



Studio comparato su modelli operativi per l'efficiamento dell'assegnazione della causa al ruolo del giudice

## A comparative analysis of sample applications in the justice domain

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## 1. Introduction

The complex role played by the judge in society makes the application of Artificial Intelligence (AI) in the administration of justice a problematic task<sup>1</sup>. The judicial sphere entails indeed several activities (activism, interactions with people, dispute settlement, case management, education, social commentary as well as adjudicatory functions) and roles (decisions may be undertaken either by a single judge, by a board composed of more judges, or by a jury) whose characteristics make it difficult to forecast whether and how it will be re-shaped.

Despite this, AI tools have been already developed and applied in the legal profession. So far, the main initiatives come from the private sector, namely insurance companies, lawyers, and legal services wanting to reduce legal uncertainty and the unpredictability of judicial decisions. The fascinating advantages brought about by the deployment of AI tools in terms of efficiency and quality of the decision-making processes have also been regarded as an opportunity for the judicial systems. The most significant example so far is provided by the United States, where “robot lawyers” already rely on predictive coding to carry out some basic procedural or judicial functions. However, judicial AI experiments have been carried out also in several EU countries (including Italy) and China. The Covid-19 pandemic has even accelerated this process of technological change. Even though many changes in court systems have focused on the development of technologies “supporting” judges’ activity, the deployment of AI in the judicial sector promises to “replace” - and even disrupt - activities and functions previously carried out by humans<sup>2</sup>.

Given the recent strides towards the technological innovation of the judicial systems worldwide, the following Appendix aims to provide an overview of the current applications of AI in the administration of justice considering their potential application in the Italian judicial system. The purpose of this inquiry is to study the potential application of specific AI tools to the Italian judicial system from a twofold perspective: on one hand, it will identify the advantages that they bring about for the quality and efficiency of the decision-making processes, on the other, it will outline the

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<sup>1</sup> T Sourdin, ‘Judge v robot? Artificial intelligence and judicial decision-making’, 41(4) UNSW Law Journal (2018) 1114.

<sup>2</sup> T Sourdin, *Judges, technology and artificial intelligence* (Northampton, Edward Elgar Publishing, 2021), 2.

drawbacks entailed by their application. Starting from the analysis of these case studies, some conclusions will be reached with respect to the area where they have been implemented (EU, US, or China) and the service they are meant for.

## 2. Current uses of AI in the administration of Justice

An inquiry on possible uses topic requires some preliminary knowledge of what judicial AI actually is. A fuller understanding of the technological change the judicial is indeed necessary not to avoid but at least to cushion the “black box” approach that characterizes several contributions regarding the relationship between AI and law. This issue is quite problematic, as there is no unique definition of AI in the scientific or legal literature. Although it is commonly understood that the word ‘Artificial Intelligence’ stands for a “science and a set of computational technologies that are inspired by the way people use their nervous system, body, senses and how they learn, reason and take actions”<sup>3</sup>, the contours of this definition remain disputed. Article 3 of the European Commission’s Proposal for an AI act<sup>4</sup> provides a definition of an AI system as “software that [...] can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with”. Recital 6 of the Proposed AI act pinpoints that “AI systems can be designed to operate with varying levels of autonomy and be used on a stand-alone basis or as a component of a product, irrespective of whether the system is physically integrated into the product (embedded) or serve the functionality of the product without being integrated therein (non-embedded)”. Moreover, Annex 1 limits this broad definition to some specific “techniques and approaches” through which AI systems are developed:

- ✓ **machine learning approaches**, including supervised, unsupervised, and reinforcement learning, using a wide variety of methods including deep learning;
- ✓ **logic and knowledge-based approaches**, including knowledge representation, inductive (logic) programming, knowledge bases,

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<sup>3</sup> BJ Grosz, C Russ, A Eric, HA Mackworth, T Mitchell, D Mulligan, Y Shoham, ‘Artificial Intelligence and life in 2030’, Report of the 2015 study panel (Stanford University, 1 September 2016) 4.

<sup>4</sup> European Commission, ‘Proposal for a Regulation of the European Parliament and of the Council laying down harmonized rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative acts’ COM (2021) 206 final.

inference, and deductive engines, (symbolic) reasoning, and expert systems;

- ✓ **statistical approaches**, Bayesian estimation, search and optimization methods.

Systems of judicial AI are increasingly relying on Machine Learning (ML) technologies, which allow the creation of platforms performing legal problem-solving using knowledge induced from collections of legal documents or other large data sets. Contissa and Sartor refer to the deployment of ML systems in the legal sector as a “data-centric approach” to computable law<sup>5</sup>. ML provides indeed machines with the ability to learn automatically and advances from past experience without the help of explicit programming, thereby optimizing their ability to learn and improve knowledge automatically. Machines analyze data, learn patterns, and assemble the entire cognizance from the data by applying the rules enshrined within algorithms. As a consequence, computers learn automatically and adjust actions accordingly without the involvement of human beings. When combined with AI and cognitive technologies, ML becomes more efficient in processing large volumes of information.

We can distinguish four types of Machine Learning technologies:

- ✓ **Supervised ML** → Supervised learning is based on a training set composed of examples with both input and expected output. This allows the programmer to “train” the machine to compare its output with the correct input and deliver the correct answers for every new input.
- ✓ **Unsupervised ML** → The system is provided only with a set of inputs, consisting of the unlabeled dataset. Based on these datasets, the ML model learns by itself and delivers autonomously expected (or unexpected) outputs. It allows for more complex processing tasks in comparison to that supervised learning.
- ✓ **Semi-supervised ML** → This type of algorithm falls between unsupervised learning and supervised learning: the ML model gets trained on an unequal proportion of unlabeled and labeled data. It has been found that learning accuracy increases significantly when unlabeled datasets are combined with a small number of labeled ones.
- ✓ **Reinforcement ML** → In Reinforcement Learning the decisions are taken sequentially. The input affects the output, which in turn affects the subsequent input. Although Reinforcement Learning relies on training data as Supervised learning, it differs from the latter because the training

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<sup>5</sup> G Contissa, C Sartor, ‘AI to serve the efficiency and the quality of justice’, [https://opac.eui.eu/client/en\\_GB/default/search/results?qu=giovanni+sartor+judicial+ai&te=#](https://opac.eui.eu/client/en_GB/default/search/results?qu=giovanni+sartor+judicial+ai&te=#)

data have an answer key. Training Reinforcement Learning has no answer key, binding the model to learn from experience.

The deployment of ML algorithms in the judicial sphere has been mostly used to improve the capabilities of Natural Language Processing (NLP) and Text Analytics. As human language is complex, ambiguous, and extremely diverse, the goal of NLP makes it possible for computers to understand human language. NLP analyzes the grammatical structure of sentences and the individual meaning of words, then uses algorithms to extract meaning and deliver outputs. In other words, it makes sense of human language so that it can automatically perform different tasks. Examples of NLP are virtual assistants, like Google Assist, Siri, and Alexa. Another well-known application of NLP is chatbots, which solve issues by understanding common language requests and responding automatically. On the other hand, Legal Text analytics (or Legal analytics - LA), also known as text mining, employs NLP, ML, and other computational techniques automatically to extract meaning or semantics from text archives<sup>6</sup>. In the legal domain, LA is mainly deployed to analyze case decisions, contracts, statutes, and other legal texts.

### 3. Current uses of AI in the legal sector: a classification

Nowadays, more than 600 legal technology companies focused on lucrative litigation support applications based on these new technologies<sup>7</sup>. As will be seen in the following pages, in many countries initiatives to exploit AI's potential applications came forward also from the public sector. Overall, the data-centric approach to legal AI has been successfully deployed for several tasks<sup>8</sup>: Development of efficient searching techniques and algorithms for analyzing the argumentative part of legal documents; Predicting the decision of a case-based judgment; Representation of legal knowledge; Pattern recognition algorithm to find the inconsistent areas of case studies and their subsequent evolution; Analysis and estimation of cases; Scrutinize judgments and agreements; Predict and analyze the rate of success of a case and refine it; Risk

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<sup>6</sup> KD Ashley, 'Prospects for Legal Analytics: Some Approaches to Extracting More Meaning from Legal Texts', (2022) 90(4) University of Cincinnati Law Review, 1207.

<sup>7</sup> G Contissa, C Sartor, 'AI to serve the efficiency and the quality of justice', cit.

<sup>8</sup> For a fuller overview of every subfield, see R Sil, A Roy, B Bhushan, AK Mazumdar, 'Artificial Intelligence and Machine Learning based Legal Application: The State-of-the-Art and Future Research Trends, International Conference on Computing, Communication, and Intelligent Systems (ICCCIS)' 2019.

assessment algorithm to predict appellant's risk of committing other crimes; Data modeling service in the law field; To automate lawyer-client conversation Bot is created; Jury instruction model to analyze both sides of the case; Envelop assessment and risk of a lawsuit.

The CEPEJ's Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment<sup>9</sup> summarizes these uses according to the service provided for the administration of justice:

1. Advanced case-law search engines;
2. Online dispute resolution;
3. Assistance in drafting deeds;
4. Analysis (predictive, scales);
5. Categorization of contracts and detection of divergent or incompatible contractual clauses;
6. "Chatbots" to inform litigants or support them in their legal proceedings.

This classification will be adopted in the next section to carry out the analysis of the AI systems applied to the administration of justice. However, as underlined in the Charter, these main categories have been identified only "for illustrative purposes"<sup>10</sup>. A rigorous analysis of these categories might be therefore negatively affected by the vagueness of the categories and eventual overlaps between their characteristics. To avoid this risk, this analysis will complete the criterion of the service offered with the criterion of the data processed. Indeed, Contissa and Sartor distinguish between "document-oriented" and "case-oriented" approaches to judicial AI<sup>11</sup>:

- ✓ **Document-oriented approaches** focus on the analysis of individual documents. As will be seen in the next section, document-oriented approaches provide tools capable of increasing the functions of advanced case-law search engines.
- ✓ **Case-oriented approaches** "typically rely on models extracted from vast sets of cases. They provide aggregate statistical information about such cases, but may also be used to predict specific aspects of new cases, such as their duration, costs, and potential awards or punishments, as well as to

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<sup>9</sup> European Commission for the Efficiency of Justice (CEPEJ), 'European Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment' Council of Europe (Strasbourg, 3-4 December 2018).

<sup>10</sup> European Commission for the Efficiency of Justice (CEPEJ), 'European Ethical Charter on the use of Artificial Intelligence in judicial systems and their environment', cit., 17.

<sup>11</sup> G Contissa and G Sartor, 'How the Law Has Become Computable', in G Contissa, G Lasagni, M Caianiello, and G Sartor, *Effective Protection of the Rights of the Accused in the EU Directives. A Computable Approach to Criminal Procedure Law* (Leiden, Brill: 2022); LK Branting, 'Data-centric and logic-based models for automated legal problem solving' (2017) 25(1) Artificial Intelligence and Law 12



calculate the probability that claims, motions, or other pleadings succeed”<sup>12</sup>. This category includes not only Legal analytics (predictive systems, scales) but also contract-categorization tools and the assistance in drafting deeds, as tools of “cognitive computing”<sup>13</sup>.

## 3.1. Advanced case-law search engines

### 3.1.1 Introductory considerations

Legal search engines have been the earliest product of the relationship between law and information technologies, as it dates back to the “first wave of computable law” in the 1960s<sup>14</sup>. Nowadays, electronic sources of legal content already have largely replaced traditional paper media even in the public sector. The impact of search engines on legal activities has been already substantial, as the use of information-retrieval techniques provides legal practitioners with a broader and more accurate set of legal materials.

AI systems based on ML algorithms are paving the way for some changes in the field of legal information retrieval. Some advanced functions are already available in commercial systems, such as the relevance ranking of the retrieved document, the use of citation networks, conceptual retrieval, and the automated selection of the most relevant fragments of documents (semi-summarization). Moreover, some AI techniques are being deployed to make legal documents more easily retrievable and more productively reusable, by selecting and ranking similar documents and extracting the most significant fragments and arguments. One of the challenges of this field is to replace keyword searches with semantic searches, which would allow one to search by natural language queries, instead of keywords<sup>15</sup>. These “advanced search engines” mainly rely on document-oriented approaches focused on the analysis of individual documents to perform tasks like information extraction, automated summarization, parsing statutory texts, and predictive retrieval.

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<sup>12</sup> *Ibidem*, 36.

<sup>13</sup> KD Ashley, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age* (Cambridge University Press 2017).

<sup>14</sup> G Contissa and G Sartor, ‘How the Law Has Become Computable’, cit.

<sup>15</sup> For example, searching for “assumption of risk” may bring up cases that do not use these words but still result in the relevant material. See SD Becerra, ‘The Rise of Artificial Intelligence in the Legal Field: Where We Are and Where We Are Going’ (2018) 11 J Bus Entrepreneurship & L 27.

- ✓ Information extraction consists of the process of identifying named entities such as places, persons, organizations, dates, claims, etc., as well as extracting more complex information, such as events and narratives.
- ✓ Automated summarization aims at creating summaries of case facts, decisions, and other legal documents by selecting phrases appropriate to a summary, combining and possibly rephrasing them into a coherent text. It can be distinguished between abstractive summarization (an AI-based approach that selects content appropriate for a summary and combines it into coherent text) and summarization of parenthetical descriptions (an approach that harvests parenthetical descriptions that judicial opinions place after citation to another case, and assembles them in a single summary).
- ✓ Parsing statutory texts converts automatically original, natural-language legislative documents into machine-interpretable rules.
- ✓ Predictive retrieval allows for real-time interactive retrieval of legal texts to operate predictively in the form of cognitive assistants for certain legal tasks, such as drafting a new law or deciding a case.

