

Repercussions of artificial intelligence in the Supreme Federal Court: monocratic judgments and the risks of automated decision-making

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SUMMARY

This article analyzes the growing use of artificial intelligence (AI) systems in the Federal Supreme Court (STF), with a special focus on single-judge decisions and the impacts of Resolutions No. 332/2020 and No. 615/2025 of the National Council of Justice (CNJ). The research is based on the observation that such technologies, while promoting procedural speed and efficiency, also pose significant risks related to decision-making transparency, algorithmic biases, and institutional cybersecurity. In this context, the study seeks to assess the extent to which technological modernization can coexist with the constitutional guarantees of due process and judicial impartiality. The analysis is enriched by international experiences, such as the use of virtual judges in Estonia, China's digital courts, and the European Union's Ethics Guidelines for *Trustworthy AI*. These examples demonstrate that the adoption of technology must necessarily be conditioned on the existence of robust governance and audit mechanisms. In Brazil, Resolution No. 332/2020 represented an initial milestone by establishing principles such as transparency, non-discrimination and human responsibility.

Subsequently, Resolution No. 615/2025 reinforced aspects of algorithmic explainability, independent auditing, and digital security protocols, aligning with international standards such as the NIST Cybersecurity Framework. The conclusion is that the incorporation of AI into the Supreme Federal Court (STF) is inevitable, but must be regulated in a way that balances innovation with the preservation of fundamental rights. Digital justice will only be legitimate if guided by transparency, security, and social control, ensuring that technology becomes an ally of democracy, not a threat to its integrity.

Keywords: Artificial Intelligence – STF – CNJ – Algorithmic Biases – Cybersecurity – Monocratic Decisions

ABSTRACT

This article analyzes the increasing use of artificial intelligence (AI) systems in the Federal Supreme Court (STF), with a special focus on single-judge decisions and the impacts of Resolutions No. 332/2020 and No. 615/2025 of the National Council of Justice (CNJ). The research begins with the observation that such technologies, while promoting speed and procedural efficiency, also bring significant risks related to decision-making transparency, algorithmic biases, and institutional cybersecurity. In this context, the aim is to assess the extent to which technological modernization can coexist with constitutional guarantees of due process and judicial impartiality. The analysis is enriched by international experiences, such as the use of virtual judges in Estonia, China's digital courts, and the European Union's ethical guidelines for trustworthy AI. These examples show that the adoption of technology must necessarily be conditioned on the existence of robust governance and auditing mechanisms. In

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Brazil, Resolution No. 332/2020 marked an initial milestone by establishing principles such as transparency, non-discrimination, and human accountability. Later, Resolution No. 615/2025 reinforced aspects of algorithmic explainability, independent auditing, and digital security protocols, aligning with international standards such as the NIST Cybersecurity Framework. It is concluded that the incorporation of AI in the STF is inevitable but must be regulated in a way that balances innovation with the preservation of fundamental rights. Digital justice will only be legitimate if guided by transparency, security, and social oversight, ensuring that technology becomes an ally of democracy rather than a threat to its integrity.

Keywords: Artificial Intelligence – STF – CNJ – Algorithmic Bias – Cybersecurity – Single-Judge Decisions

1. INTRODUCTION

The incorporation of artificial intelligence (AI) into the Brazilian Judiciary, especially in the Federal Supreme Court (STF), reflects a global movement of transformation digital justice. This innovation, driven by the search for greater speed and efficiency, has been materialized by tools such as **Vitória** and **MARIA**, aimed at procedural screening and identification of topics of general repercussion. However, the adoption of such technologies in a field of such sensitivity as constitutional jurisdiction raises important dilemmas. As Doneda observes (2021), automated systems are not neutral and carry with them the choices of programming and the biases of their databases. This poses the challenge of reconciling technological innovation with the preservation of fundamental rights, such as due legal process (art. 5, LIV, CF) and the publicity of judicial decisions (art. 93, IX, CF). International experiences demonstrate both the benefits and the risks of this progress. Estonia, for example, implemented virtual judges for small claims, while China has established algorithmically driven digital courts. However, the *Council of Europe* (2022) warns of the dangers of “decisional opacity” when algorithms directly influence human cognition.

