

ARTIFICIAL INTELLIGENCE

APPLIED TO CONFLICT
MANAGEMENT IN THE
JUDICIARY SCOPE

FIRST FÓRUM ON
LAW AND TECHNOLOGY

ORGANIZER

LUIS FELIPE SALOMÃO

President

Carlos Ivan Simonsen Leal

Vice-Presidents

Francisco Oswaldo Neves Dornelles

Marcos Cintra Cavalcanti de Albuquerque

BOARD OF DIRECTORS**Members**

Armando Klabin

Carlos Alberto Pires de Carvalho e Albuquerque

Cristiano Buarque Franco Neto

Ermene Galvêas

José Luiz Miranda

Lindolpho de Carvalho Dias

Marcílio Marques Moreira

Roberto Paulo Cezar de Andrade

Deputies

Aldo Floris

Antonio Monteiro de Castro Filho

Ary Oswaldo Mattos Filho

Eduardo Baptista Vianna

Gilberto Duarte Prado

José Ermírio de Moraes Neto

Marcelo José Basílio de Souza Marinho

BOARD OF TRUSTEES**Members**

Alexandre Koch Torres de Assis

Antonio Alberto Gouvêa Vieira

Carlos Eduardo de Freitas

Cid Heraclito de Queiroz

Eduardo M. Krieger

Estado da Bahia

Estado do Rio de Janeiro

Estado do Rio Grande do Sul

Isaac Sidney Menezes Ferreira (Federação Brasileira de Bancos)

Jorge Irribarra (Souza Cruz S/A)

José Carlos Cardoso (IRB-Brasil Resseguros S.A.)

Luiz Chor

Luiz Ildelfonso Simões Lopes

Marcelo Serfaty

Marcio João de Andrade Fortes

Miguel Pachá

Pedro Henrique Mariani Bittencourt

Ronaldo Vilela (Sindicato das Empresas de Seguros Privados, de Previdência Complementar e de Capitalização nos Estados do Rio de Janeiro e do Espírito Santo)

Willy Otto Jordan Neto

Deputies

Almirante Luiz Guilherme Sá de Gusmão

Carlos Hamilton Vasconcelos Araújo

General Joaquim Maia Brandão Júnior

José Carlos Schmidt Murta Ribeiro

Leila Maria Carrilo Cavalcante Ribeiro Mariano

Luiz Roberto Nascimento Silva

Manoel Fernando Thompson Motta Filho

Olavo Monteiro de Carvalho (Monteiro Aranha Participações S.A)

Patrick de Larragoiti Lucas (Sul América Companhia Nacional de Seguros)

Ricardo Gattass

Rui Barreto

Solange Srouf (Banco de Investimentos Crédit Suisse S.A)

 FGV CONHECIMENTO

CENTRO DE INOVAÇÃO,
ADMINISTRAÇÃO E PESQUISA
DO JUDICIÁRIO

Academic Coordinator

Luís Felipe Salomão

Deputy Coordinator

Elton Leme

Executive-Coordinator and Researcher

Juliana Loss

Researchers

Fernanda Bragança

José Leovigildo Coelho

Maria Fernanda Dyma

Renata Braga

The content of this publication is the responsibility of the authors and does not necessarily reflect the opinion of FGV.

ISBN 978-65-86289-14-5

Summary

INTRODUCTION _____ 06

JUNE 29TH, 2020

OPENING _____ 09

Carlos Ivan Simonsen Leal _____ 10

Luciano Bandeira _____ 12

01 **PANEL 1** _____ 15

José Antonio Dias
Toffoli _____ 16

Humberto Martins _____ 22

02 **PANEL 2** _____ 33

Juliana Loss _____ 34

Renata Braga _____ 36

03 **PANEL 3** _____ 43

Dierle Nunes _____ 42

CLOSURE _____ 49

Luis Felipe Salomão _____ 50

JULY 2, 2020

OPENING _____ 53

Maria Cristina Peduzzi _____ 54

04 **PANEL 4** _____ 67

André Carlos Ponce de
Leon F. de Carvalho ____ 68

05 **PANEL 5** _____ 73

José Leovigildo
Coelho _____ 74

Marcus Lívio Gomes ____ 78

CLOSURE _____ 91

Luis Felipe Salomão _____ 92

INTRODUCTION

The issue of the efficiency of the justice system involves the idea of management and the application of technology, especially “artificial intelligence”. Given this scenario, the Center of Innovation, Administration and Legal Research at Fundação Getulio Vargas, under the coordination of Minister Luis Felipe Salomão, has the mission of identifying, understanding, systematizing, developing, and improving solutions aimed at bettering the justice system.

Fundação Getulio Vargas, through the Center of Innovation, Administration and Legal Research (CIAPJ/FGV), held the 1st Forum on Law and Technology, on June 29th, 2020 and July 2nd, 2020. These webinars fomented debates about Artificial intelligence as it applies to conflict management within the Judiciary. The questions concerning the efficiency of Justice involve the idea of management and the application of technology, especially “artificial intelligence”, which has stood out in recent years in the Judiciary. This scenario is the subject of research carried out by the FGV Judiciary Center, under the coordination of Minister Luis Felipe Salomão, whose mission is to identify, understand, systematize, develop, and improve solutions aimed at improving judicial quality.

The first webinar took place on June 29th, 2020 and was attended by the President of FGV, Carlos Ivan Simonsen Leal; the President of the Federal Supreme Court (STF), Dias Toffoli; the President of the Federal Supreme Court (STF) and the National Council of Justice (CNJ), the Minister of the Superior Court of Justice (STJ), Professor at FGV and Coordinator of the Center of Innovation, Administration and Legal Research, Luis Felipe Salomão; the Minister of the STJ and National Corregidor of Justice of the CNJ, Humberto Martins; the President of OAB / RJ, Luciano Bandeira; the Appellate Judge of the Rio de Janeiro Court of Justice (TJRJ), Professor at FGV and Assistant Coordinator of the CIAPJ, Elton Leme; the Executive Coordinator and Researcher at CIAPJ, Manager at FGV Mediation and External Consultant at FGV Chamber, Juliana Loss; the Collaborator Researcher at CIAPJ and Professor at the UFF/Volta Redonda Law Course Renata Braga; and also the professor at Universidade Federal de Minas Gerais (UFMG) and Pontifícia Universidade Católica at Minas Gerais (PUC-Minas), Dierle Nunes.

On this occasion, the preliminary results of the research developed by the FGV Center, entitled “Technology applied to conflict management in the sphere of the judiciary: The study of Brazilian artificial intelligence experiences” was released. Its objective is to research the national experience of applying state of the art technology via artificial intelligence in Brazilian courts. The survey includes data from the Federal Supreme Court and involves the other Courts and instances of the country.

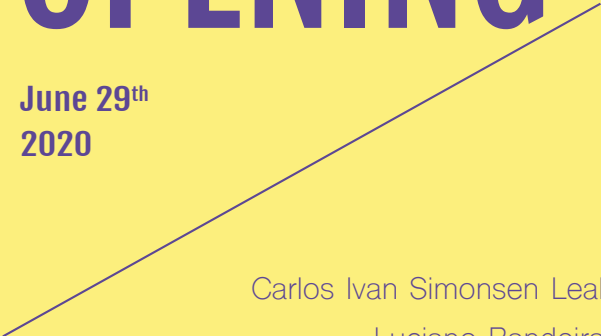
The data collected involves the current situation and the functionalities of each system, the expected and obtained results, and the demands that could be met by artificial intelligence, among other aspects.

The preliminary results, resulting from a sample of 96% of the research realm, point out that about half of the Brazilian courts have an artificial intelligence project under development or already implemented, mostly, by the internal team of the courts, as well as from partnerships amongst courts, which are being captained by the National Council of Justice and the Superior Council for Labor Justice.

This is the first stage of a research that aims to analyze different aspects of the use of artificial intelligence in other study areas that will be developed within the scope of the FGV Center in the future.

The second webinar took place on July 2, 2020 and was attended by the President of the Superior Labor Court, Maria Cristina Peduzzi; the Vice-Director of ICMC - USP, André Carlos Ponce de Leon F. de Carvalho; the Federal Judge at the Federal Regional Court of the 2nd Region, Marcus Lívio Gomes; the IT Coordinator at FGV Conhecimento, José Leovigildo Coelho, among others.

OPENING



**June 29th
2020**

Carlos Ivan Simonsen Leal
Luciano Bandeira



CARLOS IVAN SIMONSEN LEAL

President of FGV

In recent years, Fundação Getulio Vargas has been working on some projects that lead us to the use of artificial intelligence, especially trying to implement it in the very functioning of the Judiciary.

The first issue one should address is that people think that artificial intelligence will replace humans. I do not particularly believe that. On one hand, it can avoid working on a number of trivial things, but on the other, it can create some serious problems that will go unnoticed in the short term, such as fake news, which have recently arrived in the Judiciary.

Artificial intelligence will be increasingly applied and will not be limited to the courts. All information will now be processed for verification of previous standards. Based on neural networks, the technology purifies, perceives restrictions or changes and points out a prognosis based on such elements. It is an organized mathematical analogy process.

In the United States, studies on the use of artificial intelligence by the Judicial System, as well as on the profile of each judge and court, have grown significantly. All of this will entail an important initial gain, but it will immediately pose new challenges.

Any legislation regarding artificial intelligence must have a mandatory review period, in view of the technology updating speed. In fact, in a few years, innovation will occur at an

incredibly faster pace than today's, and standards need to keep up with these changes. Currently, there is still little knowledge regarding the application of artificial intelligence in the humanities. The great characteristic of the human being is to face certain types of risks, as is the case of Covid-19; a completely unique circumstance that has affected commercial and social relations worldwide.

The laws were not drafted to contemplate this situation and, even so, they will be applied in those contexts that call for a solution, with error or success. The use of artificial intelligence has a lot to contribute to this regard, however, it cannot be used in a way to further block the flow of litigation.

What I would like to leave as a message here is: Great innovations also bring enormous challenges.



LUCIANO BANDEIRA

President of the Sectional Council of Ordem dos Advogados do Brasil do Estado do Rio de Janeiro (Brazilian Bar Association of the State of Rio de Janeiro)

I would like to greet Appellate Judge Elton Leme, of the Rio de Janeiro State Court of Justice; I greet and thank the invitation from the President of the Fundação Getúlio Vargas, Carlos Ivan Simonsen Leal, PhD; I would like to greet the President of the Federal Supreme Court, Minister Dias Toffoli; I greet the Corregidor of the Superior Court of Justice, Minister Humberto Martins; I would also like to greet Minister Luís Felipe Salomão, whose work in the STJ makes the State of Rio de Janeiro very proud; my dear friend Juliana Loss, who dedicates her time to help the Rio de Janeiro Attorneys Association on such an important topic, and which I believe will be even more decisive in this post-pandemic resumption, which is mediation and the appropriate solutions for conflicts; I greet Professor Renata Braga; and I greet Professor Dierle Nunes who will deliver a presentation on regulation, a subject of special relevance at this moment.

Artificial intelligence is a challenge, and it should be highlighted, right at the beginning, that technology cannot be beaten. I witnessed between the 80s and 90s the outdatedness of some technology. The office where I was working as an intern had some telex machines and I still remember the day when they presented me with another machine that would replace it: the fax machine. In the historical process, these innovations have been going on faster and faster.

Artificial intelligence, particularly regarding advocacy, has a lot to contribute for us to achieve the ideally reasonable proceeding duration, provided for in the Citizen Constitution. It will help organize the proceedings and assist the magistrates in this regard. Brazil has a significant number of cases in higher courts that almost render the jurisdiction unfeasible and AI will be especially important for the construction of a precedent system defined in the New Civil Procedure Code, which will also result in greater legal certainty.

Artificial intelligence will bring up issues that need to be much debated as regulatory and ethical aspects. Human sensitivity, whether through lawyers, members of the Public Ministry and especially magistrates, cannot be lost. Therefore, advocacy welcomes the intervention of artificial intelligence and we believe this advancement in technology will result in a faster and more efficient judiciary. However, it is necessary to highlight that AI should only be an optimization tool for the performance of Legal operators.

I am sure that these new technologies will allow magistrates to be even more dedicated to their judicial function, as they will have more time to ponder cases. At the same time, the AI concerned us regarding some issues, as highlighted by the Professor and President of the Fundação Getulio Vargas in relation to ethics and safety and, therefore, we urgently need to debate the regulation of this topic.

All lawyers, especially those who work in the litigation field like me, yearn for a very solid construction of a precedent system that enables legal certainty, which will then help lawyers to guide their clients with greater precision.

I wish this to be a successful event. Congratulations Fundação Getulio Vargas. I am sure that the chosen speakers will contribute a great deal to the clarification of several doubts and concerns on this topic.

PANEL 1



ARTIFICIAL INTELLIGENCE IN
THE MANAGEMENT OF THE
JUDICIAL SYSTEM

José Antonio Dias Toffoli
Humberto Martins



JOSÉ ANTONIO DIAS TOFFOLI

Minister of the Federal Supreme Court

I would like to congratulate Fundação Getúlio Vargas and, particularly, the Center for Innovation, Research and Administration of the Judiciary, which develops an extremely relevant work. It is a pleasure to participate in this webinar.

We are gathered here to deal with a prominent topic that is even more notable due to the pandemic. For some years, the Judiciary has been preparing itself for digitalization: initially of the cases, then of the files and, finally, we have moved on to the electronic judicial procedure itself, with the possibility of electronic petitioning.

Since 2007, the Federal Supreme Court has delivered judgments by virtual plenary on issues of general repercussion. At the time, it was a real transformation, thanks to an effort led by Minister Ellen Gracie. Today, the Judiciary is in full operation and did not need to stop its work, even during this pandemic.

Three events tend to drastically change society: war; revolution; and epidemic. None of them are good. However, Humanity, once faced with these situations, draws important lessons.

The Judiciary increasingly tends to be a service. In this sense, Scottish researcher and professor Richard Susskind, who has published books on the area of information technology in the legal field, says that the Judiciary will no longer be a forum, that is, a place where people are present.

Last year, I met with him in London, along with several other judges, and very rich moment of discussions ensued in which we were able to report on the Brazilian experience of digital justice since 2007. He was impressed and was not familiar with our virtual system. The fact that the Portuguese language is not one of the six official languages of the UN means that many news and publications are not known abroad.

