



## Judiciary, Artificial Intelligence and Human Rights

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### Abstract

(EN): The paper analyzes the impact of artificial intelligence (AI) on judicial activity, examining opportunities and critical issues arising from the use of algorithmic systems in decision-making processes. After reconstructing the theoretical origins of predictive justice and the reasons for the growing interest in tools capable of reducing legal uncertainty and the judicial backlog, the article explores the main applications of AI in judicial systems – from case law research to alternative dispute resolution, from risk assessment to assisted drafting of documents – while highlighting the structural limitations of algorithms. Through the analysis of emblematic cases, the risks associated with the opacity of the models, discriminatory biases and the possible compromise of the principles of due process, transparency and equality of arms are highlighted. The article argues for the need to ensure the quality and accessibility of data, the verifiability of decision-making procedures and the preservation of the autonomy of the judge, to avoid forms of technological determinism and jurisprudential conformism. The final part examines the regulatory framework, in particular the role of the GDPR and new European regulatory initiatives, outlining prospects for an AI-responsible government that ensures respect for fundamental rights and the coherence of the judicial system.

(ES): El trabajo analiza el impacto de la inteligencia artificial (IA) en la actividad judicial, examinando las oportunidades y las cuestiones críticas derivadas del uso de sistemas algorítmicos en los procesos de toma de decisiones. Tras reconstruir los orígenes teóricos de la justicia predictiva y las razones del creciente interés por herramientas capaces de reducir la incertidumbre jurídica y la sobrecarga de los órganos judiciales, el artículo explora las principales aplicaciones de la IA en los sistemas judiciales – desde la búsqueda de jurisprudencia hasta los mecanismos de resolución alternativa de conflictos, desde la evaluación del riesgo hasta la redacción asistida de documentos –, poniendo de relieve al mismo tiempo las limitaciones estructurales de los algoritmos. Mediante el análisis de casos emblemáticos, se destacan los riesgos asociados a la opacidad de los modelos, los sesgos discriminatorios y la posible afectación de los principios del debido proceso, la transparencia y la igualdad de armas. El artículo sostiene la necesidad de garantizar la calidad y la accesibilidad de los datos, la verificabilidad de los procedimientos decisorios y la preservación de la autonomía del juez, para evitar formas de determinismo tecnológico y de conformismo jurisprudencial. La parte final examina el marco regulatorio, en particular el papel del RGPD y las nuevas iniciativas regulatorias europeas, esbozando perspectivas para un gobierno



responsable de la IA que garantice el respeto de los derechos fundamentales y la coherencia del sistema judicial.

(FR): L'article analyse l'impact de l'intelligence artificielle (IA) sur l'activité judiciaire, en examinant les opportunités et les enjeux critiques découlant de l'utilisation de systèmes algorithmiques dans les processus de prise de décision. Après avoir reconstitué les origines théoriques de la justice prédictive et les raisons de l'intérêt croissant pour des outils capables de réduire l'incertitude juridique et l'engorgement des juridictions, l'article explore les principales applications de l'IA dans les systèmes judiciaires – de la recherche de jurisprudence aux mécanismes de règlement alternatif des différends, de l'évaluation des risques à la rédaction assistée de documents – tout en mettant en évidence les limites structurelles des algorithmes. À travers l'analyse de cas emblématiques, sont mis en lumière les risques liés à l'opacité des modèles, aux biais discriminatoires et à l'atteinte possible aux principes du procès équitable, de la transparence et de l'égalité des armes. L'article soutient la nécessité de garantir la qualité et l'accessibilité des données, la vérifiabilité des procédures décisionnelles et la préservation de l'autonomie du juge, afin d'éviter des formes de déterminisme technologique et de conformisme jurisprudentiel. La dernière partie examine le cadre réglementaire, en particulier le rôle du RGPD et les nouvelles initiatives réglementaires européennes, en esquissant des perspectives pour une gouvernance responsable de l'IA garantissant le respect des droits fondamentaux et la cohérence du système judiciaire.

(DE): Der Beitrag analysiert die Auswirkungen der Künstlichen Intelligenz (KI) auf die richterliche Tätigkeit und untersucht die Chancen sowie die kritischen Herausforderungen, die sich aus dem Einsatz algorithmischer Systeme in Entscheidungsprozessen ergeben. Nach einer Rekonstruktion der theoretischen Ursprünge der prädiktiven Justiz und der Gründe für das wachsende Interesse an Instrumenten, die geeignet sind, Rechtsunsicherheit und die Überlastung der Gerichte zu verringern, beleuchtet der Artikel die wichtigsten Anwendungsfelder der KI in Justizsystemen – von der Rechtsprechungsrecherche über alternative Streitbeilegungsmechanismen bis hin zur Risikobewertung und zur unterstützten Erstellung von Dokumenten – und hebt zugleich die strukturellen Grenzen von Algorithmen hervor. Anhand der Analyse exemplarischer Fälle werden die Risiken aufgezeigt, die mit der Intransparenz der Modelle, diskriminierenden Verzerrungen (Bias) sowie einer möglichen Beeinträchtigung der Grundsätze des fairen Verfahrens, der Transparenz und der Waffengleichheit verbunden sind. Der Beitrag betont die Notwendigkeit, die Qualität und Zugänglichkeit der Daten, die Überprüfbarkeit der Entscheidungsverfahren sowie die Wahrung der richterlichen Unabhängigkeit sicherzustellen, um Formen technologischen Determinismus und jurisprudenziellen Konformismus zu vermeiden. Der letzte Teil untersucht den Regulierungsrahmen, insbesondere die Rolle der DSGVO und neuer europäischer Regulierungsinitiativen, und skizziert Perspektiven für eine verantwortungsvolle *Governance* der KI, die die Achtung der Grundrechte und die Kohärenz des Justizsystems gewährleistet.

