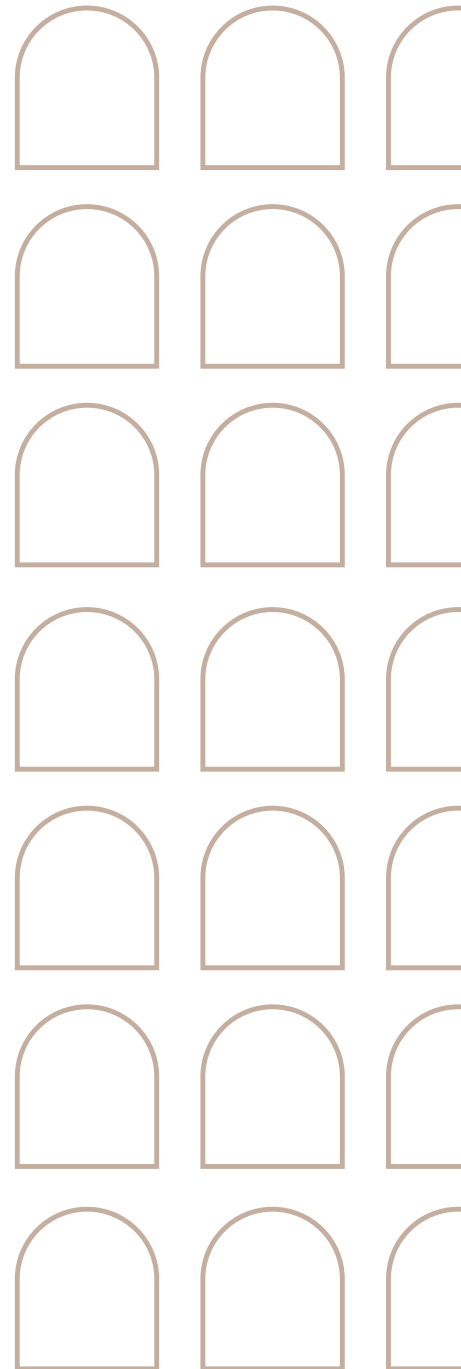EUI

STG Policy Papers

POLICY BRIEF

ALGORITHMS, RULE OF LAW, AND THE FUTURE OF JUSTICE: IMPLICATIONS IN THE ESTONIAN JUSTICE SYSTEM
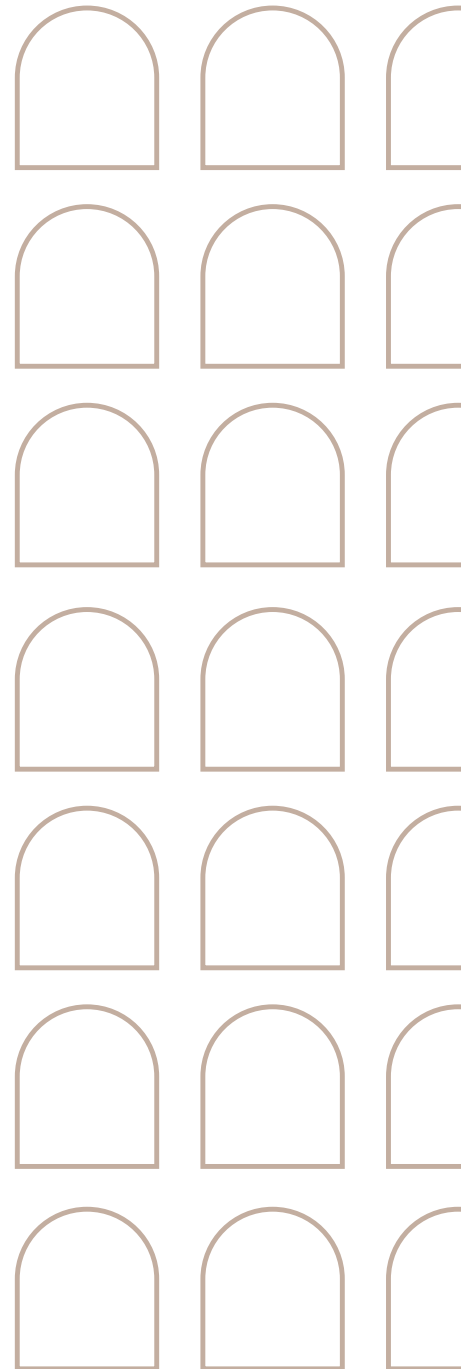
Authors:

Marta Gamito Cantero, Giulia Gentile

EXECUTIVE SUMMARY

This policy brief outlines the prospects, challenges, and potential directions for the use of artificial intelligence (AI) in the judiciary, using Estonia as a case study. It summarises various perspectives on the use of technology and especially AI in the justice sector drawing on the experience of Estonian judges, administrators, and academics. It further offers policy recommendations for the development, implementation, and use of AI tools and automated decision making (ADM) systems in the judiciary. This policy brief is based on a recent seminar with key stakeholders including Estonian judges and academics held in Tartu (Estonia) on March 24, 2023. Despite the rapid digital transformation of the Estonian public administration, the digitalisation of its judiciary has been slower due to resistance from stakeholders, technical challenges, and concerns over the ethical implications of AI in judicial decision-making.

Authors:

Marta Cantero Gamito | School of Transnational Governance, EUI
Giulia Gentile | The London School of Economics and Political Science

1. INTRODUCTION

The increasing use of algorithms for automating decision-making in domains such as finance, healthcare and the judiciary has generated considerable interest and debate among scholars and practitioners alike. While algorithms can improve efficiency, reduce bias, and lead to better outcomes in decision-making, they also raise important ethical and legal questions. Specifically, algorithmic decision-making can potentially undermine accountability, transparency, and fairness. Moreover, when algorithms are opaque, difficult to understand, or poorly designed, they may perpetuate or even amplify existing biases and discrimination.

The tension between the potential benefits and the actual risks of AI becomes particularly evident in justice systems, which are currently facing severe budget cuts while dealing with an increased workload. Automation through AI promises to address these shortcomings and deliver more effective, accurate, speedier justice. But AI-driven court systems may also undermine the current role of judges, by restricting their independence under the aegis of algorithmic regulation. As AI is expected to become increasingly ubiquitous in judicial systems across the world, it is essential to critically evaluate its potential benefits and risks, and to ensure that its use aligns with fundamental democratic values, including fairness, accountability, and transparency.

Estonia offers a relevant case-study in this respect. Since the late 1990s, the modernisation of Estonian courts set a world-leading example of the advantages but also the complexity surrounding the use of digital technologies in the court system. Estonian courts have pioneered the introduction of digital tools in the delivery of justice. After years of leading digital change in the courtroom, several lessons but also warnings on the use of AI in the justice system can be drawn from the Estonian model. Such critical reflections

become especially timely considering the AI frameworks introduced at the EU level and the judicial digitalisation plans taking place across Europe and beyond.

The workshop 'Algorithms, Rule of Law, and the Future of Justice: Implications in the Estonian Justice System', held at the University of Tartu on March 24, 2023, sought to explore the uses and challenges of technology, and especially AI, in the Estonian judiciary given its reputation as a technologically *avant-garde* jurisdiction. Participants from academia, the Estonian Government and judges, including the Supreme Court, met to exchange ideas on this controversial topic. Drawing on the workshop's discussions, this policy brief outlines the context, legal and practical challenges, and potential developments of the digitisation of justice in Estonia. It also offers recommendations on how to ensure that AI-driven justice complies with fundamental democratic values and principles.