Artificial intelligence, in a comprehensive way, aims to facilitate knowledge and, like everything that is developed, it can be used for good or for evil. This is a particularly challenging future scenario. These technologies can go far beyond being auxiliary tools for traditional jobs. They can cause real transformations in culture, in the Brazilian Judiciary and, therefore, we must be ahead of these discussions.

These transformations, of course, also have an impact on the way Justice works and on decision-making itself. Through artificial intelligence it will be possible to check coherence in decision-making in relation to similar cases. This brings more transparency and, at the same time, greater knowledge of jurisprudence. In this sense, it promises to be a great ally for the solution of repetitive legal demands.

In this globalized world, the number of relationships and consumption relations has been greatly enhanced. Consequently, conflicts have been increasing and a greater volume of litigation is directed to the Judiciary. Due to this, the need arose for a platform that increases this capacity for resolving disputes.

I assumed the Presidency of the Supreme Court and the National Council of Justice in September of 2018 and one of my main guidelines was the delivery of a better judicial service. For instance, we now have a virtual administrative session with proposals for regulatory changes in the STF to give greater dynamism to the trials. We also prioritize the issue of collegiality, which has a judgment structure that provides greater time availability. We are preparing for a new form of world and COVID-19 has only accelerated this process. And we must structurally prepare ourselves for that time.

We are continuing a series of projects and experiencing a moment of accelerating requests. We must have the managerial capacity to update and improve existing technological tools. In the STF, we have a specific area of artificial intelligence since the administration of Minister Carmen Lúcia. The VICTOR project raises cases of general repercussion and assists in the work of civil servants. What before would require a dedication of almost an hour from an individual or even from a group of people, artificial intelligence resolves in about 5 seconds, identifying whether that claim has any already recognized general repercussions. This makes the analysis of such claim much easier.

During my management, we started a sentence unified system. In a year and a half, more than one million and six hundred thousand criminal enforcement proceedings were added to a national database. This unique system calculates everything: penalties, benefits, and pardon decrees, and is easily adapted to the new legislation. It automatizes calculations and is routinely audited.

Through this system, it is possible to know in advance whether the prisoner will benefit from a regime progression and, if so, it automatically triggers a warning.

The electronic judicial proceeding platform has existed since 2013 and is present in more than seventy courts. My management focused on investing and improving this system with technology updates, always complying with the requests of the Justice system: Public Defender, Public Prosecutor, Public and Private advocacy. We sought to innovate making an agreement with the Ministry of Justice regarding a digital negotiation platform prior to the lawsuit, named consumidor.gov.br.

At this moment, a platform is being developed to offer consensual methods. Fundação Getúlio Vargas has participated in the development of this project and Councilor Henrique Ávila from CNJ oversees this initiative. FGV's collaboration in this work has been especially important, also due to its experience with the judicial recovery platform. Today, 85% of Judiciary processes are on digital platforms. An unprecedented volume in the world. At the Federal Supreme Court, of 30 thousand cases in the collection (smallest collection in the last 24 years in the history of the Supreme Court), 96% are electronic. From anywhere in the world, the minister may be dispatching, accessing all parts, and making decisions.

The physical procedures only continue in this format for a single and exclusive reason: they are sensitive disputes that involve, for example, search and seizure and, for security reasons, continue to be elaborated on paper.

The development of artificial intelligence within the Brazilian justice depends on certain premises. The Judiciary must be understood as a unique system in its mission, despite being composed of different branches of justice. Thus, it is up to the CNJ to uphold the constitutional challenge of promoting work of organization and systematization of the various areas.

Another premise is that a policy aimed at using artificial intelligence solutions requires investment in sustainability and cultural adaptation. From 1920 to 1930, a habeas corpus at the Court of Justice of São Paulo dealt with the following question: the judge had decided on the criminal case using a typewriter and the party then claimed in the habeas corpus (almost 100 years ago) that there would be no proof that the judge wrote the sentence himself, since there was no sign of his handwriting in the sentence; only his signature. The plaintiff then asked for the nullification of the criminal conviction because it was not handwritten.

The Court ended up deciding on the validity of the decision, given the fact that even that it was not handwritten did not presume that the judge had not read the case, nor that he did not subscribe the decision.

Artificial intelligence systems are not fail-safe and must undergo constant improvements. In this scenario, the CNJ created the artificial intelligence center for the research, development and production of intelligence solutions with the objective of improving online judicial procedures by customizing technological solutions according to their evolution.

The Synapse platform and Codex tool developed for the ecosystem are already available and producing initial results. The Synapse unites a set of tech market features, such as artificial intelligence model hosting, model training based on assisted learning, and cloud services, among many others. Codex, in turn, has the task of extracting metadata from court proceedings to compose the necessary basis for training artificial intelligence algorithms. All of this requires training and investment, and strategic data protection.

The extraction of knowledge generated from machine learning requires data analysis. The greater the amount of data, the more inputs for artificial intelligence models. On the other hand, the legislation imposes institutional responsibility of careful treatment of data. ethical implications related to the application of artificial intelligence in the process cannot be overlooked.

Since we do not yet have an established parameter in our national legislation, we are grounded in the European Commission's Ethical Charter for the Effectiveness of Justice. This European model emphasizes the need to respect fundamental rights, non-discrimination of individuals and groups, and stresses that the models used must excel in quality and safety in processing of procedural data, always with impartiality, transparency, and equity.

Our main objective is to improve in this area so that we might direct these new technologies towards positive applications versus malicious use.

I always emphasize the need for dialogue with the Parliament, the Executive Branch, agencies, and civil society. I myself highlight the work of Fundação Getulio Vargas for its academic pursuits within the state-citizenry paradigm.

I congratulate President Carlos Ivan for the magnificent work that FGV does and our dear friend Luis Felipe Salomão, who coordinates this legal department and whose contribution has been especially important to this matter.

You've done a great job!



HUMBERTO MARTINS

President of the Superior Court of
Justice and of the National Council of
Justice

INTRODUCTION

Currently, several international studies conclude that the development of management systems with artificial intelligence applications will be increasingly used in various sectors of production. For example, artificial intelligence systems are already used to help establish statistical predictions on COVID-19 pandemic developments. I will provide two examples. The first is a “chat bot”, a computer program that dialogues with its human interlocutor. This “chat bot” was created by a French company and has been used to perform an analytical screening of people’s symptoms in relation to potential virus exposure. The second example is the use of artificial intelligence tools to help scientists analyze a huge amount of data related to the ongoing research on COVID-19. The World Economic Forum, the entity also known as the “Davos Forum”, has been dedicated to encouraging companies and governments to produce artificial intelligence systems to help combat the global health crisis.

There is no doubt artificial intelligence is a rapidly developing field of computer science. Its application will also be relevant for the future of the Judiciary. My presentation will focus on describing two very recent initiatives, which refer to the production of ethical guidelines for the development of tools and applications. Of these, the first initiative was taken by the Council of Europe, an international organization that brings together dozens of countries of the continent. The second initiative, also taken by an international organization, originated from the O.E.C.D. (Organization for Economic Cooperation and Development). However, before examining these two initiatives, I will briefly touch on the effective application of artificial intelligence within the Judiciary.

1. APPLICATION OF ARTIFICIAL INTELLIGENCE SYSTEMS IN THE JUDICIARY

In this work I will not describe the Brazilian initiatives of the Federal Supreme Court, the Superior Court, and other courts. Other participants in this event will certainly do so. However, to describe the two initiatives that I mentioned, I need to define what artificial intelligence is. Then, I will give generic examples of the potential use of these tools within the Judiciary Branch.

Before discussing the artificial intelligence applications available, it is worth mentioning the one we do not have. Specialized literature differentiates artificial intelligence in a broad, generic sense from that in a strict or limited sense. The first type is grounded in images of artificial intelligence and robotics that derives from cinema and science fiction literature. Thus, such a fantastic view of artificial intelligence refers to the creation of autonomous systems which can create other systems, as well as critically rationing as human beings.

The restricted concept of artificial intelligence is much more specific and refers to what we actually have. I will mention two artificial intelligence techniques that are already used among us and that are in full development. The first is called machine learning. There are several ways to create computer programs that can learn. The clearest example of them is given by the AlphaGo computer. This computer was created by Deep Mind, a subsidiary of Google. Its mission was to repeat the victory of Deep Blue, an IBM computer in a game. Deep Blue became famous for defeating a chess champion in 1996. However, no computer had ever beaten a Go champion (Chinese strategy game).

AlphaGo accomplished this in 2015. To do so, a machine learning technique was used by which the computer learned the intuitive and human technique of playing, as explained by the company that created the computer¹.

To capture the intuitive aspect of the game, a new solution was needed. We created AlphaGo, a computer program that combines advanced searches of concepts in logical trees with deep neural networks. These neural networks take a description of the Go board as a primary data and process it through several different networked layers that contain millions of connections like neurons. A neural network – the policy network – selects the next move to be played. Another neural network – the value network – predicts the winner of the game. AlphaGo has been instructed in numerous amateur games to help you develop an understanding of human play. Then he was programmed to play against different versions of himself thousands of times. Each time he played, he learned from his mistakes. Over time, AlphaGo has improved and become increasingly stronger and able to learn and make decisions. The process is known as reinforced learning.

The second technique is natural language processing. It can serve several applications in the legal field. Albeit an old technique, it has grown rapidly in recent years. There are several ways to create computer programs that use natural language processing. The main objective is for computers to achieve human-like comprehension of text and spoken language. At a basic level, they are processing modules for comprehending and producing natural human language. The program can therefore understand natural language and perform tasks according to spoken commands. It is a program that recognizes voice commands and performs certain tasks. This understanding of natural language can also be used for automated text transcription, as well as for the translation of texts. The more refined and trained the program, the more efficient it can be in carrying out tasks. On the other hand, computer programs can also generate responses in natural language. Thus, there are programs that based on some keywords will be able to offer adequate answers to questions. Machine learning techniques can be used so that computer programs become increasingly able to understand natural language and can generate more accurate responses.

---

1 Cf. HOLDOBLER, Steffen; MOHLE, Sibylle; TIGUNOVA, Anna. Lessons Learned from AlphaGo. Conference: YSIP2 – Proceedings of the Second Young Scientist's International Workshop on Trends in Information Processing, 2017. Available on < https://www.researchgate.net/publication/318825598_Lessons_Learned_from_AlphaGo>

It is evident that these artificial intelligence techniques can contribute a lot to public services in general and especially to judicial services. Such programs can serve as excellent search assistants in legal texts, as well as helping to produce and draft decisions in response to certain demands. They can also help improve search tools in judicial archives, such as jurisprudence searches, making the tools more efficient and useful for everyone.

After shortly explaining the application of artificial intelligence in the Judiciary, it is worth mentioning their potential regulation. As previously mentioned, I will describe two initiatives. Both focus on ethics and the promotion of technologies and not on banning their use. Therefore, the objective of both is to encourage best practices in the field applied artificial intelligence, in line with promoting fundamental values for the development of societies.

2. TWO INITIATIVES FOR ETHICAL REGULATION OF ARTIFICIAL INTELLIGENCE

2.1 The principles of the European Commission's Ethical Charter for the Efficiency of Justice (CEPEJ), of the Council of Europe

First of all, it should be cleared that the Council of Europe must not be confused with the European Union, nor with one of its bodies, the European Council. The Council of Europe is an international organization created by the Treaty of London in 1949, which is directly derived from the process of reconstructing European countries at the center of the post-WWII dialogue. That war was very traumatic and among the various movements for the reconstruction of the world at that time, it is worth noting the formation of the United Nations, in 1945, as well as the approval by the General Assembly of its 1948 Universal Declaration of Human Rights. In the case of the European continent, the Council of Europe was created with a Statute. However, shortly afterwards, the European Convention on Human Rights was approved in 1953, in which the institution of the European Court of Human Rights was rooted (Title II of the international document). The Court was installed in 1959 and has a crucial role in ensuring the Convention's effectiveness. The Council of Europe has always been attentive to the importance of the judiciary for the sustainable development of nations. Such a mission was already provided for in the European Convention on Human Rights, specifically in article 6. However, as mentioned before, the world we live in is experiencing profound changes. Thus, with the mission of societal development, the Council of Europe works to remain active, in line with its founding principles.

In 2002, the Council of Europe created the European Commission for the Efficiency of Justice (CEPEJ) with certain missions: to collaborate to improve the efficiency and quality of the judicial systems of its Member States, relieving the excessive workload of the European Court of Human Rights; helping balance the content of decisions taken in national and international levels; ensure that all persons affected by the jurisdictions of the Member States can effectively enforce their rights and thus contribute to strengthening citizen confidence in the judicial system; and to allow the best application of the Council of Europe's instruments of international collaboration, related to efficiency and equity in the application of justice. This advisory body was installed with the Council of Ministers of the Council of Europe and has worked over the years in activities to evaluate the judicial systems of the Member States. A relevant task to which CEPEJ has been dedicated is to help Member States to effect the digital transformation of their judicial systems. The process of digitalization of public services has reached the judicial systems, which are in an accelerated march of implantation of tools and applications. One aspect of these applications is artificial intelligence. With this problem in mind, CEPEJ carried out studies and research; following initial work in December 2018, the Council of Europe adopted the "European Ethical Charter on the use of artificial intelligence in judicial systems and their environment". The Ethics Charter has five principles, which deserve being explained.

The first is the principle of respect for fundamental rights. With it, the aim is that the design and application of artificial intelligence tools and services have respect for fundamental rights. The reference of these fundamental rights, in this specific case, is as much related to the national legal system of the Member States, as to those rights confirmed by the international documents to which they adhered.

The second principle is non-discrimination, whereby it is determined that artificial intelligence cannot be used as a mean to discriminate against people, or groups of people, in the environment of judicial systems.

The third principle is that of quality and safety. When dealing with artificial intelligence applications, data is also being processed and, therefore, the reliability of the systems, as well as their security, is crucial. The objective is to use data sources and treatment systems that are reliable, with the use of certification to ensure the effectiveness of this principle.

The fourth principle refers to transparency, impartiality, and fairness. One of the biggest challenges for artificial intelligence applications is the ability to justify, in a clear, accessible, and understandable way, the bases on which a given decision was made with its use. One way to ensure the application of this principle is to establish external technical audits. Making applications auditable is a major technical challenge.

Finally, the fifth principle is user control. Through this principle the users of the judicial systems can be informed and that they have control over the potentials and limits of the choices to which they will be submitted.