In Brazil, the National Council of Justice (CNJ) sought to mitigate risks through **Resolution No. 332/2020**, which established ethical principles of governance, and **Resolution No. 615/2025**, which reinforced security, auditing and algorithmic explainability.

Given this scenario, this work examines the repercussions of the use of AI in the STF, problematizing especially monocratic decisions and evaluating to what extent the technological innovation can be made compatible with the foundations of the State Democratic of Law.

2. ARTIFICIAL INTELLIGENCE AND THE BRAZILIAN JUDICIARY

The implementation of AI in the Brazilian Judiciary is part of the discourse of **efficiency procedural** and **reducing judicial congestion**. According to the Justice Report in Numbers 2024 (CNJ), more than 77 million cases are underway in the country, and automation emerges as a tool to deal with this volume.

Internationally, uses vary. The United Kingdom already uses AI for reviewing contracts and case law research in almost half of law firms (Susskind, 2020). In Brazil, the **Attorney General's Office (AGU)** uses the system **Sapiens**, capable of automatically drafting minutes of procedural statements, reducing time and administrative costs.

At the STF, digital tools act to filter **extraordinary resources** and identification of general repercussion. However, the legal debate intensifies when the IA approaches the **judge's core activity**. Can the judge delegate part of his/her cognition to an algorithmic system? For Lenio Streck (2021), the answer must be negative, since the jurisdictional function is non-delegable and is linked to guarantees constitutional grounds of justification and impartiality.

Thus, AI should be seen as **an auxiliary instrument**, not as a substitute for judicial decision, under penalty of weakening the democratic legitimacy of the Judiciary.

3. CNJ RESOLUTION Nº 332/2020: INITIAL GUIDELINES AND ITS LIMITS

CNJ Resolution No. 332/2020 constituted a pioneering regulatory framework by establishing the first ethical and governance parameters for the use of systems artificial intelligence in the Judiciary. Its basic principles sought to reconcile technological innovation with procedural constitutional guarantees, highlighting:

Transparency: systems must be auditable and understandable by all parties.

Non-Discrimination: prohibition of the reproduction of biases that compromise equality material and formal.

Human Responsibility: the final decision must always be under control and review of a magistrate, as provided for in art. 93, VIII, of the CF/88.

Information Security: Implementing Robust Measures Against Manipulation of data and external attacks.

However, the practical application of the resolution revealed significant challenges. The rapid technological evolution, especially with the advent of *machine* models highly complex *learning* (so-called "black box systems"), exposed the insufficiency of initial guidelines in the face of decision-making opacity (PASQUALE, 2015). The difficulty in auditing and understanding the *rationale* of sophisticated algorithms collided directly with the principle of motivation for judicial decisions, provided for in art. 93, IX of the Federal Constitution. Furthermore, the resolution proved to be unspecific regarding the cybersecurity protocols necessary to protect the critical infrastructure of the Judiciary, making it vulnerable in a global scenario of increasing sophistication of *ransomware* and targeted attacks.

4. CNJ RESOLUTION Nº 615/2025: REGULATORY ADVANCES AND THE NEW CHALLENGES OF ALGORITHMIC GOVERNANCE

In response to gaps in previous regulations and the scenario of accelerated transformation digital, the National Council of Justice issued Resolution No. 615/2025. This new legal diploma represented a significant advance in deepening digital governance of the Judiciary, incorporating lessons learned from foreign jurisdictions and doctrine specialized. Among its main innovations, the following stand out:

Mandatory independent and continuous auditing of AI systems, conducted by entities with technical expertise and functional independence, ensuring impartial assessment of its operation and impacts.

Reinforced cybersecurity protocols aligned with international standards, such as the *NIST Cybersecurity Framework*, with requirements for contingency plans and standing incident response committees to mitigate risks to judicial sovereignty and to data privacy.

Duty of algorithmic explainability (Explainable AI - XAI), ensuring that judicially assisted decisions can be understood, challenged and clearly and accessibly founded, preserving the adversarial system and broad defense (art. 5, LV, CF/88).