Document-oriented systems may be very useful in legal practice, enabling judges and other legal experts to be more efficient and accurate in doing legal analyses and generating legal documents. Their implementation in the administration of justice can indeed bring about an improvement in legal sources' quality, such as judicial decisions and statutory texts. Such systems may support the identification and selection of significant bits of previous cases, and thus facilitate the reuse of portions of previous documents in new ones. Through document analysis, these systems can, extract implicit information, organize cross-references between documents, and discover correlations among them. These functions allow for the reuse of portions of previous documents in new ones, as well as a better use of precedents.

### 3.1.2 EU initiatives

#### a) Doctrine.fr

Doctrine is a legal search engine that organizes legal information to make it accessible and intelligible by legal professionals<sup>16</sup>. Doctrine offers a single database capable of obtaining a complete view of the legal environment for a single case. It allows us to refine the search with filters

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<sup>16</sup> <https://www.doctrine.fr/>

by keywords, publication, device, or theme and go further by identifying case law trends by jurisdiction and specifying the results by date, chamber, and specialty of law. Raw data are transformed into contextualized and actionable information: each case is accompanied by the previous decisions from the first instance to the upper levels of jurisdiction and links to comments likely to be consulted on other sites; any legislative text is placed in its jurisprudential, doctrinal and historical context.

Doctrine also developed the so-called "Document Analyzer": it automates the verification of the applicability of legal sources cited by legal professionals in their writings, those of their teams, and their opponents.

"Business pages" are set up for each user by centralizing their decisions, comments, blog, and description of their activity. They enable users to know the legal issues of their clients and their opponents and explore the professional pages of their colleagues to understand thereby building a defense strategy.

Doctrine's technology learns from users' search habits and identifies the most relevant lawyers, companies, or topics thereby personalizing, watching, and accessing the information even before looking for it.

- ✓ It allows the users to check the validity and the soundness of their legal arguments and their opponent's;
- ✓ It offers a complete legal context based on a wide array of sources (codes, laws, regulations, decisions of the first instance at the Court of Cassation, comments, parliamentary documents, and collective agreements);
- ✓ A single-entry point for all the available legal information;
- ✓ It increases the quality of legal reasoning, providing legal professionals with sources they couldn't use otherwise (for example, parliamentary documents can help to understand the legislator's intentions).

However, the potential advantages entailed by the use of Doctrine leave unresolved some of the concerns regarding its spread in the legal market as a private platform. There is the risk that it may turn out to advantage only the party who can afford it, with prejudice for the equality of arms. Moreover, the eventual application of this search engine to the administration of justice should take into consideration the potential risks deriving from the "Business pages" service, as information and figures of a judge, for example, might prejudice its autonomy.

Aside from these ethical concerns, some issues characterized also the development of the platform, in particular in relation to the access to legal databases of the French Courts. The eventual implementation of this kind of platform in Italy should take therefore into consideration the necessity

of a specific framework to regulate the data flows from the judicial system to the AI system developers.

- ✓ After the adoption of the French Law for a Digital Republic in October 2016, Doctrine requested access to all the decisions of the Tribunal de Grande Instance de Paris. After a rejection by the President of the Tribunal, the Paris Court of Appeal maintained that there is no legal reason to oppose the communication of the decisions rendered publicly. The day after this decision, the Ministry of Justice adopted a circular and requested and obtained in June 2019 the judicial retraction of the judgment of the Court of Appeal itself<sup>17</sup>. In 2022, Doctrine announced to seizure the European Court of Human Rights to obtain recognition of its right of access. The ECHR considered the application admissible on June 27, 2022.
- ✓ In 2017, Doctrine was questioned for practices of 'typosquatting'<sup>18</sup>, a form of phishing based on the imitation of domain names of universities and companies: Doctrine used these domain names to send e-mails from fictitious academics or lawyers to obtain copies of decisions from the court registries, which had repeatedly refused to communicate them previously.
- ✓ In 2018, Doctrine entered into a non-exclusive partnership with the private company "Infogreffe", whose mission is a public service, as it aims to make available to its customers its documentary wealth of approximately 2 million decisions (10 years of exhaustive history of commercial court decisions). The Syndicat National de l'Édition, deeming the situation abnormal, brought the case to the attention of the Minister of Justice in January 2018.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Doctrine (private company)
<b>Year</b>	2016

<sup>17</sup> The Ministry of Justice's was described as an "anti-Doctrine" circular (R Letteron, 'Access to court decisions, or the "Anti-Doctrine" device' (libertescherries.blogspot.com, 6 January 2019) <<http://libertescherries.blogspot.com/2019/01/laces-aux-decisions-de-justice-ou-le.html>>

<sup>18</sup> I Chaperon, 'Piratage massif de données au tribunal' (LeMonde, 28 June 2018) <[https://www.lemonde.fr/economie/article/2018/06/28/piratage-massif-de-donnees-au-tribunal\\_5322504\\_3234.html](https://www.lemonde.fr/economie/article/2018/06/28/piratage-massif-de-donnees-au-tribunal_5322504_3234.html)>

<b>Place of implementation</b>	France
<b>Legal sector</b>	Civil/commercial/administrative - Criminal
<b>Recipients</b>	Legal Professionals - Judges - Litigants
<b>Description</b>	Doctrine is a legal search engine that organizes legal information to make it accessible and intelligible by legal professionals.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ It allows the users to check the validity and the soundness of their legal arguments and their opponent's;</li> <li>✓ It offers a complete legal context based on a wide array of sources (codes, laws, regulations, decisions of the first instance at the Court of Cassation, comments, parliamentary documents, and collective agreements);</li> <li>✓ A single-entry point for all the available legal information;</li> <li>✓ It increases the quality of legal reasoning, providing legal professionals with sources they couldn't use otherwise (for example, parliamentary documents can help to understand legislator's intentions).</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Equality of arms</b>	Resorting to such an instrument can significantly affect the chances to win the litigation. Being the platform private, there is the risk that it may turn out to advantage only the party who can afford it, with prejudice for the equality of arms.

<p><b>Profiling</b></p>	<p>The eventual application of this search engine to the administration of justice should take into consideration the potential risks deriving from the "Business pages" service. Information and figures on the Business page of a judge, for example, might prejudice its autonomy.</p>
<p><b>Other issues</b></p>	
<p><b>Development</b></p>	<p>The main issues related to the development of this search engine have been represented by the access to legal databases of the French Courts. The implementation of these should therefore provide a specific framework to regulated the data flows from the judicial system to the AI system developers.</p>

## b) ANOPPI-project

The Anoppi project produces tools for (semi)automatic anonymization/pseudonymization and content description of documents that contain personal data, notably judicial and administrative decisions<sup>19</sup>. The tools are developed by using the methods of NLP and machine learning. It developed two language technology-based artificial intelligence tools for automatic anonymization and content description of court decisions and other official decisions issued by authorities:

- ✓ Anonymization → ANOPPI is capable of automatically recognizing and marking key phrases to be anonymized and links between them, such as different references to the same person. On the basis of the analysis, the tool then provides the anonymizer with a suggestion for an anonymized document and flexible instruments to make any further modifications that

<sup>19</sup> <https://oikeusministerio.fi/en/project?tunnus=OM042:00/2018>

may be needed in the document. The language and semantic computing technology required in this work recognizes conceptual references to persons, organizations, locations and other details in text documents.

- ✓ Content description → The same technical solution and software will also be used for automatic content description, which refers to the search of key concepts essential to the contents of a document. This kind of self-learning automatic annotation (APPI) will enable intelligent search of documents and linking of them to other material, for example linking of legal cases to other similar cases and to the related legislation.

Through the implementation of the ANOPPI project, the Finnish Ministry of Justice intends to ensure open access to administrative decisions and case law would essentially improve the transparency of the entire public administration and the judicial system, in full compliance with the GDPR; the production, distribution, and further utilization of judicial and administrative decisions. A further benefit will be a faster processing of requests for information on official decisions within the public administration.

However, the development of the platform had to face some challenges since its start. First, The evaluation of ANOPPI showed that there is still some difficulty to build a general solution for anonymization, as the sufficiency of de-identification varies in each case. The category-based selection of named entities used in the current model is not sufficient if for example names of small companies should be anonymized but large ones should not. Second, another issue in the ANOPPI project is the lack of task-specific training data as we are not able to store and make use of real production data in order to continuously train ML models due to restrictions imposed by the GDPR<sup>20</sup>.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Finnish Ministry of Justice, in cooperation with Helsinki Centre for Digital Humanities (HELDIG), Aalto University, and Edita Publishing Ltd.
<b>Year</b>	2018

<sup>20</sup> A Oksanen et al., 'An Anonymization Tool for Open Data Publication of Legal Documents, in M Navas-Loro et al. (eds), JointProceedings of ISWC2022 Workshops: the International Workshop on Artificial Intelligence Technologies for Legal Documents (AI4LEGAL) and the International Workshop on Knowledge Graph Summarization (KGSUM) (2022)).

<b>Place of implementation</b>	Finland
<b>Legal sector</b>	Administrative law
<b>Sources</b>	Legal framework
<b>Recipients</b>	Authorities, citizens, and companies
<b>Description</b>	The Anoppi project produces tools for (semi)automatic anonymization/pseudonymization and content description of judicial and administrative decisions, which are documents that containing personal sensitive data.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Open access to administrative decisions and case law would essentially improve the transparency of the entire public administration and the judicial system, in full compliance with the GDPR.</li> <li>✓ Production, distribution, and further utilisation of decisions.</li> <li>✓ A further benefit will be a faster processing of requests for information on official decisions within the public administration.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Other issues</b>	
<b>Development</b>	<ul style="list-style-type: none"> <li>✓ The evaluation of ANOPPI showed that there is still some difficulty to build a general solution for anonymization, as the sufficiency of de-identification varies in each case.</li> <li>✓ Another issue in the ANOPPI project is the lack of task-specific training data as we are not able to store and make use of real production data in order to continuously train ML models due to restrictions imposed by the GDPR. That is why we ended up using a general NER model for</li> </ul>



	Finnish language along with configurable case-based rules.
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### 3.1.3 Extra-EU initiatives

#### a) CaseText

Casetext was conceived in 2013 as an online legal search engine that uses artificial intelligence (CARA AI) to assist with a brief review and inform search results to help lawyers enhance their research process. Nowadays, it is used in the US by a significant number of practitioners and companies, as well as by some state and federal judges (Ninth Circuit Court of Appeals, S.D.N.Y., e.g.). The search engine relies on a case law database with all US Statutes, Regulations, and Case Law in the Federal Courts and all fifty States. The research in the database is carried out through booleans, natural language, or our advanced A.I. search to get on-point results based on the same facts, legal issues, and jurisdiction<sup>21</sup>. Moreover, the search engine allows users to quickly understand if a case is relevant using case summaries written by judges and the summarization of parenthetical descriptions. Its citator, SmartCite, leverages its CARA tool to help find the most relevant cases for specific fact-pattern and adds an extra orange “flag” to indicate whether a case is still good law, or relies on an overruled opinion.

Case Text was conceived as a legal search engine alternative to the main players in this field, i.e., LexisNexis and Westlaw. The main difference between CaseText and its main competitors is the innovative AI technology adopted by the search engine:

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<sup>21</sup> Casetext <[www.casetext.com](http://www.casetext.com)>

- ✓ Parallel search → It is an intelligent search engine search that overcomes the limitations of keyword search to identify legal concepts. Leveraging transformer-based neural nets, Parallel Search uses complete sentences to find results with matching concepts, even if they use none of the same keywords. While traditional search technologies allow only for Boolean queries, i.e., they match queries with cases based on words and synonyms, transformer-based neural nets instead go beyond literal keyword matches.
- ✓ All Search → Built on the same powerful AI as Parallel Search, AllSearch can be used in a wide range of scenarios, from searching a single contract to reviewing millions of eDiscovery files and more:
  - a. Search for concepts in your firm's brief bank or internal document management system;
  - b. eDiscovery: adding AllSearch to your discovery workflow allows for sifting through millions of documents faster and cut review costs;
  - c. Transcripts: finding testimonies without searching the exact words the witness used;
  - d. Litigation Records: pinpointing information or documents needed in a pending litigation;
  - e. Contract Review: Input a contract term and instantly pull up the same term in other contracts, even if phrased differently;
  - f. Prior Art Searches: Uploading patents and articles to quickly find specific language to help invalidate a patent-in-suit.
- ✓ Compose → Compose is all-in-one research and drafting tool that provides all the arguments, legal standards, and pre-packaged research, thereby offering intelligent drafting for a variety of state and federal motions. Expert attorney editors compile and regularly update the arguments and legal standards on Compose, so you always have the most current and relevant information at your fingertips as you draft.

The main concerns regarding the deployment of this search engine pertain to the principle of equality of arms. Although the CaseText website mentions "transparent and reasonable prices", its uneven availability among lawyers may potentially affect the chance of success of the weaker party in the process.

Its application in the administration of justice may turn out to be problematic if not all the courts are equally able to rely on such instruments (like it already happens in the US), thus bringing about imbalances between the areas of the same country in terms of Courts' capabilities and efficiency.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	CaseText (private company)
<b>Year</b>	2013
<b>Place of implementation</b>	United States
<b>Legal sector</b>	civil/commercial/administrative - criminal
<b>Recipients</b>	Solo & Small Firms - Big Firms - Public Authorities - Law Schools
<b>Description</b>	Online Legal Search Engine providing semantic legal research, automated summarization (summarization of parenthetical description), and assistance in document drafting.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ User-friendly tools which save significant time on legal research, brief drafting and discovery.</li> <li>✓ Smarter AI means increased speed and greater accuracy.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Equality of arms</b>	Its uneven availability among lawyers may potentially affect the chance of success of the weaker party in the process.
<b>Other issues</b>	
<b>Deployment</b>	Its application in the administration of justice may turn out to be problematic if not all the courts are equally able to rely on such instruments, thus bringing about imbalances between the areas of a same country in terms of Courts' capabilities and efficiency.