2. CONTEXT: DIGITALISATION OF COURTS IN ESTONIA

Estonian higher courts pioneered the use of digital storage and processing of documents for proceedings: they incorporate several technological tools, such as the e-File system and the Court Information System.[1] Moreover, residents in Estonia can submit their taxes and even vote online; e-voting was used by 51% of voters in the latest Estonian elections. Furthermore, blockchain technology is used for many registers in the public sectors.[2] All these services are possible thanks to the main pillar of the digital infrastructure of the Estonian state for the interoperability of its services, X-Road. Unsurprisingly, there is consensus that Estonia is one of the most digitised countries in the world.[3]

The hype around the digitisation of Estonian courts peaked when news started circulating about the creation of robo-judges in Estonia to process small claims. Newspapers and

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1　The Court Information System (KIS) is a comprehensive tool for all Estonian courts, including the Supreme Court, providing a unified system for all case types. It facilitates case registration, hearing and judgment records, auto-assignment of cases to judges, summons creation, online judgment publication, and meta-data collection.
2　Since 2012, Estonia has been utilizing blockchain technology in real-world applications to safeguard its national data, digital services, and intelligent devices, across both governmental and commercial sectors.
3　According to the European Commission's 2020 Digital Economy and Society Index (DESI), Estonia ranks high in digital public services, with an overall score of 70.4 out of 100. European Commission, Digital Economy and Society Index (DESI) 2020, Estonia Country Report.

researchers advertised Estonia as the first jurisdiction to introduce AI judges. However, notwithstanding potential benefits of introducing AI in Estonian judicial system to alleviate the courts' workload, the Estonian Ministry of Justice is not in the process of creating an AI robot judge, as explained by Justice Pilving in a recent paper.

Workshop's participants representing the Estonian Supreme court expressed overall positive feedback on the use of digital tools in the court systems. The more time-consuming and repetitive tasks, including the filing of documents, were successfully taken on by digital tools. As a result, the backlog of cases was reduced, judges having more time to devote their attention to the solution of complex cases.[4]

Less optimistic were the views of judges sitting in lower instances, whose workload differs significantly from that of higher courts. Despite the Court Information System, some judges reported that traditional means of work through paper printed documents are more efficient. This is because of two reasons. First, there are technical flaws and recurrent glitches in the digital system used in Estonian courts, and fixing them requires time. Second, judges are somewhat defiant towards digital systems.

Participants expressed their hope for improved e-Justice in the future. A representative of the Ministry of Justice reported that there is an ongoing discussion at the Government level to improve the digitisation of courts, while respecting fundamental rights and the rule of law. The renewed approach of the Estonian institutions towards digitisation emerges also when considering the draft bill to amend the Administrative Procedure Act presented to the Estonian Parliament in 2022. The Bill takes a rather cautious approach by significantly limiting the automation of discretionary decisions and the use of self-learning algorithms in the public sector.

3. WHAT PLACE FOR JUSTICE IN A MACHINE'S WORLD?

The tensions between algorithmic decision-making and fair justice systems are well-documented, and Estonian courts are not oblivious to this debate. Several workshop's participants offered reflections on whether the automation of courts can ensure a fair delivery of justice. These issues are of 'legal-mathematical' nature, concerning the relationship between law and algorithms. Yet the views and perceptions of judges and individuals are of the essence to reflect on the potential implications of an 'artificial justice'.

For instance, a question that was heatedly debated is how procedural principles can be translated into algorithms. A judge highlighted the need to consider societal expectations and practical issues, like language barriers, when translating legal principles into algorithms. Challenges already arise when unpacking the 'exact' meaning of legal principles, even before designing the algorithms or related technology. In determining the content of these principles, the justice conception embraced by the judicial system has profound repercussions. On the one hand, justice may be seen as the embodiment of human dignity; on the other hand, justice may be seen, from a commodified perspective, as the 'mere' resolution of dispute. Several participants emphasised the importance of human dignity in decision-making, cautioning against a strict 'procedural efficiency' approach to justice that might be pursued in AI systems.

Academic participants brought forward an intriguing perspective by questioning the compatibility of binary mathematical logic with law, which is often nuanced and multi-layered. This issue opened a broader debate on the inherent nature of algorithms and the law. While binary logic — the backbone of all current computational systems — is essentially built on binary yes/no, true/false decisions, legal reasoning is considerably more complex. Laws often require interpretation, consideration of context, and the balancing of competing rights and interests. The question then becomes whether a system built on binary

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4   The average length of Estonian court civil proceedings has fallen from 156 days to 99 days in just 5 years (see Factsheet e-Justice, available at https://e-estonia.com/wp-content/uploads/2020mar-facts-a4-v04-e-justice.pdf

logic, such as AI, is at all compatible with the complexities of the law.