(PT): O artigo analisa os impactos da Inteligência Artificial (IA) na atividade judicial, examinando as oportunidades e os desafios críticos decorrentes do uso de sistemas algorítmicos nos processos de tomada de decisão. Após reconstruir as origens teóricas da justiça preditiva e as razões do crescente interesse por instrumentos capazes de reduzir a incerteza jurídica e a sobrecarga dos tribunais, o artigo explora os principais campos de aplicação da IA nos sistemas judiciais – desde a pesquisa de jurisprudência até os mecanismos de resolução alternativa de conflitos, desde a avaliação de riscos até a redação assistida de documentos –, ao mesmo tempo em que destaca as limitações estruturais dos algoritmos. Por meio da análise de casos exemplares, são evidenciados os riscos associados à opacidade dos modelos, aos vieses discriminatórios e à possível violação dos princípios do devido processo legal, da transparência e da igualdade de armas. O artigo enfatiza a necessidade de garantir a qualidade e a acessibilidade dos dados, a



verificabilidade dos procedimentos decisórios e a preservação da independência do juiz, a fim de evitar formas de determinismo tecnológico e de conformismo jurisprudencial. A parte final examina o marco regulatório, em particular o papel do RGPD e as novas iniciativas regulatórias europeias, delineando perspectivas para uma governança responsável da IA que assegure o respeito aos direitos fundamentais e a coerência do sistema judicial.

(IT): L'articolo analizza l'impatto dell'Intelligenza Artificiale (IA) sull'attività giudiziaria, esaminando le opportunità e le sfide critiche derivanti dall'uso di sistemi algoritmici nei processi decisionali. Dopo aver ricostruito le origini teoriche della giustizia predittiva e le ragioni del crescente interesse per strumenti capaci di ridurre l'incertezza giuridica e il sovraccarico dei tribunali, l'articolo esplora i principali ambiti di applicazione dell'IA nei sistemi giudiziari – dalla ricerca giurisprudenziale ai meccanismi di risoluzione alternativa delle controversie, dalla valutazione del rischio alla redazione assistita di documenti –, mettendo al contempo in evidenza i limiti strutturali degli algoritmi. Attraverso l'analisi di casi esemplari, vengono evidenziati i rischi associati all'opacità dei modelli, ai *bias* discriminatori e alla possibile violazione dei principi del giusto processo, della trasparenza e della parità delle armi. L'articolo sottolinea la necessità di garantire la qualità e l'accessibilità dei dati, la verificabilità delle procedure decisionali e la salvaguardia dell'indipendenza del giudice, al fine di evitare forme di determinismo tecnologico e di conformismo giurisprudenziale. La parte finale esamina il quadro regolatorio, in particolare il ruolo del RGPD e le nuove iniziative regolatorie europee, delineando prospettive per una *governance* responsabile dell'IA che assicuri il rispetto dei diritti fondamentali e la coerenza del sistema giudiziario.

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**Summary:** 1. AI systems and judicial activity. – 2. The application of AI in judicial systems and its critical issues. – 3. The regulatory framework and new regulatory perspectives. – 4. Concluding remarks.

## 1. AI systems and judicial activity

Artificial intelligence (hereinafter AI) and the digitalisation of procedures now permeate every sector, including the judiciary. Beyond the development of electronic proceedings in civil, administrative and criminal matters, courts are increasingly confronted with new challenges arising from algorithmic decision-making. On the one hand, traditional legal categories must be adapted to situations in which decisions are taken by automated systems<sup>1</sup>. This is particularly evident in cases involving liability for harm caused by autonomous systems,

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<sup>1</sup> A. PAJNO-M. BASSINI-G. DE GREGORIO-M. MACCHIA-F.P. PATTI-O. POLLICINO-S. QUATROCOLO-D. SIMEOLI-P. SIRENA, *AI: profili giuridici. Intelligenza artificiale: criticità emergenti e sfide per il giurista*, in *BioLJ*, 2019, p. 205 ff.



where identifying the responsible party becomes highly problematic because established legal concepts are not easily applicable to such new circumstances <sup>2</sup>.

On the other hand, AI is increasingly employed as a tool for predictive justice, an emerging field of law that uses algorithmic systems capable of quickly analysing enormous volumes of information to estimate the likelihood of success or failure of a case before a court <sup>3</sup>. The term «predictive» is, nevertheless, misleading: rather than predictions, these systems produce forecasts concerning the possible legal-logical reasoning of judges <sup>4</sup>.

These technologies may help address judicial stagnation caused by increasing caseloads, which undermine the principle of reasonable duration of proceedings; additionally, they may strengthen legal certainty, understood as the objective foreseeability of the legal consequences attached to specific conduct <sup>5</sup>, with