## b) 'Rui judge'

With the 'Court Reform Plan Outline' from the Fourth Plenum in 2015, China committed to improving the transparency, efficiency, and professionalism of its judicial system. Specific reform actions include setting clearer evidence standards at trials and hearings, mechanisms for excluding 'illegally obtained evidence,' improving protections for lawyers and litigants against wrongful convictions, and minimizing judicial and police overreach<sup>22</sup>. Moreover, according to the 2020 'Guidelines for Next Generation Artificial Intelligence Development', China will rely on AI to improve its governmental services, especially in its law enforcement and judicial systems by introducing AI imaging and biometric recognition for use by public security agencies, and 'smart courts' and intelligent case analysis capabilities for the court system. Such goals partially overlap with Chinese AI innovation plans, such as the 2017 'New Generation Artificial Intelligence Development Plan' (AIDP), which represent the cornerstone of China's AI policy, and the fourteenth Five-Year Plan (2021-2025). As the AI policy allows a degree of flexibility for local courts to experiment with how to best meet objectives, many localities seized the chance to combine these initiatives<sup>23</sup>.

In this context, several AI-powered assistive systems have been developed for courts through partnerships with local companies, particularly to develop technologies such as cloud computing and big data retrieval further improve the usability of digital databases. An interesting AI system is the Court2Judge (C2J) platform 3.0 adopted by the Shanghai No.2 Intermediate People's Court in 2015. Court2Judge is a cloud database that hosts nine repositories including trial records, legal terms, and legal cases. Similarly, the Beijing High People's Court developed and deployed a 'Wise Judge' ('Rui Fa Guan' in Chinese) system in 2016, relying on nationwide judgment data drawn from China Judgments Online, which can apply to judges in Beijing region involved in drafting judgments to ensure that 'cases with similar facts received similar judgments'<sup>24</sup>.

Systems like C2J and Rui assist ongoing trials by retrieving past cases with similar details, including judgments and legal provisions, with the aim of reducing manual research time and reliance on memory prior to verdicts

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<sup>22</sup> Y Cui, *Artificial Intelligence and Judicial Modernization* (Singapore, Springer: 2020) 44-90.

<sup>23</sup> N Wang and MY Tian, 'Intelligent Justice': AI Implementations in China's Legal Systems', in A Hanemaayer (ed), *Artificial Intelligence and Its Discontents: Critiques from the Social Sciences and Humanities* (Palgrave MacMillan: 2022).

<sup>24</sup> C Shi, T Sourdin, and B Li, 'The Smart Court - A New Pathway to Justice in China?' (2021) 12(1) *International Journal for Court Administration* 4

and ensuring a fair application of legal standards. Moreover, judges can share learned experiences through these platforms, thus providing consultative and training material for other judges and new staff. Another function pursued by these platforms is to boost efficiency and reduce average trial time, thereby alleviating the increasing pressure from caseloads. Moreover, litigators are less worried that key details will be omitted or misunderstood by human clerks.

The accessibility to AI-augmented databases and search functionality also raises concerns<sup>25</sup>. The cases that AI algorithms present to judges might influence their perspective and prematurely influence their decision. Although AI-powered systems theoretically reduce misjudgment, each case contains different and unique social scenarios that may be de-emphasized when viewed collectively against past cases. Another concern is that codifying qualitative descriptions and legal provisions into algorithms and numeric data is very difficult. Moreover, specific definitions of certain legal terms may not be easily computerized and cannot be applied to all cases.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Beijing High People's Court
<b>Year</b>	2016
<b>Place of implementation</b>	Beijing (China).
<b>Legal sector</b>	civil/commercial/administrative - criminal
<b>Recipients</b>	Judges
<b>Description</b>	Legal search engine relying on nationwide judgment data drawn from China Judgments Online, which can assist judges in drafting judgments.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Reducing manual research time and reliance on memory prior to verdicts;</li> <li>✓ ensuring a fair application of legal standards;</li> <li>✓ reducing the pressure of caseloads;</li> <li>✓ reduction of average trial time.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	

<sup>25</sup> N Wang and MY Tian, "Intelligent Justice': AI Implementations in China's Legal Systems', cit.

<b>Legal issues</b>	
<b>Judicial autonomy</b>	The cases that AI algorithms present to judges might influence judge's perspective and prematurely influence their decision.
<b>Other issues</b>	
<b>Development</b>	<ul style="list-style-type: none"> <li>✓ codifying qualitative descriptions and legal provisions into algorithms and numeric data is very difficult</li> <li>✓ specific definitions of certain legal terms may not be easily computerized and cannot be applied to all cases.</li> </ul>

## 3.2 Assistance in drafting deeds

### 3.2.1 Extra Eu initiatives

#### a) Spellbook

Spellbook is a legal app launched by the legal software company Rally in 2022. It consists of an AI contract drafting tool powered by GPT-3, an autoregressive language model that uses deep learning to produce human-like text<sup>26</sup>. This very recent platform performs several tasks, assisting legal practitioners and firms in drafting contracts and legal deeds.

- ✓ Language Suggestion → It can draft new clauses and sections, taking the full context of the contract into account.
- ✓ Negotiation Suggestions → It can list common points for negotiation based on the contract.
- ✓ Term Summaries → It can produce short-term summaries for contracts and explain them.

Spellbook is an example of those AI systems deployed for assistance in drafting legal documents, notably wills, incorporation documents, real estate documents, loan agreements, promissory notes, and contracts.

<sup>26</sup> S Stevenson, 'We are excited to announce Spellbook, the first AI Contract Drafting tool Powered by GPT-3' 1 September 2021 available at <<https://www.rallylegal.com/blog/rally-launches-spellbook-the-first-ai-contract-drafting-tool-powered-by-gpt-3>>.

These tasks of 'document generation'<sup>27</sup> are often carried out through routine work, which could be replicated by an AI tool with a high degree of accuracy, resulting in financial savings and a reduction in time spent for firms and clients. In the long run, the goal of AI research in this field is to create tools that are capable not only of automating a form, but also tailoring it to the individual facts and arguments of a particular situation and even tracking its effect in future litigation. Software's ability to write motions, complaints, and other legal memos and briefs is instead more difficult to be obtained due to the generally non-routine and non-formulaic nature of the work<sup>28</sup>.

Nowadays, the programs remain largely inflexible and thus leave little room for practitioner insight or creative language. Plus, it remains unresolved the question whether the underlying questionnaires or form documents comply with changing legal rules, leaving many lawyers with questions of ethical dilemmas and fears of committing malpractice. Betts and Jaep offer an interesting overview of the current problems faced by the automation of legal document drafting by AI tools.

- ✓ *Contract drafting programs limit ingenuity and customization* → Some practitioners have criticized contract drafting programs as their 'fill-in-the-blanks' capabilities leave little room for 'meaningful customization'. Unfortunately, even the best programmers cannot foresee all possible scenarios at the time they craft the original algorithms.
- ✓ *Ethical questions for both practitioners and their clients* → From an ethical standpoint, the inherent inflexibility of these programs turned out to be troublesome. When the underlying law changes or other events occur, lawyers should adapt to new formats or include new types of contractual clauses. To keep up with such changes, lawyers will need to periodically re-code form documents, and may need to perform their own diligence to make sure that the drafting software's logic tree and output reflect their jurisdiction's most recent law. In case the logic trees are immutable, users will likely abandon the program, waiting for the next program version or update.

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<sup>27</sup> WS Veatch, 'Artificial Intelligence and Legal Drafting', 22 April 2019 <[https://www.americanbar.org/groups/business\\_law/publications/committee\\_newsletters/legal\\_analytics/2019/201904/ai-legal-drafting/](https://www.americanbar.org/groups/business_law/publications/committee_newsletters/legal_analytics/2019/201904/ai-legal-drafting/)>.

<sup>28</sup> "An example of this is analogical reasoning, which is a technique taught in law schools and used throughout the legal profession. It is central to the purposes of legal research, applying precedent, and arguing a case." SD Becerra, 'The Rise of Artificial Intelligence in the Legal Field: Where We Are and Where We Are Going (2018) 11 J Bus Entrepreneurship & L 27, 43.

- ✓ *Lawyers' hesitancy before the transition to technology* → Lawyers are hesitant to invest in and rely upon cutting-edge technology that may eventually that may replace their jobs. Despite this, many observers agree that the era of robo-lawyers has yet to come.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Rally in partnership with OpenAI (private companies)
<b>Year</b>	2022
<b>Place of implementation</b>	Canada
<b>Legal sector</b>	Civil and commercial law
<b>Recipients</b>	Legal professionals - Law firms - Corporations
<b>Description</b>	It consists of an AI contract drafting tool powered by GPT-3, an autoregressive language model that uses deep learning to produce human-like text
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Financial saving;</li> <li>✓ Reduction of time spent.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Other issues</b>	
Development	<ul style="list-style-type: none"> <li>✓ Contract drafting programs limit customization → Even the best programmers cannot foresee all possible scenarios at the time they craft the original algorithms.</li> <li>✓ Ethical questions for both practitioners and their clients → When the underlying law changes or other events occur,</li> </ul>



	<p>lawyers should adapt to new formats or include new types of contractual clauses. To keep up with such changes, lawyers will need to periodically re-code form documents, and may need to perform their own diligence to make sure that the drafting software's logic tree and output reflect their jurisdiction's most recent law.</p>
<p>Deployment</p>	<p>Lawyers' hesitancy before the transition to technology → Lawyers are hesitant to invest in and rely upon cutting-edge technology that may eventually that may replace their jobs. Despite this, many observers agree that the era of robo-lawyers has yet to come.</p>

### 3.3 Analysis (predictive, scales)

#### 3.3.1 Introductory considerations

This category of AI systems is the most fascinating for the possible reach of its goals, i.e., the automation of legal reasoning and problem-solving. Automation of legal reasoning is based on the idea that formal logic can be used to capture the linguistic structure of legal texts, norms, and arguments and make inferences based on this legal knowledge<sup>29</sup>.

<sup>29</sup> LK Branting, 'Data-centric and logic-based models for automated legal problem solving' (2017) 25(1) Artificial Intelligence and Law 5

- I. Rule-Based Systems → By the 1980s, several projects had implemented working systems based on manually created logical representations of rules, to be processed by a logical inference engine. The basic idea behind Rule-Based Systems is that legal provisions can usually be represented as rules, and that legal reasoning is based on inferences based on the application of rules to facts. The leading approach has consisted in modelling legal knowledge through conditional statements (rules), built using a subset of predicate logic (possibly extended with aspects of defeasibility or probabilistic reasoning). The main components of a rule-based system are<sup>30</sup> (1) a rule base, containing the legal rules; (2) an inferential engine, also called rule interpreter, which applies legal rules to factual information related to specific cases. Information related to cases may be provided by human users or may be automatically extracted from external databases.
- II. Argumentation-Based Systems → These computer systems develop justifications for solutions to controversial points, suggest possible arguments, and evaluate the state of each argument in light of the overall argumentative architecture resulting from all the information provided to the system. The development of such systems has required new languages for representing knowledge, sufficiently expressive to capture the fundamental structures of legal knowledge (rules, rights, cases, principles, values, etc.), as well as new methods of inference, which reproduce the typical steps in legal reasoning (application of rules, reference to precedents, teleological reasoning, etc.), and multiple ways to build arguments and organize them. Argumentation-based systems have not yet been commercially successful in the legal domain. However, they may be useful for legal experts, and in particular lawyers, in preparing, analyzing, and presenting their arguments. They may be also useful for judges, helping them to understand the interaction of arguments presented by the parties and to develop their own arguments.
- III. ML and Data-centric approach → Both the rules-based and the argumentation-based systems need humans to provide updated computable representations of law. The recent “wave”<sup>31</sup> of computable law led by Data and Machine Learning brought about a paradigm shift in this sense, as Machine Learning substituted the human-made representation of knowledge. Applying learning algorithms to vast datasets, computers build their own model of the domain, through which they generate

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<sup>30</sup> G Contissa and G Sartor, 'How the Law Has Become Computable', cit.

<sup>31</sup> G Contissa, C Sartor, 'AI to serve the efficiency and the quality of justice', cit.

classifications, evaluations, and predictions for new cases submitted to it. As ML systems rely on data to function, updating and expanding the datasets automatically improve the model and the system's predictive capabilities. We have already seen that data-centric approaches could be distinguished between document-oriented and case-oriented. As in the last section we have seen the document-oriented approaches adopted in advanced search engines, it remains to analyze here the case-oriented approaches.

Relying on models extracted from vast sets of cases, Case-Oriented Approaches typically provide aggregate statistical information about such cases, and may also be used to predict specific aspects of new cases, such as their duration, costs, and potential awards or punishments, as well as to calculate the probability that claims, motions, or other pleadings succeed. For this purpose, their models embed correlations between features of cases on one side and decisions and/or factual forecasts on the other. In other words, these models analyze factors related to the merit of the case, such as lexical features, events, narratives, and procedural history, but often also factors not related to the merit, such as the nature of the suit, the attorneys, the venue, the judge, and the parties. Based on such factors, models are able to make predictions about the behavior of the parties to a proceeding or about the decision of specific judges.