The CEPEJ document has two appendices. The first appendix consists of studies and research on the state of the art in the application of artificial intelligence in the Member States. The second appendix has elements that point to situations in which artificial intelligence can and should be stimulated, as well as others in which caution must be exercised. For example, the second appendix describes that the application of artificial intelligence should be encouraged to facilitate searches jurisprudence in repositories, as well as to enable service through robots, the “chat bots”. On the other hand, the second appendix also demonstrates a serious concern with the use of artificial intelligence in criminal trials in which a specific criminal profile is formed. Such use must therefore be extremely cautious.

Once the general lines of the specific document regarding the judicial use of artificial intelligence is explained, I will describe, in a few lines, the Guidelines of the Organization for Economic Cooperation and Development (OECD), which have a broader character.

2.2. The Organization for Economic Co-Operation and Development (OECD) Guidelines for Artificial Intelligence

The Organization for Economic Cooperation and Development (OECD) received its current name in 1961, when the international Convention signed in 1960, in Paris, came into effect. However, it was originally created in 1948, with the mission of assisting in the process of reconstructing European economies, being the manager of the economic and technical support that became known as the Marshall Plan. At that historic moment, it was designated as an Organization for European Economic Cooperation. After the reasonable expansion of the economies of the European countries that were assisted, there was a decision to maintain an international body bringing these countries and others together. Thus, for example, the United States of America and Canada – promoters of the Marshall Plan – were integrated into the international organization that preceded the OECD in 1960. With the end of the Marshall Plan, the OECD’s mission was transformed. It no longer managed specific projects for just some countries. It could be converted into an international organization with a broader mission, related to the expansion of studies, research, projects and development to stimulate the market economy. The change can be

seen in the restructuring of the OECD, beginning in the 1990s, with the aim of expanding its membership. Currently, as it is well known, Brazil is one of those states that postulate their entry into the OECD.

The first two sections of the OECD Convention describe the Organization's missions well. The first section determines that it will promote public policies for the sustained growth of the economy and employment, as well as for the expansion of the standard of living of the Member States. Also, that such purposes should be explored in favor, also, of those States that, perhaps, are not members. The initial section further states that the OECD aims to contribute to the increase in multilateral trade. We should remind that the OECD, as per Section 2, aims to expand the liberalization of trade of goods, services, and capital, globally. One of the means available to the OECD to assist Member States and other countries in the world to develop their missions is to offer technical support in public policies. It is worth mentioning that the OECD's public policy proposals to fight money laundering and financing of organized crime and terrorism have wide applications around the world. Brazil, for example, is one of the signatory countries of the 1997 Convention on Combating the Corruption of Foreign Public Officials in International Business Transactions, having carried out its promulgation through Decree no. 3,678, from 2000.

Regarding the use and promotion of artificial intelligence, the OECD approved the Council Recommendation on Artificial Intelligence (OECD/LEGAL /0449), of May 21, 2019. This is the first document of its kind, of an international organization with intergovernmental character. The focus of the OECD proposal is broader than the Council of Europe's, since the first aims to be applied in all activities that use artificial intelligence, while the latter only focuses on applications within the Judiciary system. However, there is a striking parallel regarding the principles of the two proposals.

The first principle of the OECD Recommendation refers to inclusive and sustainable development and well-being. The objective of artificial intelligence tools and applications should always be aimed at improving people's quality of life, including postulating the inclusion of those parts of the population that would be historically prejudiced and underrepresented.

The second principle prescribes that artificial intelligence should be used with a focus on humanistic values and equity. This includes human rights and democratic values: individuals' freedom, dignity, and autonomy, as well as the protection of their personal data and privacy. Such values must also include the denial of discrimination and the promotion of equality, diversity, equity, social justice, and internationally recognized labor rights.

The third principle refers to transparency and knowability. Promoting the application of artificial intelligence tools must be accompanied by an explanation to the population about what it is, as well as an explanation – to the individually and collectively potentially affected individuals – about the functioning criteria and decision standards. It is worth noting that there is a parallel between this principle and that existing in the Ethical Charter of the Council of Europe.

The fourth principle, similarly to another one provided for in the Council of Europe's Ethical Charter, refers to robustness, stability, and security. This principle refers to the technical reliability of artificial intelligence tools and applications. Therefore, technical systems must have traceability in all production cycles, as well as allow systematic risk management to guarantee their integrity for the protection of privacy, digital security, and surveillance against operational bias.

Finally, the fifth principle refers to accountability in relation to the various actors participating in the artificial intelligence functioning and application processes, focusing on their role and actions.

It should be noted that Brazil is one of the 42 member states, and non-members of the OECD, that signed the commitment provided for in this Recommendation. This is very relevant, as Brazil is in the process of building its Brazilian Artificial Intelligence Strategy, which will serve as the basis for an investment plan and for building public policies for this sector, and which should, of course, influence several other private and public sectors. Regarding the Judiciary, it is certain that the application of artificial intelligence in our productive workflows will experience a dizzying increase in the near future.

CONCLUSION

On November 22, 2019, Minister Dias Toffoli, through Ordinance CNJ no. 197, instituted a Working Group to elaborate studies and proposals focused on ethics in the production and use of artificial intelligence in the Judiciary. It is certain that this Working Group will reflect the proposals of CEPEJ – of the Council of Europe – and of the OECD, which have been briefly described now. The most important thing to observe is that these guidelines do not constitute some irrelevant principles. On the contrary, they must guide both the production of artificial intelligence programs and the application of such tools and techniques. Therefore, a continuous investment will be necessary in the production of better and more adequate programs, as well as in the evaluation of the application of these programs in the daily life of the various judicial services in Brazil. It is certain that the Brazilian Judiciary is more than ready for such challenge.

PANEL 2



PRELIMINARY RESULTS OF THE
RESEARCH “TECHNOLOGY APPLIED TO
CONFLICT MANAGEMENT WITHIN THE SCOPE
OF THE JUDICIARY WITH AN EMPHASIS ON
ARTIFICIAL INTELLIGENCE”

Juliana Loss
Renata Braga



JULIANA LOSS

Executive Coordinator and Researcher at Center of Innovation, Administration and Legal Research of Fundação Getúlio Vargas. Manager of FGV Mediation and External Consultant to the FGV Chamber

First of all, I would like to thank you very much for the invitation to participate in this event. It is a pleasure and an honor to be part of the institution of Fundação Getúlio Vargas and also the Center of Innovation, Administration and Legal Research, precisely because it is one of the biggest challenges we have been facing within the justice system. Professor Dierle Nunes earlier pointed out that, until very recently, these themes were exotic, but they are now part of the routine in the Judiciary. One would dare to imagine oneself talking to these great leaders of the Judiciary about chat bots and artificial intelligence, among other issues, and at such a deep level.

I would like to greet everyone present: the President of the Federal Supreme Court, Minister Dias Toffoli; the Vice President of the Superior Court of Justice Minister, Humberto Martins; the President of the Rio de Janeiro Section of Ordem dos Advogados do Brasil (Brazilian Bar Association), Luciano Bandeira; the President of the Fundação Getúlio Vargas, Carlos Ivan Simonsen Leal; Minister Luis Felipe Salomão, our vanguard advisor; Appellate Judge Elton Leme; my dear fellow professors, Renata Braga and Dierle Nunes.

We will be presenting the preliminary results straightforward, which are undoubtedly the most interesting point. At the beginning, I would like to thank the courts, magistrates and civil servants who participated in this research. The initial analyzes show the work routine

behind the structure of the Judiciary to create tools to improve the justice system. This effort is not only occurring in this period of epidemic, but it is a long-term dedication that is still little known abroad, as highlighted by Minister Dias Toffoli.

From the perspective of Richard Susskind in “Tomorrow’s Lawyers”, we have in Brazil a significant body of “magistrates of tomorrow”, “Public Prosecutors of tomorrow”, “lawyers of tomorrow”, all quite integrated. We have a lot to show the world and FGV takes the lead in this regard. It is therefore a great satisfaction to announce the preliminary results of this work.

It is also necessary to highlight that Brazil has the best environment for the use of artificial intelligence, either because we are very digitalized, or because we have a large number of proceedings. Currently, this is a great asset to obtain enough data for a greater effectiveness of social self-knowledge.



RENATA BRAGA

Collaborating Researcher at the Center of Innovation, Administration and Legal Research of Fundação Getulio Vargas and Professor at the Law School of UFF/Volta Redonda

Good afternoon. I would like to greet the President of the Fundação Getulio Vargas, Carlos Ivan; Minister Dias Toffoli, President of the Federal Supreme Court; Minister Humberto Martins of the Superior Court of Justice; Minister Luís Felipe Salomão, who is also the coordinator of the Research Center, Innovation and Administration of the Judiciary of FGV; Appellate Judge Elton Leme of the Rio de Janeiro Court of Justice; Professor Dierle Nunes from the Universidade Federal de Minas Gerais and my fellow researcher, Professor Juliana Loss.

It is with immense satisfaction that we present the preliminary results of the research entitled “Technology applied to conflict management within the Judiciary with an emphasis on artificial intelligence”. The research started in October 2019 and, we completed the first stage in May 2020.

This research was thought to be one of the branches for monitoring the achievement of the goals related to the 16th sustainable development objective of the UN Agenda 2030, and its development is being carried out through the construction of an interinstitutional research network.

The goals foreseen for the first edition were the following: a) To identify the initiatives and experiences in the national Judiciary regarding artificial intelligence; b) To constitute a study methodology to analyze the following elements: current situation, impact, partnerships, functionalities, technological tools used, expectations and obtained results; c) To carry out a cross-analysis of this data with other data on the speed, efficiency, and productivity of the Courts.

The universe of this research was delimited around the Federal Supreme Court, the Superior Court of Justice, the Superior Labor Court, the Regional Labor Courts, and the Regional Federal Courts.

The data collection method was based on a form with the variables that have already been indicated and we reached a relevant sampling mark with a percentage of 96.25% coverage of the proposed universe.

This survey provided us with the knowledge coming from 72 artificial intelligence projects within the scope of the Judiciary and, in addition, this sample revealed impressive numbers such as, for example, Socrates 1.0, which is developed within the scope of the Superior Court of Justice, which has a specific artificial intelligence consultancy with cutting-edge projects.

Socrates 1.0 can identify groups of similar procedures in 100 thousand procedures, in less than 15 minutes, as well as other procedures that deal with the same matter in a universe of 2 million procedures and 8 million procedural pieces, which cover all procedures, procedures in progress at the STJ and another 4 years of history, in 24 seconds.

The Athos bot, also created by the STJ's artificial intelligence advisory, carried out grouping of similar judgments and about 29% were automatically included, and in June 19, 42% were already included.

The Horus bot was implemented in the Court of Justice of the Federal District and Territories, in a Tax Enforcement Court and has already automatically distributed 275,000 cases in less than 10 seconds for each case.

The TRF of the 1st Region has a bot called Secor that performs the systematization of data to be sent to the CNJ. Such activity was performed by 5 servers in 1 week and the robot performed in just 29 minutes.

We have also identified three systems that are produced by an external company and are being implemented in the Courts of Justice of Amazonas and other states. The Leia Penhora suggests to the lawyer the type of intermediate legal documents. This suggestion has the objective of avoiding rectifications and obtained a reduction of 90% in the number of petitions erroneously classified as generic. The Leia Penhora Online assists in 90% of the block and unblock consultation operations related to Bacen Jud. The Leia Precedentes automatically suggests linking procedures to certain precedent topics. For a set of 50 topics, 1.9 million court cases have been analyzed and convergence has been found in 168 thousand cases. Finally, the Escriba, implemented at the Court of Justice of Roraima, assists in the transcription of the hearings with an average accuracy of 80%.

The survey revealed that 100% of the Superior Courts, 100% of the Regional Federal Courts, 29% of the Regional Labor Courts and 74% of the Courts of Justice have artificial intelligence systems already implemented or as pilot projects or under development, as it turns out in the table below:

COURTS	IMPLEMENTED	PILOT PROJECT	UNDER DEVELOPMENT
Superior Courts	04	03	01
Regional Federal Courts	04	01	06
Regional Labor Courts	01	02	04
State Courts	18	04	24

We also found that artificial intelligence projects have been in development since 2017, with a greater concentration in 2019 and 2020.

Another interesting fact can be identified when crossing this information with the CNJ's Justice in Numbers Report. AI projects have been developed, primarily, by internal court teams:

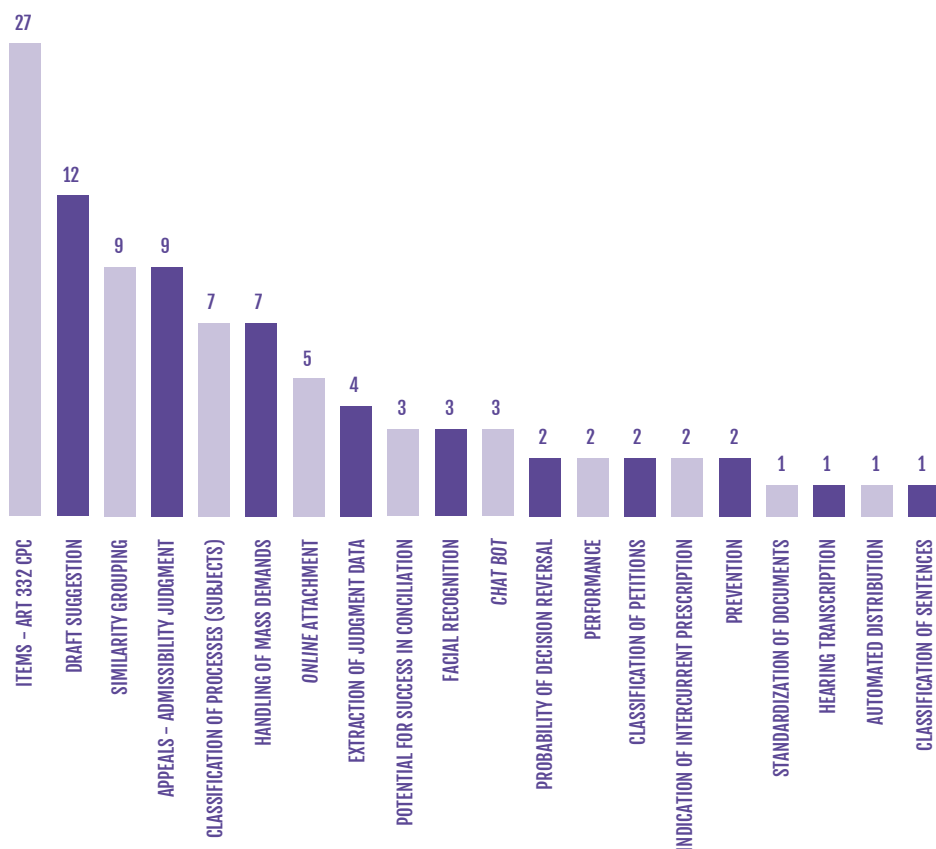
- Developed by the internal court staff – 54 projects
- Developed by the internal team of the courts in partnership with universities – 9 projects
- Developed by external team – 9 projects

Computer expenses have remained at the same level since 2013, even involving universities or an external team, therefore the development of the projects has not generated an increase in cost.