Promoting multisectoral social participation in construction, inspection and continuous improvement of systems, involving academia, professional associations and

civil society organizations, in line with what was advocated by ZUBOFF (2019) on the need for democratic vigilance over social mediation technologies. Despite the advances, Resolution 615/2025 also faces the challenge of effectiveness. Implementing robust audits and ensuring full explainability in complex *deep learning* models remain technical obstacles considerable. Furthermore, the resolution operates in a normative field still in construction, lacking integration with comprehensive national legislation on artificial intelligence, as proposed in PL 2338/2023, which establishes the legal framework of AI in Brazil.

5. ALGORITHMIC BIASES, OPACITY AND THE ASSURANCE OF DUE ... LEGAL PROCESS

The promise of neutrality and objectivity of artificial intelligence is often deconstructed by critical literature, which warns of the materialization of **biases algorithmic** (O'NEIL, 2016). Such biases, often embedded in the training data or in the system's architecture itself, can perpetuate and even amplify discrimination historical based on race, gender, social class and geography. This phenomenon, known as "**algorithmic discrimination**" or "**coding bias**", represents a tangible threat to the constitutional principle of equality (art. 5, caput, CF/88). In the context of the STF, the use of AI for screening resources or for suggesting *outcomes* in monocratic decisions introduces a substantive risk: **decisional opacity**. When the logical path followed by the algorithm to reaching a conclusion is not intelligible either to the judges or to the parties, the constitutional principles of due process of law (art. 5, LIV), publicity (art. 93, IX) and the motivation of judicial decisions are severely compromised. As states Barroso (2020, p. 128), "the judicial process, as a space for carrying out the justice and legitimacy of decisions, cannot be transformed into a black box, incomprehensible to human beings."

This scenario demands more than superficial transparency; it demands **explainability. technique** (Explainable AI - XAI), where it is possible to track, audit and understand the influence of the algorithm on decision-making suggestions. Without this, the fundamental right to a effective and transparent legal protection becomes vulnerable, eroding social trust in the highest court in the land.

In addition to the biases inherent in the data, there is concern about **"fragmentation" algorithmic jurisprudence"**. AI systems trained to identify patterns in past decisions can, paradoxically, crystallize jurisprudential understandings outdated or minority, hindering the evolution of law and the adaptation of Judiciary to new social and normative realities. The risk is that the machine, in seeking efficiency in repeating patterns, become an obstacle to creative and adaptive function of constitutional jurisdiction, essential for the vitality of the legal system (STRECK, 2021).

Another critical aspect concerns the **impact on the practice of law and on the contradictory**. If the database and system logic are not fully accessible, how lawyers and public defenders can fully exercise the right to defense (art. 5, LV) and adversarial proceedings (art. 5, LV)? Can algorithmic opacity create an **insurmountable informational asymmetry** between the court and the parties, converting the process into a dialogue of the deaf where one of the parties does not understand the basis of the decision that affects it. This would require a reassessment of strategies procedural and, potentially, the creation of new instrumental rights, such as the **"right to explanation"** in the face of AI-assisted judicial decisions, a topic already under debate in the doctrine of digital law (WAEDELDE; MCGOLDRICK, 2016). Therefore, algorithmic biases do not represent just a technical defect to be corrected, but rather a **legal and constitutional issue of the first magnitude**, which touches on the basic principles of the Democratic Rule of Law. Overcoming this challenge requires a continuous effort of auditing, transparency and, above all, the reaffirmation of the central role of the human judge as the ultimate guardian of impartiality and justice in the decision-making process.

6. CYBERSECURITY, DATA PROTECTION AND SOVEREIGNTY DIGITAL JUDICIAL

The Judiciary is a repository of sensitive information of magnitude extraordinary, housing everything from personal data of millions of citizens to secrets of State and strategic information for complex criminal investigations. Integration of AI systems in this infrastructure exponentially amplifies their surface area attack, making it a priority target for malicious agents, both domestic and foreign.