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<sup>2</sup> U. RUFFOLO, *Intelligenza Artificiale, machine learning e responsabilità da algoritmo*, in *Giur. it.*, 2019, p. 1689 ff.; U. RUFFOLO-E. AL MUREDEN, *Autonomous vehicles e responsabilità nel nostro sistema e in quello statunitense*, in *Giur. it.*, 2019, p. 1704 ff.; R. LEENES-E. PALMERINI-B. KOOPS-A. BERTOLINI-P. SALVINI-F. LUCIVERO, *Regulatory Challenges of Robotics: Some Guidelines for Addressing Legal and Ethical Issues*, in *Law, Innov. Tech.*, 9, 1, 2017, p. 1 ff.; A. AMIDEI, *Intelligenza Artificiale e product liability: sviluppi del diritto dell'Unione europea*, in *Giur. it.*, 2019, p. 1715 ff.; U. SALANITRO, *Intelligenza artificiale responsabilità: la strategia della Commissione Europea*, in *Riv. dir. civ.*, 2020, p. 1246 ff.; G. DI ROSA, *Quali regole per i sistemi automatizzati intelligenti?*, *ivi*, 2021, p. 823 ff.; A. DI MARTINO, *Intelligenza artificiale e responsabilità civile in ambito sanitario*, Milan, 2022, *passim*; V. DI GREGORIO, *Intelligenza artificiale e responsabilità civile: quale paradigma per le nuove tecnologie?*, in *Danno resp.*, 2022, p. 61 ff. The case law of the Court of Justice of the European Union has addressed the application of the part of such operators for any unlawful acts committed by third-party users through the services provided (Cases C-70/10, *Scarlet Extended v. SABAM* e C-360/10, *SABAM v. Netlog*; Joined Cases C-236/8, C-237/8, C-238/08, *Google France*. Unlike decisions focusing on robotics, which have often relied on the categories of liability for defective products in relation to harmful events, a more recent line of case law seeks to reconcile the use of algorithmic systems with, on the one hand, the administration of justice and, on the other hand, the exercise of public administrative powers. The relevant rulings in this field include those of the Italian Council of State (section VI, April 8, 2019, No. 2270) and the French *Conseil Constitutionnel* (Judgment No. 2018-765 DC June 12, 2018) but also that of the Supreme Court of Wisconsin (*Loomis v. Wisconsin*, 881 N.W.2d 749 (Wis. 2016), certiorari denied by the Wisconsin Supreme Court, (State v. Loomis, case 2015AP17-CR, Judgment July 13th 2016, in *Harvard LR*, 130, 2017, p. 1530 ff.).

<sup>3</sup> L. VIOLA, *La giustizia predittiva del lavoro*, in *Lav. Dir. Eur.*, 2, 2023, p. 2 ff.; G. ARIOLLI, *Nomofilachia, giustizia predittiva e intelligenza artificiale*, in *Giust. ins.*, 3, 2023, *passim*.

<sup>4</sup> C. CASTELLI-D. PIANA, *Giustizia predittiva. La qualità della giustizia in due tempi*, in *Quest. Giust.*, 3, 2018, pp. 153-165; M.R. MAUGERI, *I robot e la possibile «prognosi» delle decisioni giudiziali*, in A. CARLEO (ed.), *Decisione robotica*, Bologna, 2019, p. 159 ff.; D. DALFINO, *Creatività e creazionismo, prevedibilità e predittività*, in *Foro it.*, 2018, V, c. 393 ff.; M. SCIACCA, *Algoritmo e giustizia alla ricerca di una mite predittività*, in *Pers. merc.*, 2023, p. 75.

<sup>5</sup> G. GOMETZ, *La certezza giuridica come prevedibilità*, Turin, 2005, *passim*; C. SALAZAR,



beneficial effects on economic and social relations and, ultimately, a deflationary effect on litigation<sup>6</sup>.

Interest in predicting litigation outcomes can be traced back to Max Weber, who, in describing the origins of Western capitalism, highlighted the importance of legal calculation<sup>7</sup>. The philosophical foundation of predictive justice has also been linked to the American Legal Realist movement<sup>8</sup>, while the idea of a «mechanical» justice dates back to eighteenth-century theories of judicial syllogism<sup>9</sup>.

Nevertheless, the use of automated systems to support or replace judicial decision-making raises numerous concerns.

## 2. The application of AI in judicial systems and its critical issues

Private actors – insurance companies, law firms, and legal service providers – have driven much of the interest in AI, motivated by the desire to reduce legal uncertainty and the unpredictability of judicial decisions. Public authorities, however, increasingly face pressure to integrate these tools into services delivered to citizens. In the legal domain, AI is used for advanced case-law search engines, online dispute resolution, assistance in drafting legal documents, predictive analytics, automated contract classification and clause detection, and chatbots for informing or guiding parties<sup>10</sup>.

A well-known example is the State v. Loomis case<sup>11</sup>, in which the defendant

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Judex ex machina? *Note su giustizia, giudici e intelligenza artificiale*, in *Consulta online*, 2021, p. 918 ff.; E. AL MUREDEN-R. ROVATTI, *Gli assegni di mantenimento tra disciplina legale e intelligenza artificiale*, Turin, 2020, *passim*; S. GOVERNATORI-M. MALTAGLIATI-G. MARLIANI-G. PACINI-V. PILLA, *Come calcolare gli assegni di mantenimento nei casi di separazione e divorzio*, Milan, 2009, *passim*.

<sup>6</sup> A. NATALE, *Introduzione. Una giustizia (im)prevedibile*, in *Quest. Giust.*, 4, 2018, p. 7 ff.

<sup>7</sup> N. IRTI, *Per un dialogo sulla calcolabilità giuridica*, in A. CARLEO (ed.), *Calcolabilità giuridica*, Bologna, 2017, p. 23; ID., *Il tessitore di Goethe (per la decisione robotica)*, in A. CARLEO (ed.), *Decisione robotica*, cit., p. 17 ff.; ID., *Un diritto incalcolabile*, Turin, 2016, *passim*.

<sup>8</sup> G. ALPA, *Note sulla calcolabilità nel diritto nordamericano*, in A. CARLEO (ed.), *Calcolabilità giuridica*, cit., p. 88 ff.

<sup>9</sup> M. BARBERIS, *Giustizia predittiva: ausiliare e sostitutiva. Un approccio evolutivo*, in *Milan LR*, 3, 2, 2022, p. 8 ff.