In addition, the cost of developing artificial intelligence projects has been reduced by the collaborative fronts that are being instituted by CNJ and CJST. The CNJ carried out a cooperation agreement with the Rondônia Court of Justice to institutionalize the Synapsis Platform, which, in fact, is a cradle for the development of other functionalities or other artificial intelligence systems and for this purpose the Artificial Intelligence Center was created. Thus, the projects developed for the PJe can be replicated and developed cooperatively.

In the same vein, within the scope of Labor Justice, Resolution CSJT no. 185, of March 24, 2017 determined that any investment in technology must be authorized by a commission, and this has enabled the identification of joint projects and collaborative fronts, bringing together teams from more than one court.

The research allowed us to identify the functionalities present in the AI projects. There is great concentration on the functionalities for the treatment of the application of the items of the 332 of the CPC, in the classification of procedures by subject, in the treatment of mass demands, in the online attachment. Other features developed are analysis of the potential for success in reconciliation, facial recognition, and indication of intercurrent prescription, among others, as presented in the graph below.



Such features were developed to meet the following objectives: effectiveness, productivity, automation of activities and speed. By conducting a cross-analysis of these functionalities that were raised by the forms applied in the courts with the data from the Report on the Image of the Judiciary, we can identify that they are the same attributes that are considered important by this research, such as efficiency, innovation in technology, speed, and transparency.

These are the preliminary results of the first edition of the research and, as these data are dynamic, they need a periodic update that will be carried out by the research team. The real impact in terms of productivity and speed, certainly, can be better measured in a few years.

Another point on which the project will be dedicated is the study of foreign experiences. However, we do not have many expectations regarding this aspect, since Brazil has a very peculiar reality due to the number of lawsuits, followed only by India.

Finally, as was also very well raised here by Minister Humberto Martins, the study of ethical aspects about the use of artificial intelligence in this environment is also one of our objectives.

This is, therefore, the first step on a long journey in this investigation.

I would like to thank, on behalf of the Center's researchers, all the courts that received us very well and that were willing to provide us with the data for this mapping.

PANEL 3



LEGAL REGULATION OF THE USE
OF ARTIFICIAL INTELLIGENCE IN
JUSTICE SYSTEMS

Dierle Nunes



DIERLE NUNES

Professor at Universidade Federal de Minas Gerais and Pontifícia Universidade Católica de Minas Gerais

Good afternoon, everyone. I would like to thank Fundação Getulio Vargas , Appellate Judge Elton Leme and Minister Luís Felipe Salomão for the invitation. It is a great honor to be here. I would also like to salute the President of the Federal Supreme Court, Minister Dias Toffoli; the Vice President of the Superior Court of Justice, Minister Humberto Martins; the President of the Rio de Janeiro Section of the Brazilian Bar Association, Luciano Bandeira; the President of the Fundação Getulio Vargas, Carlos Ivan Simonsen Leal; my colleagues Juliana Loss de Andrade and Renata Braga. Immediately, I would like to congratulate both of you on the extremely difficult research effort on this very captivating theme.

Initially, we need to discuss the issue of artificial intelligence regulation, making a separation that seems relevant to me: we are facing a very recent advance around the use of technology in the field of Justice and law; and people often confuse AI with the use of technology and with the very movement that the Brazilian justice system undertakes in relation to the virtualization of processes, which basically consists of an embryonic phase for automation.

The issue of regulation involves far beyond so-called online courts or digital justice. In fact, this issue concerns a tendency to use technology to automate certain activities in the judiciary, we are witnessing in the Brazilian Judiciary, but which still have a very limited

application of artificial intelligence: the projects basically consist of classifiers of procedures as is the case with Victor and Athos; or when thinking, for example, about the use of certain electronic actions in tax foreclosures, such as in the TJPE, Elis; and Poti at TJRN, which are mechanisms for online attachment automating.

AI regulation concerns a specific type of technology. The expectation is that through AI there will be the consolidation of a new phase of online dispute resolution; or the very structuring of a cognition with ODR, as in the case of the British Columbia Court in Canada, the three Internet Courts of China and the Court of Estonia, which enable digital justice with a little more proficiency.

These judicial bodies make use, in some points, of AI in the stage of diagnosis or cognition or in the very phase of mediation based on technology via bots. A Brazilian example would be the TJRJ itself, which implemented, with the assistance of the Academy, a platform to assist in judicial recoveries, as in the case of Ol Company.

The discussion on regulation begins with a choice of perspective: analyzing the issue from the judiciary's, which seems to be the trend as there is a problem related to the number of civil servants and magistrates; twenty million physical proceedings; a long procedural time span; and the GDP expenses on the justice system compared to other countries in the world.

However, we can also discuss the regulation with a perspective outside the Judiciary. The great risk of this option is to try to seek efficiency at any cost, which may be better in terms of speed, but on the other hand it makes control impossible. My proposal, therefore, is to analyze the issue with both approaches. Thus, an adequate understanding of Justice and an understanding of the impacts that AI can generate on the design of the system itself, since its structuring, is fundamental for its better evolution in this judicial environment.

AI is a knowledge field that involves several areas. The very concept of this technology that appeared in the 50's is in the sense of a consolidation of machines that would act in a similar way to man's cognition. This idea is reflected in the so-called Turing test or Imitation Game.

Machines have long since passed this stage. Today, we all have recurring contact with some type of artificial intelligence that helps us, whether it be Siri on your cell phone or Amazon tools like Alexa.

In its initial moment, AI did not have as many possibilities due to the lack of data. In turn, the Judiciary has a real wealth of information, case data, which have much to help in this regard.

The reality of Law has allowed for more sophisticated AI systems, such as, for example, the use of facial recognition for predictive policing. It is worth mentioning once again that these tools will perform better according to the quality of the data that are implanted in them and the concern with the biases of algorithmic models since the design phase.

AI solves a specific problem well: we do not yet have something like an “artificial superintelligence”. Nowadays, there are algorithmic models that, as a rule, perform simple operations. The quantity and quality of the data are important points because their absence can compromise and/or distort reality.

Some models already used in the judicial field have generated serious problems, such as COMPAS, which is the most emblematic example studied in the world. It is an algorithm model trained to perform risk analysis of inmates in the United States.

This risk analysis in the American system has been recurrent since the 1970s, but it was carried out based on legal data. In 2015, COMPAS started to be used by several states of the American federation. It performs a risk analysis to assist the judge in granting provisional freedom and regime progression.

In 2016, ProPública discovered that this software produced prejudiced results, in the sense that it increased the degree of dangerousness according to the individual's skin color or origin. This study showed that the use of AI can replicate human prejudice. Therefore, regulation or governance needs to work with the AI model from its inception.

The key question to be asked to developers is how the algorithms are interacting with society in general, including issues of structural inequality. Otherwise, it is possible that prejudices may be replicated on a large scale.

In a brief explanation, neural networks have an input layer and an output layer. The intermediate algorithm model is called a black box and the way it decides is not even known by mathematicians. This “hidden” layer brings what the experts call AI opacity.

The dilemma becomes even more complex when we design it to be used in sensitive decisions, such as judicial ones, without following the assumptions of an approach using public interest technology (PIT). The PIT refers to the study and application of technology knowledge to promote the public interest, generate public benefits, and promote the public good. My proposal is that we analyze the structuring of projects in the legal scope from this focus through transdisciplinary and plural teams from the modeling of AI; analyze fundamental rights, with transport and design centered on human rights; inform the citizen when AI is used for any purpose; algorithmic transparency, included within the very notion of dully legal proceeding.

This transparency is not related to knowing the source code, considering that this is obviously a matter of intellectual property, but it means obtaining elements that allow us to understand how the tool takes decisions – how it explains it.

We still need to reflect on reliability for vulnerable people; the social impact of technology and the extent to which systems can deceive, manipulate, and condition human behavior; accountability through constant audits that prevent harm being made to people.

This panorama shows it is urgent to rethink not only the issue of automation, but especially, the issue of transformation through AI, so that new ways of dimensioning conflicts can be created. In my opinion, it is possible to reshape procedural law with the use of technology by creating new modes of execution, new modular cognitions like the very model of Modria and eBay that resolve around 40 million disputes per year.

The perception that artificial intelligence can increase inequalities between habitual and occasional litigants is fundamental and there is no adequate standardization in the world to face this challenge. In Brazil the 21/2020 Bill exists, France has developed legislative projects, as well as other initiatives in California, but which do not focus on the justice system.

As well remembered at the beginning of this event by Professor Carlos Ivan Simonsen Leal, it is not possible to create a standard that exhaust all aspects related to AI. We are facing a field that undergoes many changes and if we standardize it from the traditional conception of law, it will not be possible to solve the problems that will inevitably arise.

Courts need to understand the technology they are using and, in turn, create governance with interaction with appropriate players such as the Academy and the private sector, but always perceiving the dilemmas that exist in the justice system, given we are dealing with fundamental rights.

Thank you very much.

CLOSURE



**June 29
2020**

Luis Felipe Salomão



LUIS FELIPE SALOMÃO

Minister of the Superior Court of Justice,
Professor of Fundação Getulio Vargas
and Coordinator of Center of Innovation,
Administration and Legal Research of FGV

First, I would like to greet Professor Carlos Ivan Simonsen, President of Fundação Getulio Vargas, who took a very interesting approach to the concern with ethics in relation to the use of algorithms and artificial intelligence, also bringing aspects of Game Theory from a historical, legal and philosophical perspective. His contribution guided the debates, and reveals the importance of this meeting, and helps greatly our Center of Innovation, Administration and Legal Research.

Next, the President of the Brazilian Bar Association (OAB), Luciano Bandeira, who brought into light the lawyer's expectation, the sensitivity and anguish that are to come in the legal practice in this moment of intense innovation and career transformation.

The President of the Federal Supreme Court, Minister Dias Toffoli, gave us the honor of following the entire presentation of the research. In his administration, His Excellency has conducted the work of the Judiciary with great serenity, firmness, and security. In his presentation, the Minister told us the history of what the CNJ and himself have experienced regarding artificial intelligence. He also spoke about electronic procedures, virtual plenary, videoconference, addressed the algorithm used for prisoners in carrying out the sentence and mentioned the need for constant improvement and investment in artificial intelligence programs within the scope of Justice.

Minister Humberto Martins presented an international panorama with emphasis on a position in the OECD that Brazil has long pleaded for. He also embarked on ethics in the use of artificial intelligence and spoke about the core of the CNJ and the working group for the implementation of this type of tool in the Judiciary.

The research presented by Professors Renata Braga and Juliana Loss is the result of a great effort of fieldwork. It is an independent survey, carried out outside the Judiciary and contributes with concrete and reliable data for the sharing of experiences of the courts. Along the same lines exposed by Minister Toffoli, the professors stressed that the situation of the Brazilian Judiciary is unique in the world, due to the number of cases and the technological progress already obtained, despite the lack of reporting abroad.

Professor Dierle Nunes presented the central question of the theme, the principle of using algorithms, and went deeper into the ethical aspects involved, showing the scenario of regulation in Brazil.

I feel that we have successfully completed the first stage of the 1st Forum on Law and Technology. I emphasize my joy at the support of Appellate Judge Elton Leme and Sidnei Gonzalez in running the Center of Innovation, Administration and Legal Research, a private initiative, but one that will certainly be able to cooperate a lot for the public management of artificial intelligence programs. There is still much to be done, our work is just beginning. I thank everyone who participated in this journey that is so relevant to the Brazilian Judiciary.

OPENING



July 02
2020

Maria Cristina Peduzzi



MARIA CRISTINA PEDUZZI

President of Superior Labor Court

INTRODUCTION

With each industrial revolution, production models undergo paradigm shifts that change the organization of work, the way of managing activity times, the way of managing workers' skills and the control of production stocks. The Western world has gone through the Taylorism, Fordism, and Toyota Production System paradigms and today contemplates work via virtual platforms that bridge the gap between workers and service providers.

As a result of the paradigm shift in the modes of production, Labor Law must adjust to offer standards compatible with each model and, thus, guarantee rights and duties to the actors and legal security to society. The rules of the beginning of the first Industrial Revolution are no longer able to respond to the new reality that the Technological Revolution 4.0 imposes.

For a better understanding of the changes, it is necessary to define the concept of paradigm.

According to Thomas Kuhn – exponent in the study of scientific development and Harvard professor, paradigm can be understood metaphorically as the lenses used to see the world and understand it.¹

At times when the existing paradigm is no longer able to offer answers to new problems and questions, a crisis arises that demands from science the search for a new paradigm.²

The paradigm shift gives scientists a new look at the world and, consequently, their behavior change.³

1. ARTIFICIAL INTELLIGENCE AND HUMAN LABOR

We are currently experiencing a paradigm shift in several areas of knowledge, science, economics, health, work, and consumption.

The paradigm shift from Revolution 4.0, catalyzed by the Covid-19 pandemic, also changed labor demands.⁴ Health professionals such as physicians, nurses, physiotherapists, nursing technicians, pharmacists, and biologists, among others, proved to be essential to guarantee the life, well-being and health of all. Scientists from the most diverse areas and researchers came to be fundamental for the survival of humanity in the face of an invisible and totally unknown enemy.

A list with the 10 most required professions after Covid was published on the Metr  poles website on 6/30/2020. Leading this list are, health professionals, digital marketing analysts, video editors, art directors and designers, user experience designers, financial analysts, website developers, logistics analysts, distance education analysts, and game developers.

Workers acting in food delivery services and supermarkets also gained prominence, for exercising a recognized essential activity. In a similar way, the professionals who collect urban garbage were essential to guarantee public health during the pandemic.

1 KUHN, Thomas. A estrutura das revolu  es cient  ficas. Tradu  o: Beatriz Viana Boeira e Nelson Boeira. S  o Paulo: Perspectiva, 2007, 9   ed., p. 159.

