needs and environment.

Holder of diplomas in business law and corporate tax law obtained respectively at the Universities of Paris 1 Panthéon Sorbonne and Paris 2 Panthéon Assas, Marine Travailot obtained an executive MBA in International Economic Strategy in order to offer to her clients a global strategy and to provide them with a more complete response to the issues raised.

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