As one might expect, one of the main areas of interest is litigation assistance for the parties and the legal practitioners, who can obtain information about the likelihood of success at trial. Indeed, these systems enable lawyers to get a sense of their chances of success, to select or search for aspects of the case that increase their chances of success, and to better develop their arguments. However, the implementation of such systems in the field of the administration of justice may bring about some clear advantages. First, as these systems provide figures regarding the chances of success at trial, they may prevent lawyers from starting "hopeless" litigations, thus alleviating the workload of the courts. Second, these systems could be also directly used within courts because they enable judges to gain a better sense of trends in case law and to see how a possible decision would stand in the context of case law. They would be able to be aware in advance of the existing correlations between features of cases and decisions and factual elements<sup>32</sup>.

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<sup>32</sup> DL Chen, 'Judicial analytics and the great transformation of American Law', *Artificial Intelligence and Law* (2019) 27:15-42.

In particular, 'cognitive computing'<sup>33</sup> is a recent innovation in the development of legal applications bridging the analysis of legal texts through machine learning with the relevant legal sources and rationales. It is aimed to detect relevant elements in the text, such as parts containing applicable provisions, judicial holdings and findings of fact; the arguments that justify the proposed conclusions; and the legal and factual reasons in favor or against the proposed outcome. In the legal domain, cognitive computing can profit from 'argument mining', which includes a set of techniques and technologies focused on identifying and analyzing argument-related information, such as premises and conclusions, relationships between arguments and counterarguments, the strengths or weaknesses of claims, and the rationale for legal decisions.

A cognitive computing approach may support judges and other legal experts:

- ✓ in investigating and answering legal questions;
- ✓ providing explanations for their decisions;
- ✓ making arguments for and against legal conclusions;
- ✓ improving predictions about case outcomes.

### 3.3.2 EU initiatives

#### a) DataJust

DataJust is an ML algorithm developing an indicative baseline of compensation for personal injuries. It was primarily designed as a tool for analyzing case law data, originating both from judicial and administrative courts, relating to compensation for personal injuries. According to a Decree on 27 March 2020<sup>34</sup>, the DataJust algorithm would have been deployed in the French judicial system for a duration of two years. This baseline system was made available not only to judges, but also to lawyers, insurers, and victims, in order to assess the amount of compensation to which they may be entitled. The main aims of this initiative were offering judges, insurers, lawyers, compensation funds, and victims a better financial assessment of personal injuries on one hand, and guaranteeing equal and fair treatment of personal injury compensation claims on the

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<sup>33</sup> KD Ashley, *Artificial Intelligence and Legal Analytics: New Tools for Law Practice in the Digital Age*, cit.

<sup>34</sup> Republic of France, "Décret N° 2020-356 Du 27 Mars 2020 Portant Création d'un Traitement Automatisé de Données à Caractère Personnel Dénommé «DataJust» <<https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000041763205>>.

other. Moreover, providing private parties with this tool would have encouraged out-of-court settlements, thereby reducing the courts' workload.

The implementation of DataJust allowed the development of a database grouping together allocated compensation amounts according to the type of injury/damage suffered and their seriousness. More specifically, the Decree provided that the data to be included in the *DataJust* database would have been extracted from appellate court decisions handed down between 1 January 2017 and 31 December 2019, by both administrative and civil courts in disputes relating solely to compensation for personal injuries. Various information may then be extracted/anonymized, in particular, the last names and first names of the natural persons mentioned in the decision, certain identification elements such as gender, date of birth, or place of residence, and above all data and information relating to the injuries suffered.

As anticipated, the benefits entailed by the deployment of this algorithm are clear. First, DataJust contributes to reducing the number of disputes brought to courts, thereby alleviating the increasingly suffering from a lack of resources at their disposal. Second, the development and use of this algorithm can lead to fairer, more egalitarian, and less fluctuating compensation from one individual to another and from one court to another. Interestingly, a study carried out by the French Law and Justice Research Committee revealed that French courts relied on various decision-making tools to harmonize their own decisions, but no tool was shared and applied by all courts so the discrepancies in decisions from one court to another were not faced at all.

However, there are some risks associated with the deployment of this algorithm. Although the reduction in the number of disputes prevents court congestion, it is also true that it keeps potential litigants away from the administrative and judicial courts, thus leaving them alone in their compensation negotiations with the insurers. These negotiations could easily be unbalanced in favor of the insurer and deprive the individual of the procedural guarantees offered by submitting their claim to an impartial third party<sup>35</sup>. Moreover, the association for the promotion and defense of fundamental freedoms in the digital environment 'La Quadrature du Net'

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<sup>35</sup> DataJust: Towards a predictive Justice? <<https://www.soulier-avocats.com/en/datajust-towards-a-predictive-justice/>>.

challenged before the French Council of State the Decree introducing DataJust as it disregarded the proportionality of personal data in relation to the purposes for which they are processed (Art. 5 (1) (c) GDPR), the “lawfulness, fairness and transparency” of the algorithm (Art. 5 (1) (a) GDPR), and the purpose limitation of the personal data, which was collected for purposes incompatible with those provided for by the DataJust processing (Art. 5 (b) GDPR)<sup>36</sup>. However, on 30 December 2021, the Council of State approved the decree and rejected the petition of the association.

In 2022, the Ministry of Economy abandoned the development of DataJust, due to the strong criticism accompanying its implementation, as well as the complexity of its development<sup>37</sup>. The limited duration of the algorithm (the information and personal data recorded were kept for the time necessary for the development of the algorithm, and would have not, in any case, exceeded two years from the publication of the DataJust decree) left small room for maneuver to complete the development of DataJust, which was becoming increasingly unfeasible within the time frame. Plus, the algorithm’s database was biased, as the first-instance decisions had not been taken into account. On the other hand, studying and preventing algorithmic biases was very complicated, as it required expertise of a personal injury.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Ministry of Justice
<b>Year</b>	2020-2022
<b>Place of implementation</b>	France
<b>Legal sector</b>	Civil - Administrative
<b>Recipients</b>	Judges - Professionals - Insurers - Parties
<b>Description</b>	An ML algorithm developing an indicative baseline of compensation for personal injuries.

<sup>36</sup> [https://www.laquadrature.net/wp-content/uploads/sites/8/2021/12/LQDN\\_DataJust\\_MC1.pdf](https://www.laquadrature.net/wp-content/uploads/sites/8/2021/12/LQDN_DataJust_MC1.pdf)

<sup>37</sup> MC Benoit, ‘The Ministry of Economy abandons the development of DataJust, the algorithm that should help calculate compensation for personal injury’ (ActuIA: 17 January 2022) < <https://www.actuia.com/english/the-ministry-of-economy-abandons-the-development-of-datajust-the-algorithm-that-should-help-calculate-compensation-for-personal-injury/>>.

<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Offering judges, insurers, lawyers, compensation funds, and victims a better financial assessment of personal injuries;</li> <li>✓ Guaranteeing equal and fair treatment of personal injury compensation claims;</li> <li>✓ Providing private parties with this tool would have encouraged out-of-court settlements, thereby reducing the courts' workload.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Data</b>	Concerns regarding the proportionality of personal data in relation to the purposes for which they are processed (Art. 5 (1)(c) GDPR), the "lawfulness, fairness and transparency" of the algorithm (Art. 5 (1) (a) GDPR), and the purpose limitation of the personal data, which was collected for purposes incompatible with those provided for by the DataJust processing (Art. 5 (b) GDPR)
<b>Access to Justice</b>	Keeping potential litigants away from the administrative and judicial courts, it leaves them alone in their compensation negotiations with the insurers. These negotiations could easily be unbalanced in favor of the insurer and deprive the individual of the procedural guarantees offered by submitting their

	claim to an impartial third party.
<b>Other issues</b>	
<b>Development</b>	<ul style="list-style-type: none"> <li>✓ The limited duration of the algorithm left small room to complete its development;</li> <li>✓ The algorithm's database was biased, as the first-instance decisions had not been taken into account;</li> <li>✓ Studying and preventing algorithmic biases turned out very complicated, as it required expertise of a personal injury.</li> </ul>

## b) Predictice (France)

Predictice is a French start-up created in 2016 that operates in the field of legal information for practitioners. It was designed for mass litigation like social law or family law, whereas criminal law was excluded from its scope because of ethical principles.

Initially designed for lawyers, Predictice acts as a tool of predictive justice. It aims at calculating the chances of success of legal actions according to the legal basis, the amount of the indemnities, and the duration of the procedure by analyzing millions of documents, laws, and judicial decisions from the Predictice database, as well as the information provided by the user.

1. First, leveraging the standards of the legal language, the developers provided the automation of the indexing and the integration of data by adding metadata (the metadata relates the characteristics of the dispute, for example: what was the compensation requested, and what was actually obtained? Was it an appeal or a first-instance judgment?). In this way, Predictice offers its users a search engine capable of providing all the useful information relating to a dispute (comments, jurisprudence, doctrine).



2. Second, based on automated indexing and metadata, algorithms are used to identify the association between a factor or combination of factors (multivariate analysis) and case closure thereby enabling the lawyers to assess the probability of success of a dispute. This objective is reached through the use of Google's SyntaxNet algorithm. This syntactic analysis tool helps machines interpret human language and allows, in our case, to identify the correlation between words to extract their sense. The text is then subjected to classification/regression algorithms (Vapnik's SVM) and association rules (Frequent Pattern Vertical) to create complex prediction models<sup>38</sup>.
3. The third and final step consists in evaluating and comparing different procedural strategies so that the lawyer can construct, on the basis of the variables of the case, the argument that strategically has the greatest probability of success.

The deployment of this platform entails several positive aspects. The predictability of a judgment could represent a value for society. As noted above, predictability may contribute to reducing the demand for justice in case little chance of success at trial is previously forecasted. On the other, predictability could work for judges, as it would enable them to decide with greater awareness whether to put into action a change in jurisprudence. Finally, the speed of the algorithm's decision-making processes could bring about efficiency and additional productivity, letting the magistrates spend time on other matters, such as collecting evidence or interviewing suspects.

However, the 2017 pilot project led by the Directorate of Judicial Services (part of the French Ministry of Justice), which tested the application of Predictice to the Courts of Appeal of Rennes and Douai and the Bar of Lille, turned out to be unsuccessful. The judges claimed that the tested version of the software "lacked added value" in the decision-making work, as they already had the means to make such analysis themselves with their skills and the information they had on hand. Moreover, software reasoning errors were revealed, leading to anomalous or inappropriate results, due to the confusion between simple lexical frequencies of the judicial motivations and the causality which had been decisive in the reasoning of the judges in question. This bad feedback contributed to adding new features to Predictice's AI system, which entered a new phase of experimentation, on a voluntary basis, with other French Courts of Appeal.

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<sup>38</sup> Predictice.com <<https://predictice.com/fr>>

Moreover, the use of this algorithm by both legal practitioners (i.e., litigants, lawyers, insurers, ...) and judges implies also some inherent risks. As for the development of the algorithm, its programming process lacks transparency and explainability, especially in relation to the classification of legal material. When it comes to the deployment, the use of judicial statistics implies a twofold risk: the peculiarities of a single concrete case may not be taken into consideration; the predictive platform could induce conformity, as it might make judges choose the "most comfortable" path thereby flattening - rather than harmonizing - their decisions.

Another considerable risk lies in the potential expansions of the algorithm, as it could take into consideration also which is the assigned judge thereby carrying out the profiling of the judges based on their decisions, with harmful consequences for their free determination in the individual concrete case. Interestingly, a case regarding Predictice inspired the prohibition to publish the name of the judging subjects in the sentences with the aim of prohibiting the prediction of the sentences, under penalty of imprisonment up to 5 years<sup>39</sup>. The amendment of the French legislation on digital services prohibits the publication of judges' data in order to evaluate or analyze their professional practices. The case concerned the project of a French lawyer who highlighted the orientation of some French judges regarding asylum requests by foreign subjects through Predictice. The names of the judges were published on an open webpage, endangering not only the independence of the judgment of the judge in question but his or her own safety.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Predictice (private company)
<b>Year</b>	2016 (pilot project: 2017)
<b>Place of implementation</b>	France (pilot project in the courts of Courts of Appeal of Rennes and Douai)
<b>Legal sector</b>	Civil law (esp. family and social law) - Criminal law excluded for ethical principles.

<sup>39</sup> The prohibition was introduced by art. 33 of law 2019-222 of 23 March 2019 for the 2018-2022 programming of justice reform, which modified various legal texts (*code de justice administrative, code de l'organisation judiciaire, code du commerce, etc.*)

<b>Recipients</b>	Law firms; Legal departments; Insurance companies; partnerships with bar associations.
<b>Description</b>	Based on the analysis of the jurisprudence, Predictice algorithm calculates: <ul style="list-style-type: none"> <li>✓ the chances of success of a legal action according to the legal basis;</li> <li>✓ the amount of the indemnities;</li> <li>✓ the duration of the procedure.</li> </ul>
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Predictability may contribute to reducing the demand for justice in case little chance of success at trial is previously forecasted.</li> <li>✓ Predictability could work for judges, as it would enable them to decide with greater awareness whether to put into action a change in jurisprudence.</li> <li>✓ Finally, the speed of the algorithm's decision-making processes could bring about efficiency and additional productivity, letting the magistrates spend time on other matters, such as collecting evidence or interviewing suspects.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Profiling</b>	The algorithm could take into consideration also which is the assigned judge thereby carrying out the profiling of the judges based on their decisions, with harmful consequences for their free determination in the individual concrete case.
<b>Other issues</b>	

<p><b>Development</b></p>	<ul style="list-style-type: none"> <li>✓ Software reasoning errors were revealed, leading to anomalous or inappropriate results, due to the confusion between simple lexical frequencies of the judicial motivations and the causality which had been decisive in the reasoning of the judges in question.</li> <li>✓ Programming process lacks transparency and explainability, especially in relation to the classification of legal material.</li> </ul>
<p><b>Deployment</b></p>	<ul style="list-style-type: none"> <li>✓ Performative effect → The tool influences the decision and the way the case will be argued by suggesting certain solutions. The risk is to consolidate a state of affairs which no legal innovation.</li> <li>✓ "Lack of added value" → no disruptive effect in the legal reasoning of the judges.</li> <li>✓ The peculiarities of a single concrete case may not be taken into consideration.</li> </ul>

### 3.3.3 Extra EU initiatives

#### a) ROSS Intelligence

ROSS Intelligence is a predictive platform that applies to the legal field on of the most successful AI systems combining text analytics with predictive functionalities, IBM's Watson<sup>40</sup>. At the moment, ROSS is not anymore in the market due to lawsuit against ROSS brought by one the main LegalTechs in the sector, Thomson Reuters, alleging that ROSS Intelligence had stolen "critical features" of Thomson Reuters' Westlaw legal research platform to develop its own legal research offering<sup>41</sup>.