2 Idem, Ibidem.

3 Idem, p 152.

4 Another research also indicates that the implementation of Revolution 4.0 technologies was accelerated during the pandemic. Cf. BRASIL, GS1, Associa  o Brasileira de Automa  o. Covid-19 acelera ado  o de tecnologia, segundo Nielson. Published on 04/02/2020. Available at: <<https://noticias.gs1br.org/covid-19-acelera-adocao-de-tecnologia-segundo-nielson/>> Accessed on 29/06/2020

A movement to substitute human labor for artificial intelligence, computing, and cybernetics, which had already been observed in the context of Technological Revolution 4.0, gained even more momentum and scope to meet the new sanitary and economic demands of the pandemic.

Dora Kaufman explains how artificial intelligence is inextricably linked to the Technological Revolution or Industry 4.0:

Artificial intelligence is at the heart of Industry 4.0, particularly machine learning (Machine Learning/Deep Learning), which automatically improves systems and increases the accuracy of predictive capacity, in addition to facilitating customization. AI algorithms, from the database, identify trends and simulate scenarios, contributing to supply chain planning, forecasting seasonality, better understanding consumer expectations, among countless other benefits. Adding value to human work, AI is transforming tasks and functions, processes and business models.⁵

It is important to highlight that this transformation in the structure of the labor market and in the tasks traditionally performed by human beings has always been present in history, throughout industrial and technological revolutions. Artificial intelligence gained prominence after World War II, materializing in modern computers.⁶

Today the concept of artificial intelligence goes beyond the machines already consolidated, as the philosopher João Fernandes Teixeira explains:

It is not enough to simply design and create a calculating machine (as we have it and use it every day, carrying it in your pocket) to say that we are doing AI. This machine must imitate our mental activity when we are doing an arithmetic operation.

(...)

We can build programs that mimic our ability to reason, to perceive the world and to identify objects around us, and even to speak and understand our language.⁷

5 KAUFMAN, Dora. Os impactos esperados das mudanças tecnológicas: novas habilidades demandadas dos trabalhadores. In: Trabalho 4.0. Coordenador: José Roberto Afonso. Coleção IDP. Editora: Grupo Almedina, 2020, p. 146.

6 TEIXEIRA, João Fernandes. O que é inteligência artificial. E-Galáxia, 2019. Available on: <https://books.google.com.br/books?hl=pt-BR&lr=&id=oDSZDwAAQBAJ&oi=fnd&pg=PT5&dq=intelig%C3%Aancia+artificial+conceito&ots=5FovGbSqPX&sig=rkdcSHtwXkpPsfRfc_4PUYm8Il#v=onepage&q=intelig%C3%Aancia%20artificial%20conceito&f=false> Accessed in 06/27/2020.

7 Idem, ibidem.

Artificial Intelligence is the technology capable of creating intelligent behavior, which surpasses the whole concept of science created so far.⁸

Regarding typical human qualities inserted in artificial intelligence, Dora Kaufman explains:

Data – the raw material of the 21st century economy – is not objective and is “raw data” at the origin; it is the AI algorithms that transform them into useful information based on predictive models. In general, these models incorporate human biases and the results are a function of several choices by computer scientists, such as, for example, sample selection (an arbitrary cut of the total universe) and subsequent interpretation. Efficient mediation between technology and its users depends, in large part, on agents with human attributes.⁹

User data both characterize the way platforms are “paid” for the service offered, as with free emails, streaming platforms, as well as configuring the information necessary for the same platforms to improve their services and products to capture more and more consumers.¹⁰ In this context, data is collected and organized by artificial intelligence systems so that decisions about production can be made.¹¹

In the same sense, José Roberto Afonso teaches that technology has been gaining more and more space from the most mechanical tasks to the most complex activities that demand greater reasoning and intellectual skills.¹²

The digital transformation positively impacts the economy by increasing productivity and reducing costs. On the other hand, as several studies indicate, it pressures the labor market on variables such as employment and skills. At an unprecedented speed, as a result of recent advances, intelligent machines and algorithms take on everything from repetitive and routine to cognitive tasks.¹³

---

8 Idem, ibidem

9 KAUFMAN, Dora. Os impactos esperados das mudanças tecnológicas: novas habilidades demandadas dos trabalhadores. In: Trabalho 4.0. Coordenador: José Roberto Afonso. Coleção IDP. Editora: Grupo Almedina, 2020, p. 145.

10 Idem, p. 149-150

11 Idem, p. 150

12 AFONSO, José Roberto. Apresentação. In: Trabalho 4.0. Coordenador: José Roberto Afonso. Coleção IDP. Editora: Grupo Almedina, 2020, p. 17.

13 Idem, p. 17-18.

This expansion of artificial intelligence was not restricted to industry, but it has also been gaining ground in other sectors, such as services, agriculture, and financial retail, due to the use of investment software by financial institutions and banks.¹⁴

To facilitate the understanding of what artificial intelligence is and how it stands out from the already consolidated concepts of technological machines, it is necessary to present some examples. Among the most diverse smartphones available on the market, the “iPhone” features an artificial intelligence system called “Siri”, which consists of offering answers and guides requested by voice by the smartphone holder. Siri is defined as a personal digital assistant that processes sounds captured from the surrounding environment and offers answers, guidance, and tips.¹⁵

We also have Alexa, a smart speaker, from whom it is possible to request a song, information about the main news, weather, biographies, turn on the lights, etc.

Another example close to the reality of the Labor Judiciary is the “Bem-Te-Vi” artificial intelligence system, developed by the Information Technology Secretariat and the Technical Support Coordination for Users of the Superior Labor Court, in order to facilitate the management of procedures in the public offices.¹⁶

Launched in October 2018¹⁷, the “Bem-Te-Vi” system allows a virtual sorting of the procedures based on information related to the procedural class, subjects dealt within the records, date of entry into the office, parts and reasons. The artificial intelligence system developed by the TST is also able to make a timely analysis of the appeals, comparing the publication dates of the contested decision and the filing of the appeal, a task previously performed by civil servants with legal training.¹⁸

According to an article published on the TST website, the software “Bem-Te-Vi” is unprecedented in the Labor Court and brings a gain in productivity through assistance in process management:

---

14 Idem, p. 158.

15 BRASIL, Wikipédia. Siri (software). Available on: <[https://pt.wikipedia.org/wiki/Siri_\(software\)#:~:text=Siri%20\(pronuncia%2Dse%20%2F%CB%88,Touch%2C%20Apple%20Watch%20e%20Mac.&text=O%20aplicativo%20%C3%A9%20o%20primeiro,em%20aplica%C3%A7%C3%B5es%20de%20intelig%C3%Aancia%20artificial.](https://pt.wikipedia.org/wiki/Siri_(software)#:~:text=Siri%20(pronuncia%2Dse%20%2F%CB%88,Touch%2C%20Apple%20Watch%20e%20Mac.&text=O%20aplicativo%20%C3%A9%20o%20primeiro,em%20aplica%C3%A7%C3%B5es%20de%20intelig%C3%Aancia%20artificial.) > Accessed on 06/27/2020.

16 BRASIL, Tribunal Superior do Trabalho. Bem-Te-Vi, gestão do acervo processual. Available on: <<http://www.tst.jus.br/web/estatistica/bem-te-vi> > Accessed in 06/27/2020.

17 BRASIL, Tribunal Superior do Trabalho. Inteligência artificial traz melhorias inovadoras para tramitação de processos no TST. Available on: <http://www.tst.jus.br/noticia-destaque-visualizacao/-/asset_publisher/89Dk/content/id/24875517 > Accessed in 06/27/2020.

18 BRASIL, Tribunal Superior do Trabalho. Bem-Te-Vi, Módulo Triagem Virtual. Available on: <<http://www.tst.jus.br/documents/18640430/8a917938-e154-69aa-b873-dfe03c261f06> > Accessed in 06/27/2020.

The new version of the “Bem-te-vi” System was developed by CDS from the application of artificial intelligence concepts, resulting in a product considered unprecedented in the Labor Court. The tool has the functionality of automatically analyzing the timing of processes. Currently, about 3% of all cases that reach the TST per year, amounting to 10,000 lawsuits, are considered to be untimely, that is, they are out of time for the parties to appeal. When the process reaches the office, it requires a global reading by the advisor, which takes a lot of time. Bem-te-vi now has a way of signaling to this server that there is a chance that almost 100% of a given process will be untimely, which saves considerable time in analyzing that process.¹⁹

These two examples of artificial intelligence software demonstrate how tasks performed by human intelligence can be performed by technology. The question is whether all human intellectual capacity can be fully processed by technological machines and tools to the point of dispensing with human action. For João Fernandes Teixeira, this question is still open: “Whether or not human thought can be fully mechanized, as AI theorists intend, it is an open question”.²⁰

Yuval Noah Harari argues that it is more important to value human work than to fight for the maintenance of formal jobs that can change and fall out of favor due to technological revolutions:²¹

19 BRASIL, Tribunal Superior do Trabalho. Sistema Bem-te-vi faz uso de inteligência artificial. Available on: <http://www.tst.jus.br/web/guest/institucional?p_p_id=com_liferay_portal_search_web_portlet_SearchPortlet&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&_com_liferay_portal_search_web_portlet_SearchPortlet_mvcPath=%2Fview_content.jsp&_com_liferay_portal_search_web_portlet_SearchPortlet_redirect=http%3A%2F%2Fwww.tst.jus.br%2Fweb%2Fguest%2Finstitucional%3Fp_p_id%3Dcom_liferay_portal_search_web_portlet_SearchPortlet%26p_p_lifecycle%3D0%26p_p_state%3Dmaximized%26p_p_mode%3Dview%26_com_liferay_portal_search_web_portlet_SearchPortlet_redirect%3Dhttp%253A%252F%252Fwww.tst.jus.br%252Fweb%252Fguest%252Finstitucional%253Fp_p_id%253Dcom_liferay_portal_search_web_portlet_SearchPortlet%2526p_p_lifecycle%253D0%2526p_p_state%253Dnormal%2526p_p_mode%253Dview%26_com_liferay_portal_search_web_portlet_SearchPortlet_mvcPath%3D%252Fsearch.jsp%26_com_liferay_portal_search_web_portlet_SearchPortlet_keywords%3Dbem%2Bte%2Bvi%2B%26_com_liferay_portal_search_web_portlet_SearchPortlet_formDate%3D1593200306878%26_com_liferay_portal_search_web_portlet_SearchPortlet_scope%3Dthis-site&_com_liferay_portal_search_web_portlet_SearchPortlet_assetEntryId=24876758&_com_liferay_portal_search_web_portlet_SearchPortlet_type=content&inheritRedirect=true> Accessed in 06/27/2020.

20 TEIXEIRA, João Fernandes. O que é inteligência artificial. E-Galáxia, 2019. Available on: <https://books.google.com.br/books?hl=pt-BR&lr=&id=oDSZDwAAQBAJ&oi=fnd&pg=PT5&dq=intelig%C3%AAncia+artificial+conceito&ots=5FovGbSqPX&sig=rkdcSHtwXkpPsxfRfc_4PUYm8ll#v=onepage&q=intelig%C3%AAncia%20artificial%20conceito&f=false> Accessed in 06/27/2020.

21 HARARI, Yuval Noah. 21 lições para o século 21. Tradução: Paulo Geiger. São Paulo: Companhia das Letras. 2018. 6ª. Reimpressão, p. 62 e 68.

To deal with the unprecedented technological and economic disruptions of the 21st century, we need to develop new social and economic models as soon as possible. These models should be guided by the principle that it is necessary to protect humans and not jobs. Many jobs are a little rewarding job, not worth saving.²²

In this sense, the finding that the valorization of work is the priority, which can be developed by a modality other than the employment relationship governed by the CLT.

The conception and advancement of Artificial Intelligence naturally generates tensions in the work environment, mainly due to the concern with the loss of jobs. It is not something new and involves the relationship and conflict between man and machine.

In history, we have, as an example, Luddism, which constituted a movement of workers in England that promoted the destruction of machines at the beginning of the Industrial Revolution.

We have been experiencing the 4th Industrial Revolution since approximately 2012, the year in which the term was first used in a strategic project by the Government of Germany that used cutting-edge technology.²³ It uses algorithms, which are a sequence of mathematical equations that offer answers to certain questions presented, such as a cake recipe or the route to reach a path or destination²⁴. It is the choice of the driver who will deliver the food on a delivery platform like iFood, considering the distance from the restaurant in relation to the driver and the customer who will receive the food; cybernetics: the use of information flows to create a system that offers studies that allow control and organization of data for a purpose, metaphorically it is the helmsman of a ship, that is, it is the crew member who conducts navigation, which gives the north to the vessel; example are internet programs that capture information offered by customers on a platform to allow the organization of this data for marketing strategies and customer profiles –;

artificial intelligence: it takes place in machines that have the capacity to think, reason and offer answers to inquiries and questions asked, as already explained.

The professional community currently uses these three tools (algorithms, cybernetics, and artificial intelligence) to guarantee quick and efficient production, development, and consumption.

---

²² Idem, p. 62.

²³ BRASIL, Wikipedia. Indústria 4.0. Available at: <https://pt.wikipedia.org/wiki/Ind%C3%BAstria_4.0>.

²⁴ <https://pt.wikipedia.org/wiki/Algoritmo>

In addition, these technologies have helped reorganize professional activity during the pandemic, by reducing direct contact between humans, since several mediations can be made by technology at a distance.

Even the viability of remote work modalities required by the sanitary measures to combat COVID-19 result from the use of technology.

2. THE PARADIGM SHIFT IN LABOR LAW

The world is experiencing the 4th Industrial Revolution. Since 2008, countries have been facing an economic crisis at national and global levels, unprecedented in the way it presents itself in the most diverse areas of the productive sector. The pandemic worsened the situation and reproduced the crisis for other sectors.

As explained, it is necessary to seek new rules for the new paradigm that appears. In this sense, Thomas Kuhn states that “the meaning of crises is precisely the fact that they indicate that the time has come for renewing the instruments”.²⁵

The paradigm shift, including the one within the scope of law, is always a break with the previous model and, therefore, presents difficulties and resistance. However, legislative changes are necessary to guarantee the recovery of the labor market and the promotion of free enterprise.

According to the ILO research department, when studying 111 countries between 2008 and 2014, the two main factors that led developing countries and developed countries to approve labor reforms were the economic crisis and high levels of unemployment.²⁶

In a society with a complex economy, it is essential that the State guarantees legal security, which is also effective due to the predictability of the institutions' performance. Laws 13.429/17 and 13.467/17 were enacted in order to standardize modes of production already established in the world of work and which lacked specific regulations in the Brazilian legal system.