A participant from Estonian courts and academia further noted that digitalisation inadvertently exerts a form of *peer pressure* on judges, affecting their decisions. It was also underlined that, as AI becomes more prominent in court procedures, it may require a higher level of expertise. Other concerns by members of the judiciary included design issues, lack of trust in the AI technology, and the current inability of AI to fully capture the nuances required in judicial decision-making. The potential for AI to assist with tasks such as summarising facts and analysing case law was nonetheless appreciated. The importance of preserving human judges in the decision-making process was also stressed.

Another matter concerns the trust that the public has towards courts. Individuals have for centuries (en)trusted human adjudicators to decide their claims. Yet, as remarked by a judge at the Estonian Supreme Court, judges *are* black boxes: it is impossible to read the mind of human judges. This highlights the opacity of both human and AI-driven decision-making. Moreover, human judges can make mistakes similarly to machines. For instance, judges can be biased and infuse their inner preferences in their judgments. At the same time, the workshop's participants overall agreed that, while a human judge can explain him or herself and provide reasons for the judicial outcome, explanations from AI are inevitably more complex. A legal scholar remarked that the interplay between explainability, transparency, and fairness is the subject of several studies that offer important insights.[5] It was observed that public trust is only partially correlated to transparency in judicial decision-making.

An additional challenge for AI technology in the courtroom is its inability to replicate human empathy.[6] A participant added that a human judge is tasked with the duty to judge because of his or her humanness, and the subsequent ability to relate to the stories and the views shared by the parties involved in the proceedings. Other speakers argued that the key issue undermining trust in the use of AI in the legal field concerns lack of understanding and awareness on the functioning of these tools. Improving public digital literacy could drastically reduce distrusts in AI tools.

4. THE WAY FORWARD: STANDARDISING JUSTICE?

While seemingly impartial, algorithms can perpetuate the biases encoded into them during their development. Hence, understanding and addressing existing biases becomes a crucial step in ensuring fairness in automated justice. Questioning the underlying values that influence the design and implementation of ADM tools is of the essence. These values inherently shape the kind of justice AI system dispense. But the compatibility of automation and justice is not merely a question of *code and design*; it extends to the role of private actors in the development and deployment of these systems. How much influence should private entities have in shaping AI-driven justice tools? How to ensure that their motivations align with the delivery of fair and transparent justice?

As discussed in the workshop, technical standards can be a helpful tool to guide the design, implementation, and operation of AI in courts. They may regulate how data is collected, validated, processed, and stored to protect its integrity and reliability. Standards can also establish a minimum threshold for AI system performance, thus guaranteeing all AI tools used in courtrooms meet a certain level of trustworthiness. Moreover, standardising AI systems can ensure consistency in decision-making across various courts. This can lead to more predictable and reliable outcomes, enhancing the efficiency and credibility of the judicial system, while reducing the risk of incorrect or biased decisions. Lastly, standardisation can support transparency in AI systems: standards can enhance clarity on how

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5   Ferrario, A., & Loi, M. (2022). How explainability contributes to trust in AI. In 2022 ACM Conference on Fairness, Accountability, and Transparency (pp. 1457-1466); Felzmann, H., Fosch-Villaronga, E., Lutz, C., & Tamò-Larrieux, A. (2020). Towards transparency by design for artificial intelligence. *Science and Engineering Ethics*, 26(6), 3333-3361; Buiten, M. C. (2019). Towards intelligent regulation of artificial intelligence. *European Journal of Risk Regulation*, 10(1), 41-59; Fink, M. (2021). The EU Artificial Intelligence Act and access to justice. *EU Law Live*.
6   Ranchordas, S. (2021). Empathy in the digital administrative state. *Duke LJ*, 71, 1341.

a given system reaches a decision. This not only strengthens the system's accountability but also aids in its auditability.