In a few words, IBM Watson learns the correlations between questions and answers in a certain domain and then relies on this knowledge to analyze new input questions and generate new possible answers by extracting information from vast sets of documents: (1) for each candidate answer a new hypothesis is generated; (2) for each hypothesis, DeepQA tries to find evidence supporting or refuting it; (3) the process results in a ranked list of candidate answers with a specific confidence score; (4) the system self-updates, when new information is made available.

ROSS presents two main features<sup>42</sup>:

1. AI Legal Search Engine → It accepts questions in plain English and returns answers based on legislation, case law, and other sources, while also monitoring new materials added to the corpus that may be relevant to a user's previous queries. As users submit new versions of a question, the system forms new links between them and its pre-stored answer, thereby learning from users' feedback.
2. Brief Analyzer (EVA) → It carries out the automated analysis of the briefs. The system processes the brief and creates hyperlinks to every case cited in the brief. The system can also check the subsequent history of cited cases and find cases having similar language as the brief.

Unlike other models analyzed in this Appendix, Ross has been aimed mainly to assist lawyers' activities. For example, in 2016, the world's first artificially intelligent lawyer was hired by the US law firm BakerHostetler<sup>43</sup> in its bankruptcy, restructuring, and creditors' rights team. As a "robot

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<sup>40</sup> G Contissa and G Sartor, 'AI to serve the efficiency and the quality of justice', cit.

<sup>41</sup> L Moran, 'ROSS Intelligence will shut down amid lawsuit from Thomson Reuters' (AbaJournal, 11 December 2020) < <https://www.abajournal.com/news/article/ross-intelligence-to-shut-down-amid-thomson-reuters-lawsuit>>.

<sup>42</sup> G Contissa and G Sartor, 'How the Law Has Become Computable', cit., 37.

<sup>43</sup> K Turner, 'Meet Ross' the Newly Hired Legal Robot, (Washington Post, 16 May 2016) <[http://www.washingtonpost.com/news/innovations/wp/2016/05/16/meet-ROSS-the-newlyhired-legal-robot/?utm\\_term=.421137862a3e](http://www.washingtonpost.com/news/innovations/wp/2016/05/16/meet-ROSS-the-newlyhired-legal-robot/?utm_term=.421137862a3e)>.

lawyer”, ROSS was deployed principally in the areas of document searches and classification discovery. A pivotal difference between currently used legal research engines and ROSS is the manner in which a search is generated and the results<sup>44</sup>. While traditional search engines rely on keywords to perform a search, ROSS uses natural language processing, which allows the system to learn, through repetition, to understand the intent behind questions and bring back relevant information based on it. In addition, ROSS creators have implemented "a law monitor button" that enables ROSS to check the most current law relevant to the inquiry. Besides the benefits, some risks should be taken into consideration.

The first concern pertains to who is held accountable and the liability in case the algorithm mistakes<sup>45</sup>. Given the particular nature of machine learning, it could turn out to be problematic to understand whether the liability for ROSS’s mistakes lies in the lawyer who used it or in the developer, who gave the machine the “initial instructions” to work. Moreover, the increased efficiency brought about by the deployment of this tool could facilitate bigger and more profitable law firms at the expense of others, thus causing some concerns regarding access to justice and the principle of equality of arms. Another issue is the confidentiality of the lawyer-client relationship, which could be negatively affected in case personal data of the clients would be stolen due to hackers, ransomware attacks, and metadata leaks.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	ROSS Intelligence (private company)
<b>Year</b>	2014-2022
<b>Place of implementation</b>	United States
<b>Legal sector</b>	Consumer Protection; Personal Bankruptcy; Debts restructuring; Insolvency; Litigation, including defending against lender liability actions, fraudulent

<sup>44</sup> C Nunez, 'Artificial Intelligence and Legal Ethics: Whether AI Lawyers Can Make Ethical Decisions' (2017) 20 Tul J Tech & Intell Prop 189

<sup>45</sup> S Semmler and Z Rose, 'Artificial Intelligence: Application Today and Implications Tomorrow' (2017-2018) 16 Duke L & Tech Rev 85.

	conveyance claims, and challenges to acquisitions.
<b>Recipients</b>	Lawyers (notably Law firms)
<b>Description</b>	A predictive legal platform that applies the IBM Watson system.
<b>Expected</b>	
<ul style="list-style-type: none"> <li>✓ Time saving</li> <li>✓ Efficiency and profitability for the law firms</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Equality of arms</b>	The increased efficiency brought about by the deployment of this tool could facilitate bigger and more profitable law firms at the expense of others, thus causing some concerns regarding access to justice and the principle of equality of arms.
<b>Liability</b>	Given the particular nature of machine learning, it could turn out to be problematic to understand whether the liability for ROSS's mistakes lies in the lawyer who used it or in the developer, who gave the machine the "initial instructions" to work.
<b>Clients' confidentiality</b>	The confidentiality of the lawyer-client relationship could be negatively affected in case the personal data of the clients would be stolen due to

	hackers, ransomware attacks, and metadata leaks.
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## b) COMPAS software

Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) is a case management and decision support tool to assess defendants' risk of recidivism. It is used by the U.S. courts in the states of New York, Wisconsin, California, and Florida's Broward County. For each offender COMPAS calculates an individual 'risk score' which will have an impact on the subsequent sentence. If the software scores a high risk for a defendant on a scale of 1 to 10, the judge does not allow probation but imposes a prison sentence. Northpointe created risk scales for general and violent recidivism, and for pretrial misconduct:

1. Pretrial release risk scale → Pretrial risk is a measure of the likelihood for an individual to fail to appear and/or to commit new crimes after the release. It is based on several indicators, such as current charges, pending charges, prior arrest history, previous pretrial failure, residential stability, employment status, community ties, and substance abuse.
2. General recidivism scale → The general recidivism scale is designed to predict new offenses upon release. The scale uses an individual's criminal history and associates, drug involvement, and indications of juvenile delinquency.
3. Violent recidivism scale → It predicts violent offenses following release, by using data regarding a person's history of violence, history of non-compliance, vocational/educational problems, the person's age-at-intake, and the person's age-at-first-arrest.

Being one of the best-known examples of judicial AI, COMPAS has been the subject of both harsh criticisms and enthusiasm for its potential.

COMPAS's supporters stress the fact that COMPAS is a reliable machine-learning tool capable of avoiding the so-called "hungry judge effect"<sup>46</sup>, whereby judges turn out to be keener on being lenient after a meal but more severe before the break. In other words, the deployment of algorithms in sensitive decisions regarding the personal freedom of the defendant could reduce the risks deriving from judges' emotional and

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<sup>46</sup> Against the hungry judge effect as justifier, see K Chatziathanasiou, "Beware the Lure of Narratives: "Hungry Judges" Should Not Motivate the Use of "Artificial Intelligence" in Law" (2022) 23(4) German Law Journal 452-464.



physical status thereby ensuring a higher degree of objectivity. Some studies supporting this position provide proof of the benefits: based on datasets of about 150,000 US felony cases, a policy simulation shows that a release rule according to machine learning predictions would reduce the jail population by 42% with no increase in crime rates, or reduce crime rates by 25% without changing the jail population<sup>47</sup>.

However, several criticisms have been raised against the application of an algorithm in the administration of criminal justice.

- ✓ First, the application of COMPAS in the criminal procedure exposes the rule of law to serious potential risks. As the courts increasingly rely on AI-driven systems to determine a person's risk for recidivism, the defendant - and the public - will be unable to contest any suspected infringement or manipulation of their rights. These hurdles to meaningfully appeal an adverse decision call into question the principle of due process. Plus, criticisms have been raised in relation to the fact that COMPAS is used not only as an 'investigative prediction tool' but also as a 'decision substitute' replacing a judge's decision. An example of this is provided by the 2013 Eric Loomis's case. In judging Eric Loomis's risk of recidivism, the trial court judge merely referred to Loomis' score provided by COMPAS. On appeal, the Wisconsin Supreme Court held the use of closed-source recidivism assessment software does not necessarily violate the principle of due process rights "even though the methodology used to produce the assessment was disclosed neither to the court nor to the defendant", though the judge must not rely on the risk score exclusively<sup>48</sup>.
- ✓ Second, the use of a private company's software, whose algorithms are subject to trade secrets<sup>49</sup>, prevents the public authorities from examining the whole procedure. As a result, no control is possible on software developers' bias, customs, culture, knowledge and context when developing algorithms, as well as their intentions.
- ✓ Third, the lack of transparency might also produce negative effects on the right to non-discrimination. An algorithm-driven software like COMPAS sorts and classifies people without any possibility of control for those who are potentially affected. Although the data used by COMPAS do not

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<sup>47</sup> J Kleinberg, H Lakkaraju, J Leskovec, J Ludwig, and S Mullainathan, 'Human decisions and machine predictions', (2017) National Bureau of economic research. Working Paper 23180 <[www.nber.org/papers/w23180](http://www.nber.org/papers/w23180)>.

<sup>48</sup> State of Wisconsin v. Eric Loomis, 7. 881 N.W.2d 749 (Wis. 2016).

<sup>49</sup> GN La Diega, 'Against the dehumanisation of decision-making - algorithmic decisions at the crossroads of intellectual property, data protection, and freedom of information' (2018) 9 (1):J Inlect Prop Inf Technol Electron Commerce Law 3-34.

contain a person's race, other aspects of the collected data might be correlated to race that can entail racial disparities in the predictions. In 2016, the non-profit organization ProPublica rolled out an investigation of the algorithm<sup>50</sup> according to which "blacks are almost twice as likely as whites to be labeled a higher risk but not actually re-offend," whereas COMPAS "makes the opposite mistake among whites: they are much more likely than blacks to be labeled lower-risk but go on to commit other crimes"<sup>51</sup>. Not only does the algorithm embed the cognitive biases and prejudices of its developers, but also perpetuates the existing patterns of discrimination contained in its training datasets, due to the lack of transparency and accountability.

Besides these legal issues, another main concern regards the technical accuracy of the mechanism. A 2018 study compared the ability of COMPAS and untrained humans to predict recidivism in a fair and accurate way<sup>52</sup>. The results demonstrate that people from a popular online crowdsourcing marketplace, who have little to no expertise in criminal justice, are as accurate and fair as COMPAS at predicting recidivism. In addition, the same study shows that the accuracy of COMPAS on one data set can be explained with a simple linear classifier. Indeed, although COMPAS uses 137 features to make a prediction, the same predictive accuracy can be achieved with only two features. It finally shows that more sophisticated classifiers do not improve prediction accuracy or fairness. Collectively, these results cast significant doubt on the entire effort of algorithmic recidivism prediction.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Northpointe
<b>Year</b>	2012 (adopted for the first time in the state of Wisconsin).
<b>Place of implementation</b>	US (New York, Wisconsin, California, and Florida's Broward County)

<sup>50</sup> J Angwin, J Larson, S Mattu and L Kirchner, 'Machine Bias. There's software used across the country to predict future criminals. And it's biased against blacks.' (ProPublica; 23 May 2016).

<sup>51</sup> However, some observers contested the outcome of the investigation. See CRJ A Flores, C Lowenkamp, K Bechtel, 'False Positives, False Negatives, and False Analyses' (2016) 80(2) Federal Probation Journal.

<sup>52</sup> J Dressel and H Farid, 'The accuracy, fairness, and limits of predicting recidivism' (2018) 4(1) Sci Adv.