<sup>10</sup> N. ALETRAS-D. TSARAPATSANIS-D. PREOȚIUC-PIETRO-V. LAMPOS, *Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective*, in *PeerJ Comp. Sc.*, 2:e93, 2016.

<sup>11</sup> State v. Loomis, 881 N.W.2d 749, Wis. 2016. F. BASILE, *Intelligenza artificiale e diritto*



received a harsher sentence based not only on his past actions but also on his presumed future conduct, as evaluated by an algorithm used to predict recidivism risk. Although the Wisconsin Supreme Court upheld the use of the algorithm – arguing that the defendant could challenge the input data and that the sentence would not have differed absent the algorithm – it also stressed that such tools could not be the exclusive or decisive basis for judicial determinations<sup>12</sup>. Subsequent analysis by the NGO ProPublica, however, revealed significant racial bias, with the algorithm systematically overestimating the recidivism risk of certain racial groups<sup>13</sup>. These tools tend to reproduce or amplify existing social inequalities because algorithms process non-neutral data, producing deterministic outcomes that may confine individuals to group-based assessments<sup>14</sup>.

In Italy, the debate on algorithmic decisions has often concerned automated administrative acts affecting public employees, particularly the controversial algorithm used to assign newly appointed teachers to their first workplace. The Council of State did not reject algorithmic administrative decisions in principle, recognising advantages such as reduced processing time for repetitive, non-discretionary tasks and the elimination of negligent or intentional human interference<sup>15</sup>. Nonetheless, it expressed caution regarding entirely automated decisions, stressing that rights protection requires human-authored, reasoned, and contestable decisions<sup>16</sup>.

AI can certainly help overcome some judicial inefficiencies, particularly in technical assessments involving financial calculations in civil matters, such as

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*penale: quattro possibili percorsi di indagine*, in *Dir. pen. cont.*, 10, 2019, p. 19 ff.; L. D'AGOSTINO, *Gli algoritmi predittivi per la commisurazione della pena*, *ivi*, 2, 2019, p. 362 ff.; M. BRENNER, J. SUK GERSEN, M. HALEY, M. LIN, A. MERCHANT, R. JAGDISHWAR MILLETT, S. K. SARKAR, D. WEGNER, *Constitutional Dimensions of Predictive Algorithms in Criminal Justice*, in *Harvard Civil Rights-Civil Liberties LR*, 55, 2020, p. 267 ff.

<sup>12</sup> *State v. Loomis*, 881 N.W.2d, par. 99: «a COMPAS risk assessment is only one of many factors that may be considered and weighed at sentencing».

<sup>13</sup> J. DRESSEL, H. FARID, *The accuracy, fairness, and limits of predicting recidivism*, in *Sc. Adv.*, 17.1.2018.

<sup>14</sup> F. PASQUALE, *The Black Box Society: The Secret Algorithms that Control Money and Information*, Cambridge-London, 2015, *passim*, spec. p. 102 ff. On the risks of discrimination arising from the use of algorithms: T. CALDERS, I. ŽLIOBAITĖ, *Why Unbiased Computational Processes Can Lead to Discriminative Decision Procedures*, in B. CUSTERS, T. CALDERS, B. SCHERMER, T. ZARSKY (Eds.), *Discrimination and Privacy in the Information Society. Data Mining and Profiling in Large Databases*, Berlin, Heidelberg, 2013, p. 43 ff.; A. D'ALOIA, *Il diritto verso "il mondo nuovo". Le sfide dell'Intelligenza Artificiale*, in *BioLJ*, 1, 2019, p. 16 ff.

<sup>15</sup> Cons. Stato, Sez. VI, 08/04/2019, n. 2270, § 8.

<sup>16</sup> Cons. Stato, Sez. VI, 08/04/2019, n. 2270, § 9.



compensation for dismissal, disability percentage determinations, calculation of spousal support, child maintenance, or monetary damages. AI can also support factual reconstruction, preparation of draft decisions, and handling of simple or repetitive documentary cases. It can be useful for alternative dispute resolution, for anonymisation and pseudonymisation of judicial decisions (considering Recital 26 and Art. 4(5) General Data Protection Regulation, GDPR), and for logistical support such as scheduling hearings or reserving courtrooms.

AI systems, however, present structural and technical challenges. Their performance can be compromised by flawed training data<sup>17</sup>, or by «statistical discrimination», where outputs are influenced by pre-existing statistical correlations<sup>18</sup>. Algorithms are shaped by the values and intentions of their creators<sup>19</sup>, and their results require interpretation according to inherently subjective data categorizations<sup>20</sup>.

When algorithmic structures are protected by intellectual property or trade secrets, preventing access to their functioning, they escape user and judicial scrutiny, contradicting the principle of equality of arms<sup>21</sup>. A defendant must be able to examine and challenge the scientific validity of the tool used against them. Trade-secret opacity severely restricts transparency and accountability.

Safeguards must therefore ensure data quality, independence of data sources, transparency of inputs, and explainability of decision paths to prevent systemic discriminatory impacts<sup>22</sup>. Yet many AI systems, especially machine-learning models, function as «black boxes»<sup>23</sup>. Undoubtedly, similar remarks can also be made to human decisions<sup>24</sup>, where they are adopted on the basis of unconscious

<sup>17</sup> F. PASQUALE, *op. cit.*, p. 101 ff.

<sup>18</sup> P. HACKER, *Teaching Fairness to Artificial Intelligence: Existing and Novel Strategies Against Algorithmic Discrimination Under EU Law*, in *CMLR*, 2018, p. 1146 ff.