Despite these advantages, there are also a few significant disadvantages to consider, as remarked during the workshop. Each jurisdiction or legal system, be it of civil or common law, may have unique requirements or procedures that technical standards might not adequately cater for. A participant expressed skepticism about the ability of AI to make accurate predictions and adapt to changing conditions. The potential AI inflexibility limits the ability to produce reliable forecasts, or to adapt to different legal cultures. There is also a risk that standardising AI justice tools could result in depersonalised decision-making. Additionally, standardisation could inadvertently be in the hands of a few dominant AI providers, potentially creating a monopolistic market structure.

To conclude, it is currently unclear how standardisation could affect access to justice. Could it simplify the process and make it more accessible, or would it create new barriers because of the opacity of algorithms? Could algorithms inadvertently create obstacles for individuals seeking justice under the aegis of digitisation? Finally, in the realm of ADM, the concept of judicial independence which is central to the rule of law takes on a new dimension. What does it mean for an ADM system to be independent, and how does this independence influence the justice dispensed? Can standards ensure independence?

Answering these questions requires a dialogue between data scientists and lawyers, as well as a potential rethinking of the administration of justice in our current society. Whether such a radical rethinking is desirable remains controversial.

5. RECOMMENDATIONS

Based on the workshop's discussion, several recommendations can be advanced:

i. **Need for efficient and reliable digital infrastructure:** To fully capitalize on the benefits of technological development, policy plans for the use of AI in courts must focus on building efficient, reliable digital infrastructures. The efficiency and reliability of digital infrastructures are particularly crucial given the experiences of lower court judges in Estonia, who have reported technical flaws and recurrent glitches in the existing Court Information System. For instance, learning from the successful implementation of the X-Road system, similar high standards of design, security, and maintenance should be adopted for any judicial digital infrastructure. Such infrastructure will form the backbone of all digital court services, ranging from e-filing systems to AI-assisted decision-making tools. Transparency in system management, prompt responses to technical issues, and open communication about system updates and improvements should feature effective and reliable digital infrastructures. Authorities should involve key stakeholders, including judges, lawyers, and the public, in the design and testing phases to ensure the developed system is user-friendly, effective, and meets the needs of its users.

ii. **Enhancing multidisciplinary research to embed procedural principles in AI systems:** Algorithms used in the justice system should comply with legal principles governing courts. In addition, AI systems must be transparent and explainable to their operators. Moreover, deciding legal cases often requires interpretative judgement, considering situational variables, case law, and the need to weigh differing interests impartially. Therefore, AI systems must be developed in a way that accommodates these features. It is crucial to ensure that procedural principles and interpretative flexibility are integrated into AI systems for legal decision-making. Without these features, justice systems would be deprived of their essential functions and characteristics. Accordingly, multidisciplinary research is needed to translate complex legal principles and the essential features of justice systems into

algorithmic logic. The translation process involves more than merely coding the letter of the law. An ongoing dialogue and collaboration between legal scholars, AI scientists, ethicists, sociologists, and practitioners will be key to the successful integration of legal principles into algorithmic systems, ensuring they deliver not just efficient, but also fair and empathetic justice.

iii. **Maintaining the law human:** The act of judging in courts is not merely procedural; it has a profound emotional and psychological dimension for those involved. The digital transformation of the judiciary should not result in the erosion of the human element that is intrinsic to the delivery of justice. Preserving the human dimension of the administration of justice ensures that the interpretation and application of the law remains anchored in the human context. A way to keep the law human is to guarantee a level of human input and influence within AI-driven legal decision-making processes. As automated tools enhance procedural efficiency, human input is pivotal for interpreting the nuanced elements of legal cases, which might be beyond the grasp of binary logic inherent to AI systems. Moreover, the presence of human oversight can also contribute to maintaining trust in the justice system, offering an additional layer of checks and balances to detect and correct potential errors or biases in AI decision-making.

iv. **Ensuring independence in automated decision-making (ADM):** Automation presents a new dimension to the age-old principle of judicial independence. ADM in the judiciary, like human judges, needs to be impartial and independent from any external factors or biases. While automated systems have significant potential in improving the efficiency and reach of justice delivery, the independence of ADM systems – their ability to make decisions free from external influence or bias – is fundamental to their role in a democratic and fair legal system. Hence, ensuring the independence of these systems and

its implementation at technical, ethical, and regulatory level, becomes essential. The involvement of private entities in the monitoring process raises questions about potential conflicts of interest and the need for effective regulation. Policy measures must ensure that the motivations of these actors align with the primary aim of a fair, neutral/unbiased, and transparent judicial process.