<b>Legal sector</b>	Criminal law (predictive policing)
<b>Recipients</b>	Judges
<b>Description</b>	A case management and decision support tool to assess defendants' risk of recidivism.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Avoiding the so-called "hungry judge effect": the deployment of algorithms in sensitive decisions regarding the personal freedom of the defendant could ensure a higher degree of objectivity.</li> <li>✓ Some studies provided proof that a release rule according to machine learning predictions would reduce the jail population by 42% with no increase in crime rates, or reduce crime rates by 25% without changing the jail population.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Rule of law, due process</b>	As the courts increasingly rely on AI-driven systems to determine a person's risk for recidivism, the defendant - and the public - will be unable to contest any suspected infringement or manipulation of their rights.
<b>IP</b>	The use of a private company's software, whose algorithms are subject to trade secrets, prevents the public authorities from examining the whole procedure.
<b>Discrimination</b>	An algorithm-driven software like COMPAS sorts and classifies people

	<p>without any possibility of control for those who are potentially affected. Although the data used by COMPAS do not contain a person's race, other aspects of the collected data might be correlated to race that can entail racial disparities in the predictions.</p>
<b>Other issues</b>	
<p><b>Accuracy</b></p>	<p>A 2018 demonstrated that:</p> <ul style="list-style-type: none"> <li>✓ people from a popular online crowdsourcing marketplace, who have little to no expertise in criminal justice, are as accurate and fair as COMPAS at predicting recidivism;</li> <li>✓ that, although COMPAS uses 137 features to make a prediction, the same predictive accuracy can be achieved with only two features;</li> <li>✓ that more sophisticated classifiers do not improve prediction accuracy or fairness.</li> </ul>

### c) HART (Harm Assessment Risk Tool)

The Harm Assessment Risk Tool (HART) is a predictive policing algorithm developed by statistical experts based at the University of Cambridge in collaboration with Durham Constabulary and launched in May 2017 and

withdrawn in September 2020. It was aimed to assist the assessment of custody officers over the risk of future offending by predicting whether an offender is “high risk” (a new serious offense within the next 2 years), “moderate” (a non-serious offense within the next 2 years), or “low risk” (no offense within the next 2 years) over a two-year period after the arrest. Those arrestees who were forecasted as ‘moderate risk’ to be eligible for the Constabulary’s Checkpoint program. Checkpoint consists of an ‘out of court disposal’ - i.e., a way of dealing with an offense not requiring prosecution in court - aimed at reducing future offending. The Checkpoint program identifies why an individual adult has offended, along with the best interventions and services to support the individual in turning away from crime. The central goal of the deployment of HART is to promote consistency in decision-making, enabling targeted interventions and rigorous testing to find responses to offending that reduce future harm and recidivism.

HART is built using random forests, which is one of many different forms of machine learning. This technique offers features such as the ability to detect relatively rare but dangerous outcomes, to model relationships in non-linear ways, and to balance the differential costs of different kinds of errors<sup>53</sup>. The assessments rely on a training dataset composed of 104,000 custody events from a period between January 2008 and December 2012. It uses 34 different predictors to arrive at a forecast based on the prior offender’s history of criminal behavior. The random forest is constructed from 509 separate classification and regression decision trees (CART), which are then combined into the full forecasting model. Each tree produces its own forecast which is then used as one vote out of 509 total votes. The votes are counted, and the overall forecast for the full model becomes the outcome that receives the most votes. Inevitably, it might happen that HART produces errors. In this case, the random forests technique treats different types of errors as being differentially ‘costly’. The errors with the highest costs are avoided, and therefore occur less frequently than those that are less costly. The HART model intentionally favors - and therefore applies - “cautious errors”, where the offenders’ levels of risk are over-estimated, over “dangerous errors”, where the opposite occurs. Indeed, under-estimates of the offenders’ actual risk levels, referred to as dangerous errors, are assigned a higher cost and

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<sup>53</sup> G Barnes and JM Hyatt, ‘Classifying Adult Probationers by Forecasting Future Offending’, Final Technical Report, March 2012 <https://www.ncjrs.gov/pdffiles1/nij/grants/238082.pdf>

therefore occur less frequently (the ratio is two cautious errors for each dangerous error)<sup>54</sup>.

An independent validation study<sup>55</sup> carried out in 2016 with custody data for the full year of 2013 was used for the validation (just under 15,000 custody events). The model's forecasts for each custody event during 2013 were then compared to the actual, known outcomes over the following 24 months. The 2013 validated accuracy overall of the model was 62.8%. The largest loss of accuracy in validation occurred amongst those that had actual high-risk outcomes, where the accuracy rates were 52.7%. The interesting point of this pretty low level of accuracy lies in the distribution of the types of forecasting errors. The error distribution in validation indicated a majority in cautious errors as opposed to dangerous errors. While both types of errors increased in the validation cohort with respect to the construction validation, over-estimates of risk expanded further than under-estimates, whereas the rates of the most dangerous form of error - forecasted as low risk, but actually high risk - remained stable. This means that the cost ratios built into the random forest model successfully ensured that the least-desirable errors were minimized despite the low level of accuracy. On the other hand, the "cautiousness" of the model, which systematically overestimates the risk of individual offenders, raised some ethical questions about the consequences that this intentional inaccuracy might have. Favorable opinions instead recall the need for protecting the public from the risk of high harm as an ethical justification.

The generalized implementation of HART beyond the scope of the experiment raises some concerns, which will be analyzed as follows.

- ✓ HART cannot possibly record and assess all factors that affect the output. For this reason, Durham Constabulary concluded that the tool can only ever function as decision-support, but never substitute the human decision-making process. However, it is still unclear how the deployment of algorithmic tools within policing will affect decision-making processes within police forces. There is the risk that the imposition of an algorithm in decision-making limits or filters the information considered in practice, thus influencing custody officers' discretion.

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<sup>54</sup> M Oswald, J Grace, S Urwin and GC Barnes, 'Algorithmic risk assessment policing models: lessons from the Durham HART model and 'Experimental' proportionality', (2018) 27(2) Information & Communications Technology Law 223-250.

<sup>55</sup> S Urwin 'Algorithmic Forecasting of Offender Dangerousness for Police Custody Officers: An Assessment of Accuracy for the Durham Constabulary Model' (2017) Master's Thesis, University of Cambridge.

- ✓ While the input datasets may be comprehensible and the code is written clearly, there is still opacity regarding the relationship between the data inputs and the conclusion. The lack of explainability of the AI decision-making raises concerns for an individual's ability to understand, and therefore to question or challenge, the process, as well as for the decision-maker's ability to justify and defend its process.
- ✓ Furthermore, the risk of biased - and even discriminatory - decisions should be taken into account. HART uses behavioral predictors, in combination with age, gender, and two forms of residential postcode. Plus, it makes predictions based on historical offender data, and so will be affected by past arrest history, force targeting decisions, social trends, and prioritization of certain offenses (child sexual abuse offenses, domestic violence, and hate crime). This degree of accuracy is based on the fact that the developers wanted the algorithm to reflect the reality that led to past human judgments. However, the context changes over time, and data themselves do not reflect a perfect reality. While human decision-makers might adapt immediately to a changing context, the same cannot necessarily be said of an algorithmic tool, which therefore requires constant scrutiny of the predictors used and frequent refreshing of the algorithm with more recent historical data.
- ✓ As for the risk of discrimination, HART represents an example of a value-judgement built into an algorithm, which requires a 'trade-off' to be made between false positives and false negatives in order to avoid errors. Therefore, if HART had decisional power, there could be a risk that an unacceptable number of low or medium-risk individuals classified as high-risk.

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<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Durham Constabulary and Cambridge University
<b>Year</b>	2017-2020
<b>Place of implementation</b>	UK
<b>Legal sector</b>	Criminal law (predictive policing)
<b>Recipients</b>	Custody officers
<b>Description</b>	It has been developed to assist custody officers' decision-making in the assessment of future



	<p>offending to enable offenders forecasted as 'moderate risk' to be eligible for the Constabulary's Checkpoint program, i.e., an 'out-of-court disposal.</p>
<b>BENEFITS</b>	
<b>Expected</b>	
<ul style="list-style-type: none"> <li>✓ promote consistency in decision-making,</li> <li>✓ enabling targeted interventions and rigorous testing to find responses that reduce future harm and recidivism</li> </ul>	
<b>Obtained</b>	
<p>HART outperformed the degree of human accuracy, but its implementation raises some concerns regarding the risk that AI-driven decision-making could substitute the human one.</p>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<p><b>Competence of the judge (policy officer)</b></p>	<p>HART cannot possibly record and assess all factors that affect the output. For this reason, Durham Constabulary concluded that the tool can only ever function as decision-support, but never substitute the human decision-making process.</p> <p>It is still unclear how the deployment of algorithmic tools within policing will affect decision-making processes within police forces. There is the risk that the imposition of an algorithm in decision-making limits or filters the information considered in</p>



	<p>practice, thus influencing custody officers' discretion.</p>
<b>Due process</b>	<p>The lack of explainability of the AI decision-making raises concerns for an individual's ability to understand, and therefore to question or challenge, the process, as well as for the decision-maker's ability to justify and defend its process.</p>
<b>Discrimination</b>	<p>The context changes over time, and data themselves do not reflect a perfect reality. While human decision-makers might adapt immediately to a changing context, the same cannot necessarily be said of an algorithmic tool.</p> <p>As for the risk of discrimination, HART represents an example of a value-judgement built into an algorithm, which requires a 'trade-off' to be made between false positives and false negatives in order to avoid errors. Therefore, if HART had decisional power, there could be a risk that an unacceptable number of low or medium-risk individuals classified as high-risk.</p>
<b>Other issues</b>	

<p><b>Accuracy</b></p>	<p>According to an independent validation study, the overall accuracy of the model was 62.8%. The error distribution in validation indicated a majority of cautious errors as opposed to dangerous errors. While both types of errors increased in the validation cohort with respect to the construction validation, over-estimates of risk expanded further than under-estimates, whereas the rates of the most dangerous form of error - forecasted as low risk, but actually high risk - remained stable.</p>
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#### d) 206 System

206 System is a tool of 'intelligent cognition' used by the Chinese judicial system in the courts of Shanghai courts<sup>56</sup>. The system was commissioned in 2017 by the Chinese Communist Party's Commission for Political and Legal Affairs with the aim of reducing manual workloads, improving efficiency and transparency of the criminal procedure, and minimizing instances of wrongful conviction. It consists of a platform that is able to

<sup>56</sup> N Wang and MY Tian, "Intelligent Justice': AI Implementations in China's Legal Systems', cit., 206. The authors carry out a bird-eye analysis of the implementation of legal AI in the Chinese judicial system by using the following classification based on AI's functions: 'intelligent perception' ("AI's "capability to interact with and intake information from the environment"); 'intelligent cognition' (AI leverages data—either fed via databases or gathered through 'intelligent perception' technologies—and applies self-learning processes that mimic human reasoning") and 'intelligent decision-making' ("AI systems at this level harness both intelligent perception and cognition capabilities and have agency to act on these inputs. Intelligent decision-making systems are distinguished from systems at the perceptual and cognitive levels not by a significant elevation in technology, but by the ability to act autonomously and by additional attention on human-machine interaction").

interpret evidential information and identify logical connections between single pieces of evidence for a trial-centered litigation platform.

The project was put in place through the collaboration between 400 law enforcement and judicial officers and 300 technical experts from iFLYTEK (a partially state-owned enterprise). The team leveraged databases established in 2016 that hold digitized records of Shanghai court cases as training data for the platform. The developers built a multi-level data annotation system attaching relevant metadata and attaining basic comprehension for digitized evidence. The annotation system consists of a hybrid of rule-based named entity recognition (NER) and statistics-based NER relying upon machine learning and perceptual AI technologies. The last stage was the translation of laws into computer-based logic algorithms, in consultation with legal professionals. The final result was a 'Judicial Knowledge Graph', i.e., a logic engine that applies cognitive understanding of evidence and law to produce sentencing recommendations. Covering 71 crimes expressed as 'executable logic algorithms', the current 3.0 version of the 206 System launched in 2018 is now officially integrated into the Shanghai court system and downstream public security departments<sup>57</sup>.

In its pre-trial application, 206 System works as an evidence-verification tool that guides evidence standards (informs the personnel of 'uniformly applicable' sentencing conditions for each type of charge) and evidence rules (informs outlines the correct procedures for 'collecting, securing, saving, and utilizing' evidence). The system intakes digitized evidence and then detects potential irregularities by jointly checking submissions for inconsistencies. At the same time, the system establishes indisputable facts for each case, allowing officers to determine more efficiently evidence sufficiency.

These functions allow the 206 System to act also as an accountability mechanism for proper case handling in both public security agencies and court systems<sup>58</sup>, as it minimizes the usability of illegally obtained evidence thereby reducing incentives for police to overstep their mandate through unauthorized means (e.g., wrongful asset seizure, searches without warrants, and coerced confessions). An example of this 'legality check'

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<sup>57</sup> In 2020, the 3.0 206 System processed more than 90,000 cases (see World AI Conference, 'AI Facilitating Judicial Reform and Solving Judicial Problems - Using AI-Assisted Interrogation to Achieve Substantive and Procedural Justice' (2020) <https://www.bilibili.com/video/BV1g5411a7p3?p=3>).

<sup>58</sup> Y Cui, 'Artificial Intelligence and Judicial Modernization' (Springer: 2020) <https://www.springer.com/gp/book/9789813298798>, 82.

function is that the 206 System identifies wrongfully conducted interrogations by flagging mismatches between the location marked on interrogation footage and legally mandated requirements.

Besides this, the 206 System is also able to formulate evidence models, i.e., it automatically annotates evidence, recognizes the meaning and importance of content, and constructs preliminary 'evidence chains' that provide a baseline argumentation structure for investigators. In this way, officers are assisted in assessing the completeness of the investigation, whereas the judicial staff is enabled to predict sentencing sufficiency. Evidence and argumentation logic produced by the 206 System and the prosecution are shown during the process to enable the judge and the defendant to understand how evidence has been interpreted and used to form the prosecution's argument, and to eventually challenge it. In trial, 206 System also provides the judge records of past cases of similar nature to further guide the judge in their final decision.

Despite its successful implementation, some challenges posed by 206 System still remain relevant today.