<sup>19</sup> S. SIGNORATO, *Giustizia penale e intelligenza artificiale. Considerazioni in tema di algoritmo predittivo*, in *Riv. dir. proc.*, 2020, p. 614.

<sup>20</sup> G. UBERTIS, *Intelligenza artificiale e giustizia predittiva*, in *Sist. pen.*, 16 ottobre 2023, p. 5 ff.

<sup>21</sup> P.P. PAULESU, *Intelligenza artificiale e giustizia penale. Una lettura attraverso i principi*, in *Arch. pen. Web*, 1, 2022, 11 gennaio 2022, p. 3; M. LUCIANI, *La decisione giudiziaria robotica*, in *Riv. AIC*, 2018, p. 889.

<sup>22</sup> EU Agency for Fundamental Rights, *Bias in algorithms – Artificial Intelligence and Discrimination*, Luxembourg, 2022, *passim*.

<sup>23</sup> S. SHALEV-SHWARTZ-S. BEN-DAVID, *Understanding Machine Learning: From Theory to Algorithms*, Cambridge, 2014, *passim*.

<sup>24</sup> G. LEGNINI, *Introduzione*, in A. CARLEO (ed.), *Decisione robotica*, cit., p. 12; M.E. FRANKEL, *Criminal Sentences. Law Without Order*, New York, 1973, *passim*.



impulses and conditioning according to the ancient Roman adage *Habent sidera sua lites*<sup>25</sup>; nevertheless, this cannot justify the admissibility of algorithmic decisions that affect the legal sphere of a subject without the latter being able to check the correctness of the computer process. Concerns also arise regarding the potential influence of algorithmic recommendations on judicial impartiality<sup>26</sup>. Judges may avoid diverging from algorithmic forecasts to reduce personal exposure to criticism, especially where judicial mandates depend on re-election or where disciplinary or civil liability regimes are strict<sup>27</sup>. The «practical force» of algorithms may lead to *de facto* automatic decision-making, conferring a misleading scientific authority on algorithmic outputs<sup>28</sup>. This dynamic risks generating dangerous jurisprudential conformism<sup>29</sup>, inhibiting the evolution of judicial reasoning and preventing the law from responding to societal changes. Since predictive justice operates inductively<sup>30</sup>, overreliance on precedent-based algorithms can reinforce pre-existing biases and cement majority trends.

While expanding access to legal knowledge and improving judicial

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<sup>25</sup> L. SOLIDORO, *Habent sua sidera lites: sulla storia dell'imponderabile nell'avventura processuale*, in *TSDP*, 2018, p. 1 ff.; V. TENORE, *I robot in giudizio! considerazioni sull'utilizzo di intelligenza artificiale (ai) da parte del magistrato: abdicare al ragionamento e alla riflessione quotidiana a favore di un robot togato, ovvero un "cretino digitale", è un bene per la giustizia e per i suoi attori e destinatari?*, in *Riv. Corte Conti*, 4, 2023, p. 1 ff.

<sup>26</sup> D. KAHNEMAN-O. SIBONY-C.R. SUNSTEIN, *Noise: A Flaw in Human Judgment*, London, 2021, trad. it. di E. Gallitelli, *Rumore. Un difetto del ragionamento umano*, Milan, 2021, *passim*; R. RICHARDSON-J.M. SCHULTZ-K. CRAWFORD, *Dirty data, bad Predictions: How Civil Rights Violations Impact Police Data, Predictive Policing Systems, and Justice*, in *New York University LR Online*, 94, 2019, p. 15 ff.; S. ARCIERI, *Bias cognitivi e decisione del giudice: un'indagine sperimentale*, in *Diritto Penale e Uomo*, 2 aprile 2019, p. 1 ff.; M. SOZIO, *La decisione giudiziale in condizioni di incertezza: tra distorsioni cognitive e neuroscienze*, in *Quad. Dip. Ion.*, 11, 2019, p. 355 ff.

<sup>27</sup> A. SIMONCINI-S. SUWEIS, *Samar, Il cambio di paradigma nell'intelligenza artificiale e il suo impatto sul diritto costituzionale*, in *Riv. fil. dir.*, 8, 1, 2019, p. 100; C. BARBARO, *Uso dell'intelligenza artificiale nei sistemi giudiziari: verso la definizione di principi etici condivisi a livello europeo?*, in *Quest. Giust.*, 4, 2018, p. 194; P. COMOGLIO, *Prefazione*, in J. NIEVA-FENOLL, *Intelligenza artificiale e processo*, Turin, 2019, pp. X-XI.

<sup>28</sup> A. SIMONCINI, *L'algoritmo incostituzionale: intelligenza artificiale e il futuro delle libertà*, in *BioLJ*, 1, 2019, p. 81.

<sup>29</sup> P. ZELLINI, *La dittatura del calcolo*, Milan, 2018, p. 15; V. TENORE, *op. cit.*, p. 26; A. GARAPON-J. LASSÈGUE, *La giustizia digitale. Determinismo tecnologico e libertà*, Bologna, 2021, *passim*; P.P. PAULESU, *op. cit.*, p. 23; A. SANTOSUOSSO-G. SARTOR, *La giustizia predittiva: una visione realistica*, in *Giur. it.*, 2022, p. 1761; L. DE RENZIS, *Primi passi nel mondo della giustizia «high tech»: la decisione in un corpo a corpo virtuale fra tecnologia e umanità*, in A. CARLEO (ed.), *Decisione robotica*, cit., p. 141.

<sup>30</sup> M. BARBERIS, *op. cit.*, p. 6; V. TENORE, *op. cit.*, pp. 3 e 26.



reasoning is desirable, automated systems that constrain judicial autonomy and independence pose constitutional risks and facilitate deterministic or quantitative decision models<sup>31</sup>.