A successful cyber attack can have catastrophic consequences, going far beyond the data leak. It can paralyze the functioning of the Justice system, manipulate decisions through the corruption of algorithms or databases (poisoning of data), and ultimately challenge the State's own **digital judicial sovereignty** Brazilian. CNJ Resolution 615/2025 is right to emphasize the adoption of frameworks international security agencies, such as NIST, and the creation of response cells to incidents.

At this point, the regulation of AI in the Judiciary directly dialogues with the **Law General Data Protection Regulation (LGPD - Law No. 13,709/2018)**. Data processing personal by AI systems must strictly observe its principles, especially those of purpose, suitability, necessity and safety, under penalty of massive violation of fundamental rights. Cybersecurity is no longer a merely technical issue to become an imperative of a Democratic State of Right.

7. SOCIETAL RELEVANCE AND THE IMPERATIVE OF CONTROL DEMOCRATIC

The discussion on artificial intelligence in the Supreme Federal Court transcends the court's walls and technical-legal circles. It is an **eminently political and democratic** debate about the future of jurisdiction and the limits of automation in the public sphere. Civil society, through their representative organizations, must have a guaranteed seat on the committees ethics and governance bodies that oversee the development and implementation of these technologies.

The judicialization of cases involving AI itself, as exemplified by the **MS 39,784** and **HC 230,963**, signals the emergence of a new field of litigation, where the validity and legitimacy of judicially assisted decisions are called into question check. The risk is the emergence of an "**algorithmic jurisprudence**" not supervised, which, in the name of questionable efficiency, may sacrifice the deliberative quality of law and the perception of justice (SUSSKIND, 2019).

Therefore, AI governance in the Judiciary must be open, pluralistic, and responsive. technology must be an instrument to improve access to justice and rationality decision-making, never an end in itself that replaces human judgment and

reasoned judicial discretion, central elements for the application
equality of law in a constitutional state.

8. CONCLUSION

Analysis of normative evolution – from CNJ Resolutions No. 332/2020 to No. 615/2025 – demonstrates a maturation in the regulatory approach to artificial intelligence in Brazilian Judiciary. The inevitability of its incorporation is recognized, but progress is being made in attempts to build protective dikes against its most pernicious risks: opacity, algorithmic discrimination and digital vulnerability.

However, CNJ regulations, however robust they may be, do not operate in a vacuum. Its effectiveness depends on **adequate technical infrastructure, investment constant training** of judges and civil servants, and, above all, of the **consonance with a national legal framework** that regulates the development and use of AI throughout public administration, in accordance with the Constitution and the LGPD. The recent proposal of **Bill No. 2338/2023**, which aims to establish the Legal Framework for Artificial Intelligence in Brazil is a fundamental step in this direction, as it seeks fill gaps and create a compliance and civil liability regime for developers and users of automated systems.

The challenges exposed – from biases to cybersecurity – reaffirm that technology is a tool, not an end. It is up to the Law, in its ordering and guaranteeing function, ensure that artificial intelligence in the STF and throughout the Judiciary is implemented to **strengthen, not weaken, the pillars of the Democratic Rule of Law**: the access to justice, impartiality of judgment, transparency, legal certainty and, above all, above all, society's trust in its most important guardian institution Constitution.

Looking to the future, it is imperative to also consider the **labor impacts** of automation in the field of Justice. The introduction of AI cannot mean the mere replacement of technical staff and judicial analysts, but it should be seen as a opportunity to **redefine functions**, directing human capital towards tasks of greater cognitive complexity, ethical supervision and mediation, areas in which the human sensitivity and discernment are irreplaceable.

Finally, AI governance in the Judiciary must be understood as a **dynamic and iterative process**, not a finished product. It is necessary to create

of **permanent observatories** that monitor emerging jurisprudence on the theme, evaluate the social impacts of the implemented tools and promote **critical digital education** not only for legal professionals, but for the entire society. Only through continuous, transparent and democratic control informed will be able to ensure that artificial intelligence fulfills its potential transformative as an ally of justice, efficiency and equity, without ever becoming an autonomous and opaque force that compromises the human and deliberative nature of jurisdiction.

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