- ✓ The first concern is related to a general characteristic of ML technologies, i.e., their 'black box' nature: neither developers nor users can observe the operations and processes of the AI learning in full transparency. Comparing program outputs to expected results is a verification method that misses how AI systems actually comprehended training data. The resulting risk is that undetected biases in training data may be replicated through the program's recommendations and negatively impact judicial outcomes. The adoption of these AI systems amounts to a degree of acceptance that some parts of the legal system will be permanently opaque.
- ✓ Another issue is the adaptability of the system to changing legislative and societal conditions. For example, the system should incorporate current legislative changes like the recent revisions to Civil Code of the People's Republic of China, without having previous case or trial data. It is still uncertain how these changes can impact established program preferences that used previous cases as data samples and precedent reinforcement. Flexibility raises also the question whether to generate cognitive algorithms relying on static datasets from a fixed sample or dynamically updated through new material. In the latter case, due diligence is needed to assess the applicability of cases that have been previously influenced by the algorithm.
- ✓ Cognitive systems might entail unintended consequences. At the public security level, investigators may become 'tunnel-visioned' and prioritize

types of crime scene evidence that will be recognized as significant to the system, missing other relevant information at the crime scene unique to the specific case. At the judicial level, judges may become 'rubber stamps' that simply approve the system recommendation without critically reviewing the prosecution and defense argumentation (206 System assesses also the 'degree of judgement deviation', judges end up to being de-incentivized from pursuing rational dissent from the system recommendation).

- ✓ Finally, the system is currently ill-equipped to solve certain crimes, where evidence is dependent on witness or suspect testimony, such as domestic violence. Without enough evidence, it will be difficult to generate an 'evidence chain' and confirm the validity of either party in the dispute.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	CPC Commission for Political and Legal Affairs in partnership with iFLYTEK (partially state-owned company)
<b>Year</b>	2017
<b>Place of implementation</b>	China (pilot project in Shanghai Courts)
<b>Legal sector</b>	Criminal law
<b>Recipients</b>	Public agencies - Judges
<b>Description</b>	It consists of a AI system that is able to interpret evidential information and identify logical connections between single pieces of evidence for a trial-centered litigation platform.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Reduce manual workloads;</li> <li>✓ improve efficiency and transparency;</li> <li>✓ minimize instances of wrongful conviction;</li> <li>✓ ensuring decisional uniformity in the Chinese judicial system.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	

<p><b>Due process</b></p>	<p>The first concern is related to its 'black box' nature: neither developers nor users can observe the operations and processes of the AI learning in full transparency. The adoption of these AI systems amounts to a degree of acceptance that some parts of the legal system will be permanently opaque.</p>
<p><b>Competence of the judge</b></p>	<p>Cognitive systems might entail unintended consequences.</p> <ul style="list-style-type: none"> <li>✓ At the public security level, investigators may prioritize types of crime scene evidence that will be recognized as significant to the system, missing other relevant information.</li> <li>✓ At the judicial level, judges may simply approve the system recommendation without critically reviewing the prosecution and defense argumentation (206 System assesses also the 'degree of judgement deviation').</li> </ul>
<p><b>Other issues</b></p>	
<p><b>Development</b></p>	<p>Adaptability of the system to changing legislative and societal conditions. Flexibility raises also the question whether to generate cognitive algorithms relying on</p>

	<p>static datasets from a fixed sample or dynamically updated through new material. In the latter case, due diligence is needed to assess the applicability of cases that have been previously influenced by the algorithm.</p>
<p><b>Deployment</b></p>	<p>Finally, the system is currently ill-equipped to solve certain crimes, where evidence is dependent on witness or suspect testimony, such as domestic violence. Without enough evidence, it will be difficult to generate an 'evidence chain' and confirm the validity of either party in the dispute.</p>

### 3.4 Categorization of contracts and detection of clauses

#### 3.4.1 Ue initiatives

##### a) CLAUDETTE

CLAUDETTE ('automated CLAUse DETectEr')<sup>59</sup> is an interdisciplinary research project led by the Law Department of the European University Institute, in cooperation with engineers from the University of Bologna and the University of Modena and Reggio Emilia. This project aimed to test whether machine learning and grammar-based approaches are able to carry out an automated reading and legal assessment of online consumer

<sup>59</sup> <http://claudette.eui.eu/about/index.html>

contracts and privacy policies, and evaluate their compliance with the EU's unfair contractual terms law and personal data protection law (GDPR). Such policies are the documents through which data controllers inform users/consumers about the purposes and means of their personal data processing, and possibly ask for their consent, when it provides the legal ground for the processing<sup>60</sup>. The rationale of this initiative is that despite substantive law in place and enforcers' competence for abstract control, providers of online services still tend to use unfair and unlawful clauses in these documents. By delegating certain tasks to machines, the developers pursued a twofold goal: on one hand, automation can increase the quality and effectiveness of law enforcement; on the other, it empowers consumers themselves by giving them tools to quickly assess whether what the agreed clauses are fair and/or lawful.

Aiming to find a method for extracting knowledge from legal texts and evaluating the extracted data, the developers identified three main dimensions for evaluation based on the GDPR and its guidelines: completeness, compliance with the data processing rules, and level of readability.

1. Completeness → checking withheld or missing information on the data processing, such as the purpose and retention time of personal data, including sensitive data.
2. Compliance → assessing the compliance of online privacy policies. One of the identified risks relates to the misinterpretation of norms as well as to the failure in connecting different specifications of norms within a legal document.
3. Readability → evaluating the degree of accessibility of privacy policies language. This dimension aims at preventing privacy policies from requiring an unreasonable level of expertise to be comprehended. Such barriers further discourage consumers from reading privacy policies.

The result of this project consists of a publicly available online platform, which can be effectively used by consumer associations as well as the general public. The platform relies on machine learning that includes

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<sup>60</sup> Contissa et al. 'Towards Consumer-Empowering Artificial Intelligence' (2018) International Joint Conference on Artificial Intelligence (IJCAI) available at <<http://www.ijcai.org>>. See also M Lippi, P Pałka, G Contissa, F Lagioia, HW Micklitz, G Sartor and P Torroni, 'CLAUDETTE: an automated detector of potentially unfair clauses in online terms of service', *Artificial Intelligence and Law* (2019) 27 117-139.



elements of cognitive computing. The team behind the project had to face several challenges related to its development<sup>61</sup>.

- ✓ Context → the examination of single sentences is insufficient for the determination of their defectiveness within the three dimensions mentioned above but required to link several sentences.
- ✓ Omission of Information → the purpose of the project is not only to detect the unfairness and unclear language of privacy policies but also to check whether certain information is present and sufficient in view of the regulatory framework. The latter task is conceptually completely different, as it aims to identify the presence of a sentence, rather than the fact that its content is not compliant with the law, and requires verifying whether some information is sufficient, or not, with respect to given standards.
- ✓ Multilingualism → As the GDPR governs data processing in all European Union states, it is important to take into account its several official languages. In developing consumer-empowering platforms, researchers should also design its methodology to preserve the original functions and accuracy across these many different languages. This task is particularly relevant for NGOs and consumer organizations that very often struggle with the diversity of language and the comparison of different versions of the same documents.

GENERAL INFORMATION	
<b>Developer</b>	European University Institute in cooperation with the University of Bologna and the University of Modena and Reggio Emilia.
<b>Year</b>	2017
<b>Place of implementation</b>	Italy, European Union
<b>Legal sector</b>	Civil law (data protection)
<b>Recipients</b>	Consumers - NGOs and associations - Law enforcers
<b>Description</b>	This project aimed to test whether machine learning

<sup>61</sup> Liepina et al., 'GDPR Privacy Policies in CLAUDETTE: Challenges of Omission, Context and Multilingualism' (2019) ASAIL Workshop Paper.

	<p>and grammar-based approaches are able to carry out an automated reading and legal assessment of online consumer contracts and privacy policies, and evaluate their compliance with the EU's unfair contractual terms law and personal data protection law (GDPR).</p>
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ automation can increase the quality and effectiveness of law enforcement;</li> <li>✓ it empowers consumers themselves by giving them tools to quickly assess whether what the agreed clauses are fair and/or lawful.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Other issues</b>	
<p><b>Development</b></p>	<ul style="list-style-type: none"> <li>✓ Context → the examination of single sentences is insufficient for the determination of their defectiveness.</li> <li>✓ Omission of Information → the task of checking whether certain information is present and sufficient in view of the regulatory framework is conceptually problematic. It aims to identify the presence of a sentence, rather than the fact that its content is not compliant with the law.</li> <li>✓ Multilingualism → In developing consumer - empowering platforms,</li> </ul>

	researchers should also design its methodology to preserve the original functions and accuracy across these many different languages.
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### 3.4.2 Extra EU initiatives

#### a) Luminance

Founded by mathematicians from the University of Cambridge, Luminance's AI tools read and form a conceptual understanding of documents in any language. The cognitive computing technology enables the platform to review contracts, automatically automate legal documents, and detect possible anomalies that lawyers might not have otherwise been aware existed through the application of supervised and unsupervised machine learning. Plus, Luminance helps lawyers to maintain compliance through the use of an advanced in-built clause and document comparison technology, and can also be used for redaction, reporting, and contract remediation. The services provided by luminance may be summarized as follows<sup>62</sup>:

1. Luminance Corporate → it enhances and speeds up the contract lifecycle process, from contract drafting to negotiation and mark-up, and to understanding the key features of executed contracts. Luminance Corporate puts in place smart indexing too, i.e., it provides one intelligent central point for enterprise-wide data allowing users to get immediate answers to questions from the business.
2. Luminance Diligence → It assists corporate lawyers with over 25 types of contractual reviews, including M&A due diligence, real estate, regulatory compliance, and redaction. Using Luminance, lawyers are able to perform fast and rigorous contract reviews across a wide range of projects, with more insight than ever before. Luminance can hierarchically assign workflows and automate low-level tasks, freeing up resources, strategic thinking, analysis, and advice. Using Luminance, lawyers can gain insight into matters, form strategies, and direct sources accordingly.
3. Luminance Discovery → An end-to-end eDiscovery platform using advanced AI to transform the way lawyers go about investigations,

<sup>62</sup> <https://www.luminance.com/news.html>

litigation, and arbitration. From intelligent ingestion and data culling tools to AI-powered Early Case Assessment (ECA) and Technology-Assisted Review (TAR), plus court-compliant production functionality, Luminance Discovery helps lawyers to gain insightful, expedited document reviews. Luminance's core intelligence is the Legal Inference Transformation Engine (LITE). Exposed to over 100 million documents so far, Luminance's language model is able to rapidly read and form an understanding of documents and display the results to the user. Luminance's AI combines a number of disciplines within the field of machine learning, including inference, deep learning, natural language processing, and pattern recognition. Luminance combines both supervised and unsupervised machine learning:

- ✓ Unsupervised machine learning → Not relying on understanding documents in relation to given labels, unsupervised machine learning is able to identify issues that the reviewers did not know existed and thus never searched for them or labelled them, but that nonetheless present as a significant anomaly. It is deployed mainly in due diligence, as all risk is surfaced immediately within the review and negotiating positions can be strengthened from the outset, and in eDiscovery, as unsupervised machine learning can help litigators to avoid irrelevant material.
- ✓ Supervised machine learning → Luminance relies on dynamic datasets, as supervised ML continues to learn from the ways that lawyers interact with the platform also after its training. By observing the actions of legal professionals, Luminance can form an understanding of what lawyers are looking for in their documents.

There is no literature about particular legal or social concerns raised by the deployment of this platform. We therefore refer in the table to those already mentioned in relation to 'robo-lawyering' apps.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	University of Cambridge
<b>Year</b>	2015
<b>Place of implementation</b>	United Kingdom (where it was developed)
<b>Legal sector</b>	Civil - Commercial - Administrative law
<b>Recipients</b>	Corporations - Law firms - legal practitioners
<b>Description</b>	A platform that applies supervised and

	<p>unsupervised machine learning to the process of document review and enables the automated annotation of legal documents and the detection of possible anomalies.</p>
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ The cognitive computing technology enables the platform to review contracts, automatically automate legal documents, and detect possible anomalies that lawyers might not have otherwise been aware existed</li> <li>✓ It helps lawyers to maintain compliance through the use of an advanced in-built clause and document comparison technology, and can also be used for redaction, reporting, and contract remediation.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Equality of arms</b>	<p>Its uneven availability among lawyers may potentially affect the chance of success of the weaker party in the process.</p>

## 3.5 Online dispute resolution

### 3.5.1 Introductory considerations

The choice to treat AI systems involved in online dispute resolution as a separate category is not based on their distinctive technological features but on the wide array of tools deployed in this field, which makes it impossible to place it in one of the above-mentioned categories. Alessa carries out an interesting overview of the current and future uses of AI in Alternative Dispute Resolution<sup>63</sup> both as a support capacity and a substitutive one.

<sup>63</sup> H Alessa, 'The role of Artificial Intelligence in Online Dispute Resolution: A brief and critical overview' (2022) 31(3) Information & Communications Technology Law, 319-342 available at <10.1080/13600834.2022.2088060>.