The need for transparency in algorithmic decision-making and for fairness in computerized decision-making processes must be guaranteed across all sectors and in every situation in which choices are made that affect fundamental rights, freedoms, and legitimate interests of individuals, as required by the provisions of the General Data Protection Regulation (GDPR) No. 2016/679, which, pursuant to Article 5, also applies when data are processed within AI systems. Article 15 GDPR, in particular, establishes that the data subject has the right to know of the existence of automated decision-making, including profiling, and, in such cases, to receive meaningful information about the logic involved as well as the significance and the envisaged consequences of such processing for the data subject<sup>32</sup>. Based on this provision, it has been argued that the data controller must also provide information regarding the existence of potential discriminatory risks inherent in the algorithm used<sup>33</sup>.

Article 57 GDPR grants national supervisory authorities significant investigative, verification, and enforcement powers, while Article 83 provides for considerable administrative fines in cases of violation. Articles 35 et seq. GDPR further require a specific data protection impact assessment when a particular type of processing – especially involving new technologies – may present a high risk to the rights and freedoms of individuals (Recital 71 GDPR).

Finally, Article 22(1) GDPR allows the data subject to object to decisions that produce significant effects on their legal sphere and are based solely on

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<sup>31</sup> M. SCIACCA, *Algoritmo e giustizia alla ricerca di una mite predittività*, in *Dir. Giust. Cost.*, 12 maggio 2023, p. 9. A. CARRATTA, *Decisione robotica e valori del processo*, in *Riv. dir. proc.*, 2020, p. 99, states that positive law emerges from the case-by-case application of legal provisions by judges, who interpret and apply them in the light of general principles and system-derived values. Judicial decision-making frequently involves the use of open-textured concepts and general clauses, as well as a non-neutral process of reconstructing and selecting the legally relevant facts. This process is not a mechanical or arithmetical operation, but rather a value-laden assessment that entails an additional element of unpredictability, particularly at the fact-finding stage, where evidentiary materials are evaluated. On this issue, see also M.B. MAGRO, *Human Decision-Making and Robotic Decision-Making. A Hypothesis of Liability for Robotic Procreation*, in *Legisl. pen.*, 10 May 2020, *passim*.

<sup>32</sup> F. PIZZETTI, *La protezione dei dati personali e la sfida dell'intelligenza artificiale*, in F. PIZZETTI (ed.), *Intelligenza artificiale, protezione dei dati personali e regolazione*, Turin, 2018, p. 30 ff.

<sup>33</sup> P. HACKER, *op. cit.*, p. 1174; E. PELLECCIA, *Profilazione e decisioni automatizzate al tempo della black box society: qualità dei dati e leggibilità dell'algoritmo nella cornice della responsible research and innovation*, in *Nuove leggi civ. comm.*, 2018, p. 1224 ff.



automated processing, including profiling. These are decisions in which no human involvement in the decision-making process is present, meaning no involvement that goes beyond a merely symbolic act<sup>34</sup>. However, paragraph 2 provides exceptions where the decision: (a) is necessary for entering into or performing a contract between the data subject and the controller; (b) is authorised by Union or Member State law to which the controller is subject, provided that the law also sets out suitable measures to safeguard the data subject's rights, freedoms, and legitimate interests; or (c) is based on the data subject's explicit consent. In the cases referred to in paragraph 2(a) and (c), the controller must nonetheless implement appropriate measures to safeguard the data subject's rights, freedoms, and legitimate interests, and the data subject retains the right to obtain human intervention by the controller, to express their point of view, and to contest the decision.

The GDPR expressly excludes from its scope the processing of data for the purposes of the prevention, investigation, detection, or prosecution of criminal offences or the execution of criminal penalties. Therefore, the provisions mentioned may be invoked by anyone with an interest in verifying the fairness of the procedure followed by an AI system. This firm obligation to ensure transparency in algorithmic decision-making has also been reaffirmed in the guidelines on the use of AI published by the European Commission<sup>35</sup>.

Case law and decisions issued by courts also show that the extraordinary variety of concrete cases a judge must resolve cannot be reduced to the abstract schemes of algorithmic computation, as these cases often require complex choices that cannot be predetermined<sup>36</sup>.

The use of AI as a substitute for the judge therefore affects guarantees inherent in jurisdiction, such as: the effectiveness and completeness of the parties' right to a defence; the quality of judicial decision-making; the judge's ability to bring to light the irreducible particularity of facts; the judge's ability to calibrate the decision to those facts; and the obligation to provide reasoning.

These principles are enshrined not only in several national constitutions but also within the European legal order. Title V of the Treaty on the Functioning of the European Union (Articles 67-89) provides for the creation of an area of

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<sup>34</sup>Data Protection Working Party, *Guidelines on Automated Individual Decision-Making and Profiling for the Purposes of Regulation (EU) 2016/679 (wp251rev.01)*, adopted on 3 October 2017 as last Revised and Adopted on 6 February 2018, p. 20 ff.

<sup>35</sup>European Commission, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, *Building Trust in Human-Centric Artificial Intelligence Communication*, Brussels, 8.4.2019, COM(2019) 168 final.

<sup>36</sup>C. CASTELLI-D. PIANA, *Giusto processo e intelligenza artificiale*, Santarcangelo di Romagna, 2019, pp. 86-87.



freedom, security, and justice in which the application of the Charter of Fundamental Rights of the European Union plays a crucial role. Within this area, access to justice is a fundamental right, enshrined both in Article 47 of the Charter – which guarantees the right to an effective remedy and to an impartial tribunal – and in Article 6 of the European Convention on Human Rights, signed by the EU and its Member States.