6. CAN WE KEEP JUSTICE HUMAN IN AN AI-DRIVEN WORLD?

As we navigate the digital age and consider the incorporation of AI in judicial systems, it is crucial that we maintain a human-centric approach to justice. The discussions and insights from this workshop have underscored the complexity of this task. While AI can enhance efficiency and assist with procedural tasks, it can also compromise the human elements of empathy, understanding, and nuanced legal interpretations that lie at the heart of our justice system. Standardisation could be a helpful tool in this respect: it could minimise risks by imposing requirements to AI systems in the justice field. At the same time, it could also replace fundamental features of judicial decision making and the law with rigid procedures. As we continue to explore and debate these issues, the focus must always remain on ensuring that our justice system is fair, transparent, and, above all, committed to upholding the fundamental rights and dignity of every individual.

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The STG Policy Papers Collection aims to further the EUI School of Transnational Governance's goal in creating a bridge between academia and policy and provide actionable knowledge for policy-making. The collection includes Policy Points (providing information at-a-glance), Policy Briefs (concise summaries of issues and recommended policy options), and Policy Analyses (in-depth analysis of particular issues). The contributions provide topical and policy-oriented perspectives on a diverse range of issues relevant to transnational governance. They are authored by STG staff and guest authors invited 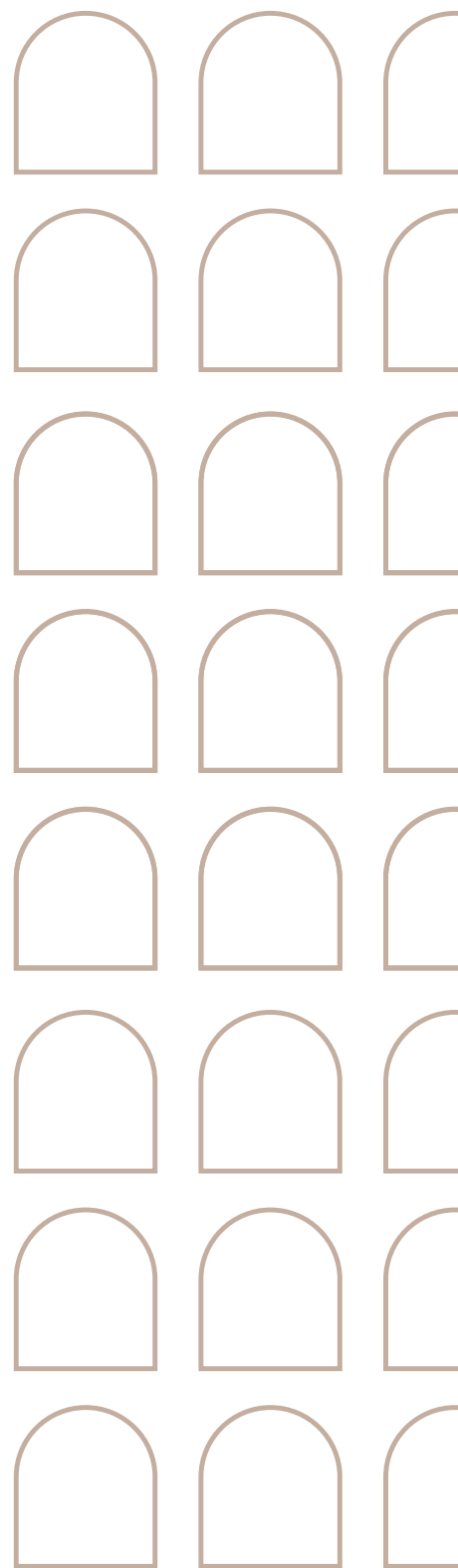to contribute on particular topics.