25 KUHN, Thomas. A estrutura das revoluções científicas. Tradução: Beatriz Viana Boeira e Nelson Boeira. São Paulo: Perspectiva, 2007, 9ª ed., p. 105.

26 ADASCALITEI, Dragos. MORANO, Clemente Pignatti. Labour Market reforms since the crisis: drivers and consequences. International Labor Office, Research department, Working Paper n° 5, October 2015, p. 13.

The main focus of Brazilian labor reform was to relax rules that regulate specific points of the employment contract, allowing collective bargaining for various labor rights.²⁷

In addition to the 2017 Labor Reform, it became an urgent measure to respond to the economic crisis, deepened in 2020 by the pandemic of COVID-19, when trade restrictions led to numerous layoffs across the country.

In taking difficult decisions today to guarantee the future tomorrow, the federal government issued Provisional Measures 927 and 936 with the aim of more immediately and urgently regulating labor relations in the new context of the COVID-19 pandemic.

To support informal and self-employed workers, the federal government signed Law No. 13,982 on April 2, 2020, which guarantees emergency assistance to workers in the amount of R \$ 600.00 (six hundred reais) and regulates the requirements for their concession.

CONCLUSION

Technology renews the forms and ways in which work is carried out, partly replacing human work, but it also creates new opportunities for human action in a process of renewing what is meant by work. Several tasks that were not even considered in the society's imagination few decades ago have become profitable professions and highly rated in the labor market.

We face the challenge of producing labor standards capable of solving the new demands arising from the new forms of production and work organization, ensuring dignity for those who work, the necessary incentive for the private sector to innovate and generate wealth and legal security so that society progresses and grows economically.

---

27 BRASIL, FECOMÉRCIO/SP. Reformas trabalhistas de países da Europa são diferentes da que está em discussão no Brasil, afirma José Pastore. Available at: < <https://www.fecomercio.com.br/noticia/reformas-trabalhistas-de-paises-da-europa-sao-diferentes-da-que-esta-em-discussao-no-brasil-afirma-jose-pastore> > Accessed in 07/05/2019.

REFERENCES

ADASCALITEI, Dragos. MORANO, Clemente Pignatti. **Labour Market reforms since the crisis: drivers and consequences**. International Labor Office, Research department, Working Paper n. 5, Oct. 2015.

AFONSO, José Roberto. Apresentação. In: **Trabalho 4.0**. Coord. José Roberto Afonso. Coleção IDP. Editora: Grupo Almedina, 2020.

BRASIL, FECOMERCIO. Como achatar a curva do desemprego, por José Pastore. Disponível em: <<https://www.fecomercio.com.br/noticia/como-achatar-a-curva-do-desemprego-por-jose-pastore>>. Acesso em: 26 jun. 2020.

BRASIL, FECOMÉRCIO/SP. Reformas trabalhistas de países da Europa são diferentes da que está em discussão no Brasil, afirma José Pastore. Disponível em: <<https://www.fecomercio.com.br/noticia/reformas-trabalhistas-de-paises-da-europa-sao-diferentes-da-que-esta-em-discussao-no-brasil-afirma-jose-pastore>>. Acesso em: 05 jul. 2019.

BRASIL, Folha de São Paulo. Coronavírus não vai mudar a crença de que é possível vencer a morte, diz Harari. Disponível em: <<https://www1.folha.uol.com.br/ilustrissima/2020/05/coronavirus-nao-vai-mudar-a-crenca-de-que-e-possivel-vencer-a-morte-diz-harari.shtml>>. Acesso em: 26 jun. 2020.

BRASIL, GS1, Associação Brasileira de Automação. Covid-19 acelera adoção de tecnologia, segundo Nielson. Publicada em 02/04/2020. Disponível em: <<https://noticias.gs1br.org/covid-19-acelera-adocao-de-tecnologia-segundo-nielsen/>>. Acesso em: 29 jun. 2020.

BRASIL, Instituto Butantan. Confira imagens do coronavírus ampliadas. Disponível em: <<http://coronavirus.butantan.gov.br/veja-o-coronavirus>>. Acesso em: 26 out. 2020.

BRASIL, Tribunal Superior do Trabalho. Bem-Te-Vi, gestão do acervo processual. Disponível em: <<http://www.tst.jus.br/web/estatistica/bem-te-vi>>. Acesso em: 27 jun. 2020.

BRASIL, Tribunal Superior do Trabalho. Inteligência artificial traz melhorias inovadoras para tramitação de processos no TST. Disponível em: <http://www.tst.jus.br/noticia-destaque-visualizacao/-/asset_publisher/89Dk/content/id/24875517>. Acesso em: 27 jun. 2020.

BRASIL, Tribunal Superior do Trabalho. Bem-Te-Vi, Módulo Triagem Virtual. Disponível em: <<http://www.tst.jus.br/documents/18640430/8a917938-e154-69aa-b873-dfe03c261f06>>. Acesso em: 27 jun. 2020.

BRASIL, Tribunal Superior do Trabalho. Sistema Bem-te-vi faz uso de inteligência artificial. Disponível em: <http://www.tst.jus.br/noticias-fala-setin/-/asset_publisher/ezbATd610oL7/content/id/24876758>. Acesso em: 27 jun. 2020.

BRASIL, Wikipédia. Siri (software). Disponível em: <[https://pt.wikipedia.org/wiki/Siri_\(software\)#:~:text=Siri%20\(pronuncia%2Dse%20%2F%CB%88,Touch%2C%20Apple%20Watch%20e%20Mac.&text=O%20aplicativo%20%C3%A9%20o%20primeiro,em%20aplica%C3%A7%C3%B5es%20de%20intelig%C3%AAncia%20artificial](https://pt.wikipedia.org/wiki/Siri_(software)#:~:text=Siri%20(pronuncia%2Dse%20%2F%CB%88,Touch%2C%20Apple%20Watch%20e%20Mac.&text=O%20aplicativo%20%C3%A9%20o%20primeiro,em%20aplica%C3%A7%C3%B5es%20de%20intelig%C3%AAncia%20artificial.)>. Acesso em: 27 jun. 2020.

CLAUWAWERT, S. et al. The crisis and national labour law reforms: a mapping exercise. Country report: France. Última atualização: out. 2016. Disponível em: <<https://www.etui.org/Publications2/Working-Papers/The-crisis-and-national-labour-law-reforms-a-mapping-exercise>>. Acesso em: 14 maio 2019.

HARARI, Yuval Noah. 21 lições para o século 21. Trad. Paulo Geiger. São Paulo: Companhia das Letras. 2018. 6. reimpressão.

KAUFMAN, Dora. Os impactos esperados das mudanças tecnológicas: novas habilidades demandadas dos trabalhadores. In: **Trabalho 4.0**. Coord. José Roberto Afonso. Coleção IDP. Editora: Grupo Almedina, 2020.

KUHN, Thomas. **A estrutura das revoluções científicas**. Trad. Beatriz Viana Boeira e Nelson Boeira. São Paulo: Perspectiva, 2007. 9. ed.

SOUZA, Raíssa Fabris de. Uberização: da Revolução no Mundo Capitalista à Evolução das Novas Formas de Trabalho Humano. Publicado em: 01 out. 2019. Disponível em:<<https://ambitojuridico.com.br/cadernos/direito-do-trabalho/uberizacao-da-revolucao-no-mundo-capitalista-a-evolucao-das-novas-formas-de-trabalho-humano/>>. Acesso em: 01 jul. 2020.

TEIXEIRA, João Fernandes. **O que é inteligência artificial**. E-Galáxia, 2019. Disponível em: <https://books.google.com.br/books?hl=pt-BR&lr=&id=oDSZDwAAQBAJ&oi=fnd&pg=PT5&dq=intelig%C3%AAncia+artificial+conceito&ots=5FovGbSqPX&sig=rkdcSHtwXkpPsxIRFc_4PUYm8ll#v=onepage&q=intelig%C3%AAncia%20artificial%20conceito&f=false>. Acesso em: 26 out. 2020.

PANEL 4



LIMITS AND POSSIBILITIES FOR THE
USE OF ARTIFICIAL INTELLIGENCE
IN THE JUDICIAL SYSTEM

André Carlos Ponce de
Leon F. de Carvalho



ANDRÉ CARLOS PONCE DE LEON F. DE CARVALHO

Vice-Director of the Institute of
Mathematical and Computing Sciences
of the University of São Paulo

First, I would like to thank FGV for the event. I will speak in a more academic way as a researcher in the field of artificial intelligence. I will start by contextualizing what artificial intelligence (AI) would be: it is an intelligence external to a living being, which is also called machine intelligence. The idea is not to replace human beings, but to support them.

This term “artificial intelligence” was proposed at a 1956 conference in the United States by John McCarthy with the perspective that science could generate or make machines intelligent. But how to define whether a machine is intelligent or not? And what is the capacity of a machine to think?

For this, the “Turing test” was proposed, which is studied by the academy until today. Artificial intelligence has two aspects: one, currently more investigated, which is called narrow artificial intelligence, specialized in specific tasks such as making a medical diagnosis or participating in a game of chess. And in the future, it is expected that there will be widespread artificial intelligence, that is, that it can perform at the same time several functions with similar performance to that of a human being. This is expected to happen by 2050.

I would like to open a parenthesis to tell the story of a British mathematician who worked with Turing on breaking German code in World War II. They often talked about the future of machine intelligence and were convinced that, in the future, machines would be smarter than humans.

In 1965, the same researcher tried to estimate the economic value of this machine, which would be ultra-smart. His estimate was made in relation to the contribution of the economist Keynes to the British economy, being it a very high figure. The ability of artificial intelligence is affected by access to data. Today, we have more and more data coming from an increasing number of sources and smartphones themselves are largely responsible for this increase in data.

We are also facing an information overload. Currently, the human being is exposed to a much greater amount of information than they can handle. This makes it necessary to have technological support to assist them in this processing.

The analysis of these data can bring economic, social, and political benefits, but there is a lack of specialists to analyze this data and the cost is quite high. Hence, the growing demand for increasingly sophisticated tools. The biggest advances of the last decade are related to the data science field, particularly machine learning.

When using a machine learning technique, the computer learns to perform the task by looking at data sets. This segment is so important that the industrial revolution is said to have automated manual labor; the knowledge revolution has automated mental work; and the machine learning revolution will automate automation itself.

Artificial intelligence and machine learning are in various contexts that surround us: in bioinformatics to design new vaccines; to improve medical diagnosis; to create games; to stimulate social networks. For instance, behind recommendations, as you can see, Netflix and Spotify point towards films based on the history of films already watched or a song based on previously accessed playlists.

Artificial intelligence is revolutionizing areas such as engineering; energy; telecommunication; biology; medicine; social sciences and the Judiciary, where the possibilities are immense. In theory, any activity that is repetitive and in which it is possible to identify patterns can, in principle, be performed with the support of AI.

In the Judiciary, simple activities such as classifying cases and grouping similar cases can be carried out; even more complex ones as the prediction of the Court in which a suit is more likely to be successful.

The use of AI has several benefits, such as the reduction of subjectivities; streamlining procedures; decreased costs; and freeing people for activities that are less mechanical and more challenging.

As early as 1965, it was speculated that an ultra-intelligent machine could design even more powerful machines and human intelligence would be left behind. This could be the last invention of the human being if the machine is docile enough to be kept under control and that we can act to mitigate any harm that could result from this superintelligence. This is associated with the phenomenon of uniqueness, which concerns these radical changes caused by new technologies in society.

There is a branch of research in machine learning known as automated machine learning. One of the beneficial aspects is that it can democratize this technology for a much wider range of individuals and small businesses. It is investigated by several companies such as Google, Amazon, Apple, and Microsoft.

A dilemma arises in the relationship between autonomy and security. Machines do not have the limitations of biochemical processes characteristic of humans and animals. It is also up to the regulation to establish a limit to the evolution of these machines, so that the human being will always have the last word.

They should continue as supporting tools for human beings to make their decision. This concern with automation is not new. In ancient Greece, a dialogue written by Plato, described the concern about how writing would take the place of human speech and how reading was dangerous because it would replace true knowledge with mere data.

Of course, it is necessary to be always attentive to the social issue, which is valid for any technological advance. I believe that technology must advance to improve people's quality of life. This is the aim of science and research. Therefore, it seems important for us to create laws that regulate the use of technology and inhibit its harmful use.

There is a movement in the academy and in some companies known as responsible artificial intelligence, which is transparent, reproducible and respects privacy. Models must also be fair and make decisions in a transparent manner.

It is also important that the tool developer can be held responsible, that is, will be liable for the consequences of the generated models. Artificial intelligence can be generated from "black box" models in which there is no idea how the result was achieved, even "white box" models in which it is possible to understand the machine's decision-making process.

This right to an explanation is clear in the General Data Protection Law, inspired by the GDPR. European law stipulates a maximum period of 72 hours for notifying the competent authority of data leakage. This provision is not clear in our law.

GDPR also defines the need for the data subject's consent to capture data; clearly defines when the person should be identified; and what the personal data consists of.

Finally, I would like to talk about the regulation of artificial intelligence. Excessive regulation can limit innovation in the area and reduce potential benefits for society. It is necessary to find a middle ground in which research is not regulated, but the applications that use artificial intelligence, so as not to bring harm onto individuals.

In 2019, a working group was created by UNESCO to outline the Brazilian strategy around artificial intelligence. In the National Congress, there is a bill in the Senate and two PLs in the Chamber that seek to regulate AI in Brazil.

I am member of the Brazilian Computer Society, which is also genuinely concerned with this fair and correct use of AI in the lives of the population. I thank FGV once again for this opportunity.

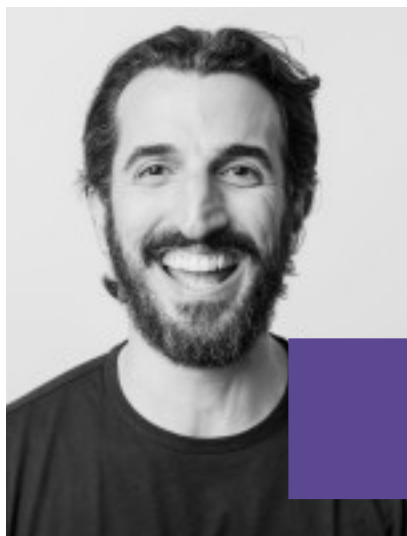
PANEL 5



PRACTICAL APPROACH TO
ARTIFICIAL INTELLIGENCE APPLIED
TO THE JUDICIARY CONTEXT

José Leovigildo Coelho

Marcus Lívio Gomes



JOSÉ LEOVIGILDO COELHO

Researcher at Center of Innovation,
Administration and Legal Research
of Fundação Getúlio Vargas and IIT
coordinator of FGV Conhecimento

Good morning everyone. First, I would like to thank Minister Luís Felipe Salomão for the opportunity and brilliant coordination of the Center of Innovation, Administration and Legal Research (CIAPJ/FGV), which I am honored to support. I would like to greet Minister Maria Cristina and my other colleagues. I would like to congratulate the two brilliant previous lecturers that brought complementary and rich views on artificial intelligence. I will contribute with a more practical and technical vision of how this AI application can be developed with all the challenges that we have in Brazil and in the world regarding data.