For these reasons, EU institutions have long debated the use of new information technologies in the service of justice, particularly from a rights-protective and human-rights-compliant perspective<sup>37</sup>, with the aim of supporting «a high level of data protection, digital rights and ethical standards»<sup>38</sup>.

Since the publication of the study *Liability for artificial intelligence and other emerging digital technologies* in April 2019, and the adoption of the White Paper on AI of 19 February 2020 by the European Commission<sup>39</sup>, the opportunities associated with the use of new technologies and the risks they pose to fundamental rights have been highlighted, creating the need for a new regulatory framework. In the subsequent conclusions of 21 October 2020, the Council called for addressing the opacity, complexity, bias, unpredictability, and partially autonomous behaviour of certain AI systems in order to ensure compatibility with fundamental rights and facilitate the application of legal rules<sup>40</sup>.

The European Parliament has also undertaken several initiatives. In October 2020, it adopted a set of resolutions concerning AI, including with respect to ethics, liability, and copyright<sup>41</sup>. In 2021, additional resolutions followed on AI in criminal matters (2020/2016(INI)) and in the fields of education, culture, and the audiovisual sector (2020/2017(INI)). The Council of the European Union subsequently invited the Commission to seize the opportunities of digitalisation while ensuring that fundamental rights are preserved in all EU actions aimed at establishing effective legal protection and access to justice<sup>42</sup>.

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<sup>37</sup> M. GIALUZ, *Quando la giustizia penale incontra l'intelligenza artificiale: luci e ombre dei risk assessment tools tra Stati Uniti ed Europa*, in *Dir. pen. cont.*, 29 maggio 2019, p. 12.

<sup>38</sup> European Council, *Conclusions* EUCO 14/17, Brussels, 19 October 2017, p. 7.

<sup>39</sup> European Commission, *White Paper on Artificial Intelligence – A European approach to excellence and trust*, Brussels, 19.2.2020, COM(2020) 65 final, *passim*, spec. p. 9 ff.

<sup>40</sup> Council of the European Union, *Presidency conclusions – The Charter of Fundamental Rights in the context of Artificial Intelligence and Digital Change*, Brussels, 21 October 2020, 11481/2020, p. 5.

<sup>41</sup> European Parliament Resolution, *Intellectual property rights for the development of AI technologies*, 20 October 2020, 2020/2015(INI).

<sup>42</sup> Council of the European Union, *Council Conclusions on the Use of Artificial Intelligence in the Field of Justice*, Brussels, 16 December 2024, 16933/24.



Within this framework lies Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 (AI Act), which establishes rules on AI, based on the conviction that its use may contribute to socially and environmentally beneficial outcomes and provide essential competitive advantages to businesses and the European economy (European Commission, COM(2021) 206 final). However, recognising that the same elements and techniques that generate socioeconomic benefits may also entail risks or negative consequences for individuals and society, the EU has committed to a balanced approach, ensuring technological leadership while protecting EU values, fundamental rights, and principles.

The AI Act classifies AI systems used in the legislative, justice, and alternative dispute resolution sectors as high-risk and subjects them to conformity assessments, quality certification requirements for data and transparency, and other safeguards aimed at ensuring a high level of reliability (AI Act Annex III, para. 8(a)).

Conversely, several practices are prohibited because they are considered incompatible with fundamental rights and EU values: real-time facial recognition (except for terrorism-related offences); the use of predictive policing to project past statistical patterns into the future; emotion-recognition techniques; social scoring systems that classify citizens based on social behaviour or subjective characteristics.

Moreover, data collection and open access to databases must not allow the profiling of judges to reconstruct their legal reasoning or judicial approach with the aim of building predictive defence strategies.

AI must therefore be used in justice systems in full compliance with the Charter of Fundamental Rights, the AI Act, the GDPR, and Directive (EU) 2016/680 regarding the processing of personal data by competent authorities for criminal purposes, ensuring transparency, accountability, and oversight, and guaranteeing that AI systems are safe and trustworthy. Key criteria in the design, development, and use of AI systems must include: the right to an effective remedy, the right to a fair and public hearing within a reasonable time, and the presumption of innocence.

In any case, AI may support decision-making in judicial and alternative dispute resolution proceedings, but must never replace the final decision-making, which must remain a human-led activity. The use of AI in this context must be transparent, properly traceable, and explainable, and subject to human supervision.

In light of these considerations, the European e-Justice Strategy (2024–2028) aims to guide the digital transformation of the justice sector throughout the EU by offering concrete and lasting benefits through reduced costs



associated with access to justice and with the functioning of judicial systems. In particular, the Strategy aims to: identify strategic and operational objectives and principles to be upheld during the digital transformation process; implement organisational and methodological measures; identify key factors that facilitate and promote digitalisation; and promote mechanisms facilitating coordination and follow-up of progress made in these initiatives. These objectives must be pursued in parallel in both civil and criminal justice, taking into account the implications of digital transformation in these areas.

Currently, regulations on the service of documents (Regulation (EU) 2020/1784) and the taking of evidence (Regulation (EU) 2020/1783) already establish a legal framework for the digitalisation of these instruments of judicial cooperation in civil and commercial matters. The regulation on electronic evidence (Regulation (EU) 2023/1543) is an additional instrument for digitalisation in criminal proceedings. The regulation and directive on the digitalisation of cross-border judicial cooperation and access to justice (the so-called «digitalisation package») are fundamental pillars for European e-Justice in the coming years.