- ✓ **Supportive** → AI enables or supplements the work of the third party (i.e., the mediator). Supportive AI systems are the most prevalent technologies in the contemporary ODR environment. It can be further distinguished into subgroups relating to AI's functions.
  - *Decision support systems* → This area has witnessed the greatest progresses since the early 90s. The application of these AI processes to dispute resolution is not a particularly novel development, as it acts on the same principle as systems plotting shipping lanes, self-driving cars, and actuarial software all act on. Though their form and function vary, such systems are generally able to provide information on the level of agreement or disagreement between two parties. The system weighs up different factors and computes the optimal outcome or course of action.
  - *Knowledge support systems* → Although decision support systems provide procedural support, AI can also be used to provide non-traditional means of accessing information relevant to a given dispute. Acting as an 'intelligent' search engine, the AI system is able to take in the relevant details of a presented scenario, requiring a sense of understanding and meaning, and ascertaining the relevant information to present (or omit) in an understandable manner.
  - *Intelligent interface systems* → Intelligent interface systems are those which aim to bridge the significant communication gap between human users and other AI systems by relying on natural language processing.
- ✓ **Substitutive** → AI begins to take on the essential functions traditionally associated with the third party altogether, for example by coming to decisions or making inquiries of the first and second parties. This does not mean necessarily that the AI system entirely replaces a third-party negotiator but it may happen that the system deals only with a portion of the third-party negotiator's work. These systems are still subject to slow development due to their relative complexity as compared to the supportive ones.
  - *Case reasoning systems* → Case reasoning systems take knowledge from past outcomes and apply it to current situations. Thus, an AI that is aware from past experience or data input that a particular course of action leads to negative outcomes can avoid that course of action. There is a clear potential for such systems in the area of ODR, especially where disputes are subject to legal and quasi-legal systems due to the tendency for clear documentation of the facts of cases and statements regarding the exact reasoning behind a certain decision. Thus, a dispute before an AI third party which is similar can be decided in a manner which takes account of the success or validity of previous cases. AI systems may either be

programmed to recognize important variables from the start or retain the results of each case it has dealt with so that it might be more efficient in the future, both in removing the need to evaluate each novel case in its entirety and by employing solutions which have previously been shown to be effective.

- *Rule-based systems* → Similarly to case-based systems, rule-based systems apply set principles and rules to a given case. Decision tree systems have been successful in automating simple financial decisions which previously took quite some time to process manually, such as whether particular parties to a dispute should have access to legal aid or the resolution of low-value consumer-supplier disputes.

In 2021, the Council of Europe rolled out some guidelines on online dispute resolution mechanisms in civil and administrative court proceedings<sup>64</sup>, providing guidance in relation to fair procedure, transparency in the use of ODR and requirements for hearings, special issues related to the ICT nature of ODR techniques, and other issues not related from the jurisprudence of the European Court of Human Rights.

- ✓ Fair procedure → The Guidelines provide that the ODR mechanisms shall ensure access to justice for their users through an “understood, affordable, and user-friendly” procedure; respect the principle of equality of arms, by ensuring an independent and impartial adjudicative process; ensure the opportunity to present their case and contest evidence submitted by other parties, improve the effectiveness of the proceedings by allowing parties to participate without being physically present in court and streamlining the whole process as far as possible; be transparent in the delivery of the decision by publishing the outcomes of the proceedings; comply with the right to a reasoned decision; guarantee the enforcement of the decision; envisage the possibility of judicial review in cases involving purely automated decisions.
- ✓ Transparency in the use of ODR and requirements for hearings → The design and operation of ODR mechanisms should be made transparent and explained in an intelligible manner using clear and plain language. Plus, ODR mechanisms should guarantee appropriate ways to ensure public scrutiny of proceedings, and should not in itself deprive parties of a right to request an oral hearing before at least one level of jurisdiction. Transparency shall be ensured also in relation to potential conflicts of

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<sup>64</sup> Committee of Ministers of the Council of Europe, ‘Online dispute resolution mechanisms in civil and administrative court proceedings’ (16 June 2021) available at <<https://rm.coe.int/publication-guidelines-and-explanatory-memorandum-odr-mechanisms-in-c/1680a4214e>>.



interest; to the final judgment and other decisions or notifications; to the applicable procedural rules.

- ✓ Special issues related to the ICT nature of ODR techniques
  - Cybersecurity → An appropriate level of cybersecurity of ICT products, services, and processes facilitating ODR should be ensured according to the requirements in Articles 6 and 13 ECHR.
  - Human rights protection, including personal data protection → the use of ODR should respect human rights as part of its development and operation. The use of ODR mechanisms should not infringe data protection rights, including, where applicable, the right to information, the right to access data, the right to object to processing data, and the right to erasure.
- ✓ Other issues → Recommendations on the testing, monitoring, and upgrading research and development of ODR mechanisms, and on raising awareness, training, and education about their deployment.

### 3.5.2 Ue initiatives

#### a) Rechtwijzer

In recent years, the Netherlands has been at the forefront in Europe in testing Online Dispute Resolution mechanisms fully reliant on Artificial Intelligence mechanisms. Among several initiatives<sup>65</sup>, Rechtwijzer (meaning 'conflict resolution guide' or 'signpost to justice') is one of the most significant. Rechtwijzer 2.0 is a follow-up project to the innovative Rechtwijzer 1.0 launched by the Hague Institute for Innovation of Law (HiIL 'user friendly justice') with the support of the Dutch Legal Aid Board and Mondria in October 2014 as an online dispute resolution platform<sup>66</sup> for couples who were divorcing and involved in separation proceedings, handling around 700 divorces yearly<sup>67</sup>. Rechtwijzer 2.0 operated using algorithms to find points of agreement between couples who had been asked questions, proposing solutions in an attempt to facilitate amicable

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<sup>65</sup> For example, see e-Kantonrechter and e-Court (see E van Gelder, 'Digitalisering in buitengerechtelijke geschiloplossing' (Keiduidelijk, 10 December 2017) <<http://www.keiduidelijk.nl/2017/12/10/digitalisering-in-buitengerechtelijke-geschiloplossing/>>.

<sup>66</sup> O Robinson, 'Rechtwijzer 2.0 and Justice 42. Dutch online dispute resolution platform' (15 May 2020) available at <<https://te-a2j.codewest.uk/2020/05/15/rechtwijzer-2-0/>>

<sup>67</sup> R Smith and A Paterson, 'Face to Face Legal Services and their Alternatives: Global Lessons from the Digital Revolution' (2014) White Report; C Matlack, 'Robots Are Taking Divorce Lawyers' Jobs, Too' (Bloomberg Businessweek: 1 July 2016) available at <<https://bol.bna.com/robots-are-taking-divorce-lawyers-jobs-too/>>



resolution. It was designed to increase the number of settlements that could be afterward presented to the courts for approval.

However, it ultimately became financially unsustainable for the private sector and was brought to an end in July 2017, despite being funded through user payments from private litigators and contributions for legally aided parties. The failings of Rechtwijzer 2.0 were largely commercial in nature and derived from the need to produce revenue. Indeed, compared to the significant initial investment of €2.3 million, the platform did not reach as many users as hoped, handling just 1% of all divorces in the Netherlands. The reason for this failure lies in the fact that the platform was hindered by poor marketing and in the underestimation that advice is needed at both an early stage and throughout the process<sup>68</sup>. Moreover, the users did not want to fund any solutions provided on the platform themselves. To sum up, although the product worked well, it needed much more investment and time to market the product<sup>69</sup>.

The failure of Rechtwijzer was followed by the rollout of a new platform in September 2017, Justice42, which similarly adopts problem diagnosis through question and answers, problem-solving, assisted negotiation, and online alternative dispute resolution<sup>70</sup>, allowing the whole divorce to be arranged online and at a set price. The key change is not technological: Justice 42 provides also a group of case managers who offer 'assistance, comfort, and support when needed'.

<b>GENERAL INFORMATION</b>	
<b>Developer</b>	Hague Institute for the Internationalization of Law (Hiil) in collaboration with the Dutch Legal Aid Board and Modria.
<b>Year</b>	2007 (Rechtwijzer 1.0) - 2014 (Rechtwijzer 2.0) - 2017 (Justice42)

<sup>68</sup> S Hynes, 'Digital Law Crashes out.. for now' (2017) 167 The New Law Journal 7.

<sup>69</sup> Hiil, 'Rechtwijzer: Why Online Supported Dispute Resolution Is Hard to Implement' (21 June 2017) available at <<https://www.hiil.org/news/rechtwijzer-why-online-supported-dispute-resolution-is-hard-to-implement/>>.

<sup>70</sup> DQ Anderson, 'The convergence of ADR and ODR within the courts: the impact on access to justice' (2019) 38(1) Civil Justice Quarterly.

<b>Place of implementation</b>	The Netherlands
<b>Legal sector</b>	Civil law (Family law)
<b>Recipients</b>	Parties
<b>Description</b>	Rechtwijzer 2.0 operated using algorithms to find points of agreement between couples who had been asked questions, proposing solutions in an attempt to facilitate amicable resolution. It was designed to increase the number of settlements that could be afterward presented to the courts for approval.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Reducing courts' workload (providing legal information at an early stage through easily accessible and free online tools offers parties the opportunity to be aware of the legal resources they can use at an early stage and thus prevents escalation and possible legal proceedings);</li> <li>✓ Cost and time saving for the parties.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Development</b>	The Dutch Bar wanted more safeguards for security and informed consent in the ODR procedures led by Rechtwijzer.
<b>Deployment</b>	The platform became financially unsustainable for the private sector. It did not reach as many users as hoped, handling just 1% of all divorces in the Netherlands. The reason for this failure lies in the

	<p>fact that the platform was hindered by poor marketing and in the underestimation that advice is needed at both an early stage and throughout the process<sup>71</sup>. Moreover, the users did not want to fund any solutions provided on the platform themselves. To sum up, although the product worked well, it needed much more investment and time to market the product.</p>
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### 3.5.2 Extra Ue initiatives

#### a) DoNotPay (chatbot)

DoNotPay is a legal service chatbot originally built to appeal parking tickets via an automated online process. Started off as an app for contesting parking tickets, it has since expanded to include features that help users with many different types of legal issues, ranging from consumer protection to immigration rights and other social issues. Described as 'the world's first robot lawyer', DoNotPay gives free legal aid to users through a simple-to-use chat interface. The application is supported by IBM Watson AI, the same machine learning algorithm we have already seen above in relation to ROSS Intelligence. In this section, we will therefore focus only on those aspects that are related to the specific nature of chatbots as a 'supportive' tool for online dispute resolution<sup>72</sup>.

The main advantage deriving from the deployment of DoNotPay is the affordability of a legal sue for everyone with positive effects for access to justice. According to its creator Josh Browder, "this sort of technology could revolutionize and democratize legal work, making a professional

<sup>71</sup> S Hynes, 'Digital Law Crashes out.. for now' (2017) 167 The New Law Journal 7.

<sup>72</sup> H Alessa, 'The role of Artificial Intelligence in Online Dispute Resolution: A brief and critical overview'

'lawyer' available for everyone - not only for ones with lots of money"<sup>73</sup>. DoNotPay's large scaling is part of Browder's attempt to meet the needs of users who weren't sure which of their legal problems they could bring to the chatbot for help. Actually, Browder's intuition turned out to be significantly successful, as in 2016 DoNotPay was able to help appeal over 160,000 parking tickets across London and New York City<sup>74</sup>.

Since then, DoNotPay began building new chatbots that could handle different more sensitive legal needs capable of life-altering consequences, among them a chatbot that can help refugees in the United States apply for asylum status. The expansion of DoNotPay's uses to areas like immigration law raised some concerns among law experts and practitioners. For example, the American Immigration Lawyers Association claimed that the lack of attorney oversight could have devastating consequences for asylum seekers at risk of being deported back into violent situations<sup>75</sup>. Moreover, even the fact that the DoNotPay chatbot is so accessible, it can potentially direct users to incorrect information and mislead users. This is particularly relevant for those people in dire straits, like refugees, who do not have other instruments to rely on.

Related to the first issue, DoNotPay chatbots have to deal with ethics questions about chatbots and regulations around the unauthorized practice of law. Indeed, although the DoNotPay website specifies that the chatbot 'provides information', it is clear that the border with the activity of advising is ambiguous. The degree of interaction offered by the chatbot could be so pervasive that it has crossed the line and is now furnishing legal services or advice.

GENERAL INFORMATION	
<b>Developer</b>	DoNotPay (private company)

<sup>73</sup> <https://donotpay.com/>

<sup>74</sup> S Gibbs, 'Chatbot lawyer overturns 160,000 parking tickets in London and New York' (The Guardian, 28 June 2016) <<https://www.theguardian.com/technology/2016/jun/28/chatbot-ai-lawyer-donotpay-parking-tickets-london-newyork>>

<sup>75</sup> E Silverstein, 'Immigration Expert Raises Concerns about Asylum Uses for DoNotPay Bot' (LegalTechNews: 7 March 2017) available at <<https://www.law.com/legaltechnews/almID/1202780703320/>>.

<b>Year</b>	2015
<b>Place of implementation</b>	US - UK
<b>Legal sector</b>	Civil and administrative law
<b>Recipients</b>	Parties
<b>Description</b>	DoNotPay is a legal services chatbot originally built to contest parking tickets, but has expanded to include other services as well. It appeals parking tickets via an automated online process.
<b>BENEFITS</b>	
<ul style="list-style-type: none"> <li>✓ Enhanced access to justice through affordable “robot-lawyer”;</li> <li>✓ Increased awareness regarding personal legal rights.</li> </ul>	
<b>DRAWBACKS AND RISKS</b>	
<b>Legal issues</b>	
<b>Unauthorized legal practices</b>	Although the DoNotPay website specifies that the chatbot ‘provides information’, it is clear that the border with the activity of advising is ambiguous. The degree of interaction offered by the chatbot could be so pervasive that it has crossed the line and is now furnishing legal services or advice.
<b>Other issues</b>	
<b>Deployment</b>	The expansion of DoNotPay's uses to areas like immigration law raised some concerns among law experts and practitioners. For example, the American Immigration

	<p>Lawyers Association claimed that the lack of attorney oversight could have devastating consequences for asylum seekers at risk of being deported back into violent situations.</p> <p>Moreover, even the fact that the DoNotPay chatbot is so accessible, it can potentially direct users to incorrect information and mislead users.</p>
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