As commented by Professor André, artificial intelligence is not something new. This huge boom, which has happened in recent years, is due to three main factors: explosion of hardware capacity; increment of the algorithms; and data volume growth.

The algorithms, the expressive data volume and the computational capacity cause the unfolding of artificial intelligence. Then, a company, a court or a large institution starts from a transactional system or another installed system (in the case of the courts, the PJe, for example) and from that moment on, descriptive data are generated, that is, the monitoring reports processes, agendas, among others. Based on this information, it is possible to start developing something predictive and even prescriptive. Without these more developed predecessor layers there is no point in discussing more sophisticated issues.

From 2000 to 2018, the world took 1.2 years to double its computational capacity. Until recently, we were used to minimalist computing power with increasingly smaller chips. Today, we are discussing the physical limitation of computational capacity and a possible return to large computers to process social intelligence and more sophisticated models. The expectation, therefore, is for a disruption of computing power in the coming years.

Currently, the volume of data on the internet is growing exponentially compared to the volume of data already produced. The projection of some agencies is that 40 to 45 zettabytes are produced per year, which is equivalent to one trillion gigabytes per year. This is the main topic of discussion that I would like to work on today.

The algorithm has also evolved over time. In the 1950s, there was basically tabular data, such as process movement data. Today, with more sophisticated algorithms, it is possible to process even images.

Sequential data is the reality of Brazilian justice, that is, documents written with natural language in which each person has their own way of writing; accented audios recordings; the same fact communicated in different ways. All of this brings much greater complexity.

Natural language processing (NLP) techniques carry out the processing of natural language. They are present, for example, in Word or Gmail softwares, when making suggestions for continuity of the text. It is much more complex than a prediction model based on tabular data.

The most recent developments are deep learning techniques, a variation of machine learning techniques applied to images. Those are equivalent to the various computational techniques that are used at the same time in different types of data. It is important that the managers and leaders of the organizations have knowledge about these techniques that are being used, in view of what Professor André previously commented in relation to prejudices, black box and white box.

It is important to understand that a natural language algorithm has more chances of error, injustice, or prejudice than tabular data. And the Brazilian judicial context is particularly complex: more than eleven different systems; stock of more than 90 million shares; and more than 200 lawtechs and legaltechs operating in the market.

There is a great computational challenge because they are distributed bases with unstructured data. Brazil has a great opportunity to develop models and automation that are extremely beneficial to society.

Brazil is well positioned in terms of scientific production of artificial intelligence in the world. Data from 2010 to 2018 show that our country is between Canada and South Korea, ahead of Iran, Poland, Russia, among others. When we look inside the country, we have large universities and institutions producing academic and scientific material on the subject.

As the CIAPJ/FGV research shows, in recent years, there has been a consistent and systematic increase in initiatives for the use of artificial intelligence in the Judiciary and the trend is for an even more growth in the coming years.

As a challenge with more than 11 different systems, the bases are filled in different ways so it would be difficult to do a national pattern analysis and establish some type of behavior within each of the states.

So, the point of view of discussing artificial intelligence in the Judiciary needs to start with the data. When we, at Fundação Getulio Vargas, are involved with some type of project in the Judiciary, we know the burdens of extracting some important or relevant information in this context.

The most correct way to understand data belonging to the Judiciary is from its origin. For example, an automated reading of the application, which is subdivided into a few points. Here it is possible to make a correlation with jurisprudence and with Law sections. Another case is the automation of written extracts, but always with the review of a human being at the end.

I also present some cases that are common in our daily lives and that are techniques already used in transcribing hearings with voice recognition. With some computational techniques like the spectrogram, it is possible to transform an audio into an image and from there carry out the translation into words.

Another example is the analysis of images. With the pandemic, the number of videoconferences and video audiences increased significantly. Today, algorithms can detect emotions in real time; in addition to functioning as a lie detector; among other features that are already available on the market.

I would like to finish with a provocation. There are public sites that create people or faces that do not exist in reverse. It is therefore possible to create an Avatar to participate in a conference call or to attach that image to a document.

In China, police officers already have a facial recognition camera on their glasses and based on face analysis data, they detect possible suspects whose characteristics are similar with the facial pattern of criminals in the country.

All in all, I would like to conclude with a summary of what was presented by professors Juliana Loss and Renata Braga in the last webinar: the current initiatives within the Judiciary involve facial recognition; draft suggestion; language recognition; classification of petitions; automated distribution; among many others with different technology approaches.

Thank you.



MARCUS LÍVIO GOMES

Federal Judge of the Federal
Regional Court of the 2nd region

INTRODUCTION

It is extremely interesting to note that our legal vocabulary has been invaded by technological terms. We became specialists in artificial intelligence, algorithms, prediction, that is, the world is in full evolution and we are speeding up to adapt. This really demonstrates the complexity of the challenge that Brazilian society and, particularly the Judiciary Power is facing.

According to information on the website of the National Council of Justice (CNJ)¹, it can be noted that the Brazilian Judiciary is investing in the use of artificial intelligence and several Regional Courts have been receiving awards in this regard.

Abroad, in addition to the use of AI by some courts, research has been done on its positive and negative points, as well as on the principles that should regulate the modernization of the activities of the Judiciary.

The purpose of this paper is to present an overview of the use of Artificial Intelligence (AI) by the Judiciary, practical experiences, and the recent Resolution 332 of the CNJ.

---

¹ International experiences and concerns

1. INTERNATIONAL EXPERIENCES AND CONCERNS

In May 2019, the OECD published the “Principles of Artificial Intelligence”², the first international standards agreed by governments for responsible management of reliable artificial intelligence. The principles include concrete recommendations for public policies and strategies that will be able to withstand time considering the rapid evolution of the subject. The principles listed below have been approved by the 36 OECD countries in addition to Brazil, Argentina, Colombia, Costa Rica, Peru, and Romania³:

1. AI must benefit people and the planet, driving inclusive growth, sustainable development, and well-being.
2. AI systems must be designed in a manner that respects the rule of law, human rights, democratic values, and diversity, and must include appropriate safeguards – for example, enabling human intervention whenever necessary – to guarantee a fair Society.
3. There must be transparency and accountability around AI systems to ensure that people understand the results based on AI and can challenge them.
4. AI systems must operate in a robust, safe, and protected manner throughout their life cycles, and potential risks must be assessed and managed on an ongoing basis.
5. Organizations and individuals who develop, deploy, or operate AI systems must be held responsible for their smooth functioning, in accordance with the above principles.

A policy observatory was also launched to ensure the beneficial use of artificial intelligence.⁴ UNESCO, on its part, edited a draft document with recommendations for ethics in the use of AI which awaits its final version after public comments.⁵

² Ob Cit.

³ OECD, Forty-two countries adopt new OECD Principles on Artificial Intelligence, available at <https://www.oecd.org/going-digital/forty-two-countries-adopt-new-oecd-principles-on-artificial-intelligence.htm>, accessed on 03/05/2020

⁴ OECD AI Policy Observatory, available at <https://oecd.ai/>

⁵ UNESCO Ad Hoc Expert Group (AHEG) for the preparation of a draft text of a recommendation on the ethics of artificial intelligence, available at <https://unesdoc.unesco.org/ark:/48223/pf0000373434> accessed on 01/09/2020

Specifically, within the scope of the Judiciary, researcher Nancy Siboe pointed out in a recent study experiences and concerns that must be considered when using AI by the United States Judiciary (USA).⁶

According to the researcher, the main problem with the use of AI is that the technology is as good as the programming that contains it. According to her, the algorithms used in the USA, for example, have faced criticism for apparently being biased against blacks. She also indicates that other forms of technology were used to keep the justice system in the United States functioning during the pandemic. The California Supreme Court replaced face-to-face oral arguments with remote defenses. In New York, the justice system has filed complaints by video and the state is considering the release of older prisoners. In the United Kingdom, the Ministry of Justice issued guidelines limiting face-to-face hearings to the most urgent cases and encouraged the use of technology.

The researcher also draws attention to the fact that the Judiciary in some developing countries are struggling to deal with the pandemic. She says that in Kenya, there is a risk that the pandemic could lead to the paralysis of the criminal justice system. She points out that, unfortunately, the resources needed to set up AI and other technologies to support the justice system may not be immediately available to some developing countries.

The UK Supreme Court Minister Lord Sales concluded a speech in November 2019⁷ stating that:

(...)

Algorithms and AI present great opportunities to improve human condition. They also represent serious threats that exist in relation to the two divergent futures that the digital world seems to offer: technical efficiency and private market power for Silicon Valley, on the one hand, and more authoritarian national control, as exemplified by China, on the other.

The digitization of life is overloading the borders of nation-states and conventional legal categories, through the volume of information that is collected and distributed and the speed and impersonality of decision-making it promotes.

---

6 Nancy Namisi Siboe, "Use of Artificial Intelligence by the Judiciary in the face of COVID-19", (OxHRH Blog, April 2020), <<http://ohrh.law.ox.ac.uk/use-of-artificial-intelligence-by-the-judiciary-in-the-face-of-covid-19/>>, accessed on 31/08/2020.

7 Algorithms, Artificial Intelligence and the Law The Sir Henry Brooke Lecture for BAILII Freshfields Bruckhaus Deringer, London Lord Sales, Justice of the UK Supreme Court 12 November 2019. Available at <https://www.supremecourt.uk/docs/speech-191112.pdf> accessed on 31/08/2020. Author's free translation.

It feels like a flood in which the flow of water moves around obstacles and makes them meaningless. Information arrives in streams that cannot be digested by humans and decisions flow at a rate that the court process cannot be easily divided for individual legal analysis.

Law needs to find adequate concepts and practical ways of structuring this world, to reaffirm human agency at individual level and at collective democratic level. One needs to find points in the stream where one can intervene and ways in which the general flow can be controlled, even if not in the smallest details.

The law is a vehicle for safeguarding human values. The law should provide structures for algorithms and AI to be used to enhance capabilities, agencies, and human dignity, not to remove them. It must impose its order on the digital world and resist its reduction to the status of irrelevant. (...)

The European Commission for Efficiency in Justice⁸ indicates five principles that should be followed in the use of AI by the Judiciary. They are:

1. Principle of respect for fundamental rights: ensure that the design and implementation of artificial intelligence tools and services are compatible with fundamental rights.
2. Principle of non-discrimination: Specifically prevent the development or intensification of any discrimination between individuals or groups of individuals.
3. Principle of quality and safety: As far as the processing of legal proceedings, decisions, and data are concerned, one must use certified sources and intangible data with models designed in a multidisciplinary way, in a technological and environmentally safe way
4. Principle of transparency, impartiality, and fairness: proceed with data processing with accessible and understandable methods and authorize external audits
5. "Under user control" principle: Prevent a prescriptive approach and ensure that users have the necessary information and control over their choices.

⁸ EUROPEAN COMMISSION FOR THE EFFICIENCY OF JUSTICE (CEPEJ) European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment. Available at: <https://www.europarl.europa.eu/cmsdata/196205/COUNCIL%20OF%20EUROPE%20-%20European%20Ethical%20Charter%20on%20the%20use%20of%20AI%20in%20judicial%20systems.pdf> accessed on 31/08/2020. Author's free translation.

Below, we will present some impressions about the use of AI in the Judicial Article of Rio de Janeiro and, later, the CNJ Resolution that regulated the matter within the Judiciary Branch.

2. IMPRESSIONS ON THE PRACTICAL USE OF ARTIFICIAL INTELLIGENCE BY THE MONOCRATIC COURT OF THE 12TH FEDERAL COURT OF THE JUDICIAL ARTICLE OF RIO DE JANEIRO

In this topic, we will present the impressions obtained on a daily basis by the 12th Federal Court of the Judicial Article of Rio de Janeiro, in the 2nd Region's Federal Regional Court on how technological innovations are impacting the jurisdictional provision at the base.

The publication of the 2016 World Economic Forum (very updated)⁹ brings together the ethical issues related to artificial intelligence that will have the greatest impact in terms of regulation and contestation by civil society due to the need for transparency in the performance of the Judiciary.

The first point worth mentioning is that the 12th Federal Court, like all other judgments of the Brazilian Judiciary, is undertaking the automation of some activities. As a result, the process flow is moving much faster, which, consequently, also makes it possible to assign servers to other activities.

In view of this situation, a concern arises in relation to unemployment and the way this automation process will impact the judiciary's employees. Today, a mass of administrative or bureaucratic court activities consumes a lot of human and financial resources. AI can promote agility in terms of displacing the workforce and the budget for core activities, which would be very positive. On the other hand, very soon we will have lawyers specializing in prediction; others in data analysis coming from the Judiciary; and we will probably have a reinvention of professional activities related to law.

Another interesting point in this document is about the distribution of wealth generated by machines, or how it will be distributed in the Brazilian Federation and to the Judiciary, which consumes 2% of the national GDP (an unprecedented value in the world). In this sense, how can the judicial administration allocate resources and outline governance

---

⁹ World Economic Forum. Top 9 Ethical Issues in Artificial Intelligence. Available at <https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/> accessed on 31/08/2020.

strategies so that all agencies can achieve the benefits of using artificial intelligence, such as which software will be developed; which will be made available and nationalized; and how there will be the coupling of these artificial intelligence software that will cooperate and boost the performance of the magistrate in conducting their work.

All of these are part of a national governance strategy and are much relevant topics in terms of predicting the future of the Judiciary's activity, spending and investments of public resources.