Beyond the EU, several other international organisations have adopted significant documents in the field of AI, including: the OECD Council Recommendation on Artificial Intelligence; the UN Human Rights Council Resolution of 10 July 2024 on the promotion and protection of all human rights – including independence and impartiality of the judiciary, jurors, assessors, and independence of lawyers; the final report of the UN Advisory Body on Artificial Intelligence; and the Council of Europe Framework Convention on AI, human rights, democracy, and the rule of law<sup>43</sup>, which aims to ensure that AI activities remain fully consistent with human rights, democracy, and the rule of law.

### 3. The regulatory framework and new regulatory perspectives

Of particular importance is the European Ethical Charter on the Use of AI in Judicial Systems and its guidelines on the use of AI in the judiciary, issued by the European Commission for the Efficiency of Justice (CEPEJ) of the Council of Europe.

It is a non-binding instrument, yet it has the merit of setting out both substantive and methodological principles. It is particularly significant insofar as it constitutes the first document aimed at establishing criteria to guide the

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<sup>43</sup> Council of Europe Treaty Series No. 225, Vilnius, 5 September 2024.



development and use of AI systems supporting judicial decision-making. The underlying idea emerging from the document is that AI – when used not as a substitute for the judge but as an auxiliary tool – may, under certain circumstances, enhance predictability in the application of the law and improve the uniformity of judicial orientations. The fundamental principles governing the use of AI in judicial systems are, however, the respect for fundamental rights and the right to non-discrimination, the right to system quality and safety, and the right to transparency and user oversight. Compliance with these principles must be ensured from the very stages of system design and learning, according to an ethical-by-design or human-rights-by-design approach. The observance of such principles should be guaranteed by an independent authority entrusted with certification and supervisory powers.

The Charter also examines specific issues concerning analytical methodology and the automated processing of judicial decisions. Data processing conducted through machine learning should rely on original certified documents, and the integrity of such data should be ensured throughout all phases of processing. Particular attention should be devoted to the selection of judicial decisions that are subsequently processed through machine learning. These decisions should be genuinely representative of the various realities on which judges are called to rule, and should not correspond to predetermined analytical grids. Moreover, the Charter emphasises the need for a secure technological environment for the storage and implementation of machine-learning models and algorithms. It therefore underscores the importance of making data-processing techniques accessible and comprehensible, as well as permitting external audits by independent actors in order to detect potential distortions. Finally, it highlights the need to strengthen users' autonomy when employing AI tools and services. Judges, in particular, should be able at any time to return to the judicial decisions and data used to produce a given output, and must always retain the possibility of departing from such outputs in light of the specific circumstances of the case at hand<sup>44</sup>. Each user should also be informed, in clear and comprehensible language, of the binding or non-binding nature of AI-generated solutions, of the available options, and of his or her right to legal assistance and to access a court.

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<sup>44</sup> G. RICCIO, *Ragionando su intelligenza artificiale e processo penale*, in *Arch. pen.*, 3, 2019, p. 10.



## 4. Concluding remarks

Every individual has the right to «an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law» (Art. 8 of the Universal Declaration of Human Rights).

The advancement of digitalisation therefore requires an assessment of the effectiveness of the protection afforded to fundamental rights and to the core principles of due process: the presumption of innocence; the adversarial principle and the ability to challenge the evidence; the duty to give reasons for judicial decisions and the control of their legality and rationality; and the principle *in dubio pro reo*.

Moreover, digital-justice initiatives must respect the independence of the judiciary and the rule of law. Particular caution is needed in the field of criminal justice, where the use of technologies for remote communication may entail serious risks for the fundamental rights of suspects and defendants – especially the right to a fair trial, the right to be present at one’s trial, and defence rights. Indeed, every individual «is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him» (Art. 10 UDHR), and if accused of a criminal offence «has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence» (Art. 11 UDHR).

It must not be forgotten that every trial is a tool for the protection of individual rights, and that behind each request for judicial protection «there lies a personal struggle», such that «logic and statistics may assist, but prove inadequate when confronted with the human story underlying the proceedings»<sup>45</sup>. Accordingly, the limit that cannot be crossed is the safeguarding of the human context of justice, preserving its capacity for mediation and conflict resolution.

As with any phenomenon influenced by technological evolution, it is crucial to pay careful attention both to the potential risks (for the system of guarantees and individual protections, as well as for the exercise of judicial functions) and to the opportunities (cost and time savings relating to data-collection operations, large-scale document analysis, research into judicial precedents, or the drafting of standardised acts).

AI technologies play an increasingly decisive and pervasive role in social activities geared toward maximising functional efficiency, including the legal sector. Yet digital innovation will yield positive results only if firmly anchored

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<sup>45</sup> F. DALFINO, *Stupidità (non solo) artificiale, predittività e processo*, in *Quest. Giust.*, 3 luglio 2019.



to the goals of broadening access to remedies for fundamental human rights violations, facilitating the understanding of judicial reasoning, reducing inconsistency and shortening trial duration, and – more broadly – improving the organisation of the judicial machinery. In this context, the training of all judicial actors is indispensable.

A cautious approach to integrating AI into judicial systems must therefore be recommended: it will become increasingly important to ensure that proposed applications genuinely add value for users and effectively contribute to access to justice and to the achievement of the objectives of the public justice service, rather than undermining the inviolable rights of individuals. Above all, judicial supervision must remain central and must constitute an indispensable step because human qualities can never be replaced by artificial components and «the healthy awareness of one’s own ignorance is a feature that characterises human beings and their search for meaning, and does not lend itself to the logic of AI»<sup>46</sup>.

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<sup>46</sup>C. CASONATO, *Intelligenza artificiale e diritto costituzionale: prime considerazioni*, in *DPCE*, Special Issue, May, 2019, p. 124.