An important issue is how the machines affect the behavior and interaction of the operators of the Judiciary with those in jurisdiction. In Covid-19 times this was even more latent. Videoconferencing platforms have already allowed differentiated interaction and many magistrates are holding public hearings through them. A curiosity is the regulation of remote examination¹⁰. We can think of an AI system to analyze expert reports for a given period and analyze a convergence or trend in granting or not of social security benefits. That is, the AI will work alongside the Judiciary in a much more integrated way. The new possibilities of interaction with the prison population are another example, by allowing the holding of a custody hearing without the prisoner being initially taken to the judge; remote hearing for social assistance; and even videoconferencing visits from the prisoner's relatives.

Another important theme is that of the General Data Protection Law¹¹: how we will process data and how we are going to identify legal errors committed by the use of software that speed up the processing of information.

A major challenge is the elimination of intelligence bias and how trends will be identified, controlled and audited. Information security has gained a new scale and has created the need to shield the Judiciary from attacks by hackers and law firms that wish to mine this data for the purpose of predicting court decisions.

Some courts already have services available in clouds, which leads us to the following question: use a public cloud from a public company or use a private cloud and how we will be prepared to make this migration. All these aspects are extremely relevant and touch on judicial governance on the subject of IT. In Brazil, the elaboration of this policy is hampered by the large number of courts: 96 across the country with vastly different sizes.

10 Resolution CNJ N° 317 from 04/30/2020, on the conducting of forensics in electronic or virtual media in actions that discuss disability benefits or assistance, while the effects of the crisis caused by the new Coronavirus pandemic last, and other measures.

11 Recommendation CNJ N° 73/2020, with guidance for adapting the organs of Judiciary to the General Data Protection Law (LGPD - Law 13.709/18).

How to keep track of such a complex intelligence system? In terms of the general data protection law and the ethics of artificial intelligence, this topic should be stressed. The artificial intelligence systems of the Judiciary must be auditable, with regular accountability. It is also important to know how the source code works and keep it confidential.

Finally, a question related to the law of robots: is it possible to establish some type of civil liability for having been biased?

Brazil has a strong ethics policy in the Judiciary. Thus, a question that may arise from legal professionals is about what governance requirements in the AI system are being or will be used and about the data processing of the Judiciary, as well as the access control to this information. Additional points of concern are the instability, lack of uniformity, integrity, accountability, and transparency of artificial intelligence systems.

3. CNJ RESOLUTION 332/2020

Within the CNJ, the AI theme was recently regulated through the commendable Resolution 332, of August 21, 2020¹² which “provides for ethics, transparency and governance in the production and use of AI in the Judiciary and sets forth other measures”.

It is worth highlighting the initial part of the Resolution that makes its objectives clear and the valuable contributions that AI can make to the Judiciary:

THE PRESIDENT OF THE NATIONAL COUNCIL OF JUSTICE, in the use of his legal and regimental attributions.

CONSIDERING that Artificial Intelligence, when applied to the Judiciary, can contribute to the agility and consistency of the decision-making process.

CONSIDERING that, in the development and implementation of Artificial Intelligence, Courts must observe their compatibility with Fundamental Rights.

CONSIDERING that Artificial Intelligence applied in decision-making processes must meet ethical criteria of transparency, predictability, possibility of auditing and guarantee of impartiality and substantial justice.

CONSIDERING that Judicial decisions supported by Artificial Intelligence must preserve equality, non-discrimination, plurality, solidarity and fair judgment, with the means available to eliminate or minimize oppression, the marginalization of human beings and the resulting errors of judgment of prejudices.

---

¹² Approved by CNJ in its 71st Virtual Session and published in DJe / CNJ, nº 274, of 25/08/2020, p. 4-8.

CONSIDERING that the data used in the machine learning process must come from safe sources, preferably governmental, which can be tracked and audited.

CONSIDERING that, in its treatment process, the data used must be effectively protected against risks of destruction, modification, loss, access and unauthorized transmissions.

CONSIDERING that the use of Artificial Intelligence must respect the privacy of users, leaving them with science and control over the use of personal data.

CONSIDERING that the data collected by Artificial Intelligence must be used responsibly for user protection.

CONSIDERING that the use of Artificial Intelligence must develop with a view to promoting equality, freedom and justice, as well as to guarantee and promote human dignity.

CONSIDERING the content of the European Charter of Ethics on the Use of Artificial Intelligence in Judicial Systems and their environments.

CONSIDERING the absence, in Brazil, of specific rules regarding governance and ethical parameters for the development and use of Artificial Intelligence.

CONSIDERING the numerous initiatives involving Artificial Intelligence within the Judiciary and the need to observe parameters for its governance and ethical development and use.

CONSIDERING the competence of the National Council of Justice to ensure compliance with the principles of public administration within the scope of the Judiciary, with the exception of the Federal Supreme Court, according to art. 103-B, § 4, II, of the Constitution of the Federative Republic of Brazil;

CONSIDERING the decision rendered by the Plenary of the National Council of Justice in the judgment of the Normative Act Procedure No. 0005432-29.2020.2.00.0000, at the 71st Virtual Session, held on August 14, 2020.

RESOLVES: (...)

According to CNJ note¹³:

Judicial decisions supported by AI must preserve equality, non-discrimination, plurality, solidarity, and fair judgment, eliminating or minimizing oppression, human marginalization and errors of judgment resulting from prejudice. The CNJ also establishes that the knowledge associated with Artificial Intelligence must be

13 OTONI, Luciana, Agência CNJ de Notícias, Judiciário quer uso de IA com ética e transparência, 31/08/2020 available at <https://www.cnj.jus.br/judiciario-quer-uso-de-ia-com-etica-e-transparencia/> accessed on 01/09/2020

available to the Justice to promote and deepen the understanding between the law and human action and between freedom and judicial institutions.

According to the resolution, the data used in the machine learning process must come from safe sources, preferably governmental, which can be tracked and audited. And, in its processing process, data must be effectively protected against risks of destruction, modification and unauthorized transmissions.

(...)

The use of AI models should seek to ensure legal certainty. And that, when development requires, the samples must be representative and observe the necessary precautions regarding sensitive personal data and the secrecy of Justice. The criteria of the AI models must be approved to identify whether prejudices or generalizations influenced their development. Technological systems using AI models as an auxiliary tool for the elaboration of judicial decisions should contain an explanation of the steps that led to the result.

(...)

The Resolution states that the use of AI models in criminal matters should not be encouraged. This, however, does not apply when it comes to the use of these solutions for automation and subsidy for the calculation of penalties, prescription, recidivism verification, mapping, classifications, and sorting of records for the purposes of collection management.

The Council also establishes that the models intended to verify criminal recidivism should not indicate a conclusion more damaging to the defendant than that which the magistrate would reach without his use.

From simply reading the “recitals” of the resolution and the note on the agency’s website, it is possible to notice how the Brazilian Judiciary is advanced with regard to the implementation of AI and the application of the principles indicated by the European Commission for Efficiency in Justice for its application. Below, we will present the provisions of the Resolution in more detail.

Articles 1 and 2 of the resolution point to the availability of AI¹⁴ for Justice “in the sense of promoting and deepening a greater understanding between law and human action,

---

14 Artificial Intelligence Model defined by Article 3 of the Resolution as being the set of computational data and algorithms, conceived from mathematical models, whose objective is to offer intelligent results, associated or comparable to certain aspects of thought, knowledge or human activity;

between freedom and judicial institutions” as well as its use “within the scope of the judiciary, aims to promote the well-being of the jurisdiction and the equitable provision of jurisdiction, as well as discover methods and practices that enable the achievement of these objectives”.

Articles 4, 5 and 6 show concern with respect for fundamental rights, guarantee of legal security, and observance of the necessary precautions regarding sensitive personal data¹⁵ and the secrecy of justice.

The 7th Article makes it clear that under no circumstances can discrimination occur in decisions made using AI and, if this occurs, the use of AI will be discontinued. It is worth reading the full transcript of the article:

7th Article Judicial decisions supported by Artificial Intelligence tools must preserve equality, non-discrimination, plurality and solidarity, helping in a fair trial, with the creation of conditions that aim to eliminate or minimize oppression, human marginalization and errors of judgment arising from prejudices.

§ 1st Before being put into production, the Artificial Intelligence model must be approved in order to identify whether prejudices or generalizations influenced its development, leading to discriminatory tendencies while functioning.

§ 2nd When it is verified any discriminatory bias of any nature or incompatibility of the Artificial Intelligence model with the principles provided for in this Resolution, corrective measures must be taken.

§ 3rd The impossibility of eliminating the discriminatory bias of the Artificial Intelligence model will imply the discontinuity of its use, with the consequent registration of its project and the reasons that led to such decision.

Article 8 defines transparency as being I – responsible disclosure, considering the sensitivity of judicial data; II – indication of the objectives and results intended by the use of the Artificial Intelligence model; III – documentation of the identified risks and indication of the information security and control instruments for dealing with them; IV – possibility of identifying the reason in case of damage caused by the Artificial Intelligence tool; V – presentation of the audit and certification mechanisms for good practices;

---

15 The Resolution refers to the concept of Law No. 13,709 / 2018, and its regulatory acts

VI – provision of satisfactory and auditable explanation by human authority regarding any decision proposal presented by the Artificial Intelligence model, especially when it is of a judicial nature. In the same sense, Articles 25–27 provide guidance on accountability and Article 25 makes it clear that “Any computational solution of the Judiciary that uses Artificial Intelligence models must ensure full transparency in accountability, in order to guarantee the positive impact for end users and society.”

Articles 9–12, on the other hand, guide the agencies of the Judiciary towards Governance and Quality in the use of any AI model, while Articles 13 – 16 highlight the essential security issues in the sense that:

- the data used in the training process for Artificial Intelligence models must come from secure sources, preferably from the government. (Article 13)
- the system must prevent the data received from being altered prior to its use in training the models, as well as maintaining a copy dataset for each model version developed. (Article 14)
- the data used in the process must be effectively protected against the risk of destruction, modification, loss or unauthorized access and transmission. (Article 15)
- the storage and execution of Artificial Intelligence models should take place in environments adhering to consolidated information security standards. (Article 16)

Articles 17–19 have provisions on user control¹⁶ and state that they “must be informed, in clear and precise language, about the use of an intelligent system in the services provided to them.”

With regard to Articles 20–24 that deal with research, development and implantation of artificial intelligence services, it is important to highlight Article 20 that regulates the composition of teams that will deal with technology, emphasizing that “the composition of teams for research, development and implementation of computational solutions that use Artificial Intelligence will be guided by the search for diversity in its broadest spectrum, including gender, race, ethnicity, color, sexual orientation, people with disabilities, generation and other individual characteristics”. Also noteworthy is Article 24, which

---

¹⁶ Defined in article 3 as: User: person who uses the intelligent system and who has the right to its control, according to its endogenous or exogenous position to the Judiciary, can be an internal user or an external user; Internal user: member, server or collaborator of the Judiciary that develops or uses the intelligent system; External user: person who, even without being a member, servant or collaborator of the Judiciary, uses or maintains any kind of contact with the intelligent system, notably jurisdictions, lawyers, public defenders, prosecutors, members of the Public Ministry, experts, technical assistants, among others.

prohibits “I – disrespecting the dignity and freedom of people or groups involved in their work; II – promote activities that involve any kind of risk or damage to human beings and the equity of decisions; III – subordinate investigations to sectarianism capable of directing the course of the research or its results.”

Furthermore, Articles 25–27 make clear the responsibility of those who do not follow the principles indicated in the Resolution and that the CNJ must be notified by the agencies of the Judiciary of all records of adverse events in the use of AI.

Thus, in view of the international context and the experience in the regional courts, it is unquestionable the progress that Resolution 332 presents, not only at Brazilian level, but at global level because it is in line with the guiding principles of the use of technology.

CONCLUSION

It is undeniable that AI has arrived to stay, is the focus of global research and has become essential (mainly in the pandemic), presenting not only solutions but also threats to various issues in the Judiciary.

As explained throughout this Article, the Brazilian Judiciary is well advanced in the use and regulation of AI for day-to-day issues and this was highlighted through the commendable Resolution 332 of the CNJ.

The Resolution, in line with the principles indicated internationally, values transparency, the possibility of auditing, guarantee of impartiality, equality, non-discrimination, justice and elimination of errors of judgment resulting from prejudice.

In addition, it highlights the importance of data source security used in the machine learning process, respect, and responsibility for users' privacy.

In this way, it will be interesting to follow the next steps of the Brazilian Justice in the use of this new technology.

CLOSURE



July 2
2020

Luis Felipe Salomão



LUIS FELIPE SALOMÃO

Minister of the Superior Court of Justice,
Professor at Fundação Getulio Vargas and
Coordinator of the Center of de Innovation,
Administration and Legal Research of FGV

All these exhibitions were remarkably interesting. I am grateful to the President of TST, Minister Maria Cristina Peduzzi, who provided us with a current view of labor relations and the influence of this situation in the economy on demand, in addition to the uberization, the 4.0 revolution and the paradigm shift that all of this provide us. Her Excellency also spoke about the impact of artificial intelligence on labor relations, the financial market, industry and agribusiness, showing how AI has been compelling us to new forms of interaction and the consequences of this for the future and the organization of Work Justice itself.

Professor André Ponce dealt with topics that, little by little, are being incorporated by Law. Many AI references are nothing more than a more sophisticated program, and he technically explained how to make this differentiation. He also addressed machine intelligence and made an evolutionary line, bringing a reflection on how we can handle this evolution through regulation or the application of moral reasoning for the development of these projects. Law will have to deal with super-intelligent machines.

José Leovigildo made an in-depth analysis of the data, its application within the scope of the Judiciary, and mentioned the role of public policies in standardizing the various systems that our research has already identified. We will still need to deepen some

themes, such as ownership of the algorithm, discriminatory algorithms, ethics applied to the development of the algorithm, protection of personal data and of the Judiciary itself. Judge Marcus Lívio spoke knowingly, because he has a broad understanding in the tax field, in which robots have already generated several repercussions.

I have been thinking about the percentage of 2% of GDP that we allocate to the Judiciary budget. We need to keep in mind the proper application of these resources, and certainly one of the means is transparency for investment in artificial intelligence.

I thank all the participants again. All presentations were very enriching. After the approval of each one, they will be available to all who want the transcripts of the lectures, as well as our research, which promises to shed light onto the use of the various programs that have been developed in the Judiciary. The tasks assigned to the CNJ are the construction of a standardization and the sharing of these good practices. I hope that both research and publications can contribute to this. The idea of our research is exactly to change the world around us for the better. I know that this is also one of the objectives of the Labor Court, which carries out its mission with highly prepared and very aware judges.

I also greet everyone who worked in this organization, without whom it would not be possible to hold this great meeting.

Congratulations on your presentations.

