The prospects of Artificial Intelligence in a Court Information System

Epameinondas Troulinos
President of the Administrative Court of First Instance
Veria, Greece
etroulinos@adjustice.gr

ABSTRACT

Artificial Intelligence is a transformational force. The paper examines this technology in an information system for the judiciary. It particularly explores how artificial intelligence could be used in the Integrated Administrative Court Case Management System of Greece. We identify two broad categories for AI development at the current level of this system: court-focused development and litigant-focused development. We examine particular tools that could facilitate the adjudication of cases considering four types of users: judges, court officers, lawyers and self-represented litigants. We conclude that certain tools could be developed to offer assistance to the above mentioned users

KEYWORDS

Administrative Justice, Court Information System, IACCMS, Artificial Intelligence

1 Introduction

Artificial Intelligence (AI) is a technology, which will infiltrate most aspects of our society. Although most people associate it with machine learning, it is a much broader group of methods and approaches. The enthusiasm of solving every problem in justice through technology fostered the introduction of Information and Communication Technologies (ICT) in the judiciary. Countries introduced ICT in their justice systems in order to improve both efficiency of justice and accessibility to justice. In this context, policy makers examine how AI can be used in courts to facilitate both the administration of justice and the adjudication of cases. Observing this trend the European Commission for the Efficiency of Justice of the Council of Europe has already adopted a text setting out ethical principles relating to the use of AI in judicial systems [1], which stands out among other similar European and international texts [2] in that it identifies core principles to be respected particularly in the field of AI and justice. Undoubtedly, the development of AI tools will transform the process of adjudication, because they will alter the way legal information is used and communicated. Hence, the effects of the changes introduced by AI have the potential of being much deeper and less controllable. In examining the use of AI in a court information system one has to address the question of what use can AI have for courts; that is how AI can help parties of a case (litigants), members of the registry (court officers) and judges. We assume that AI for the judiciary should be 'bespoke'. It should provide solutions to the problems that a particular jurisdiction –using a certain court information system- faces. The aim of this paper is to examine the effective application of AI regarding the court information system that was introduced in 2015 at the administrative justice of Greece, the Integrated Administrative Court Case Management System of Greece (IACCMS). Section 2 briefly introduces IACCMS and displays current and future developments of the system, Section 3 presents potential AI solutions for IACCMS and our concluding remarks are on Section 4.

2 Formation of the Integrated Administrative Court Case Management System of Greece

In this section we will introduce IACCMS, but firstly we will provide some preliminary remarks about administrative justice in Greece and the introduction of ICT in it. These observations are necessary before assessing the possibilities of AI in the following section.

The Constitution of 1975 (revised in 1986, 2001, 2008 and 2019) establishes three jurisdictions: civil, criminal and administrative. Administrative justice, i.e. a court system that adjudicates on disputes between the citizen and the administration, is organized in three tiers: the courts of first instance, the courts of appeal and the Council of the State (the Supreme Administrative Court), the latter being responsible for the rational operation of administrative justice. Furthermore, the General Commission of the State for the Regular Administrative Courts, which is a separate branch of senior administrative judges, monitors and oversights the operation of administrative courts and assists them without interfering with their judicial task. It is also the competent authority (at operational level) that serves as an intermediary between the Council of State and the rest of administrative courts. Finally, the Ministry of Justice, Transparency and Human Rights is entrusted, among other competences, with the management of justice. It supervises the administration of justice, dealing with organizational issues and

WAIEL2020, September 3, 2020, Athens, Greece

the infrastructure and it provides economic (through the budget of the State) and administrative support to the judiciary.

After the re-establishment of administrative courts of first instance and appeal in their current form (in 1985) and the transfer of cases from the Council of State to them, the number of cases that they adjudicate rose exponentially and as a result there were delays in delivering justice. The Greek legislator adopted several laws in order to speed up court proceedings in administrative justice. In addition, the introduction of ICT in administrative justice turned into a priority. From 2000 onwards the Council of State started the computerization of its registrar for the workflow of judicial proceedings before the court (case management) and also the integration of existing applications. In 2006 the integrated case management system of the Council of State was operational; it contained the court's jurisprudence, the workflows of the registrar (computerization of proceedings), a management information system (MIS) and a web site. On the other hand, the computerization of administrative courts of first instance and appeal was fragmented, since each court was perceived (from an IT point of view) as an autonomous entity; that is each court was responsible both for the administration of its data and for the communication with external users, including other administrative courts. The different information systems that the courts had did not interoperate with information systems outside of the judiciary (e.g. lawyers, public administration, citizens), thus hindering the efficiency of justice. Furthermore, due to local configuration of systems there was local implementation of work flows, thus a need for an integrated electronic case management system became evident. There were few digital archives and court decisions were available only to the court that issued them, with the exception of judgements of Council of State. Furthermore, the lack of funds due to the drastic reduction in budgetary resources made untenable the maintenance cost of infrastructure.

Beware of those issues the Ministry of Justice, Transparency and Human Rights in its 'Action Plan for e-justice and administrative improvement' [3, in Greek] decided that the Council of State would lead the initiative to introduce IACCMS, which is operational since 2015. For the purposes of this paper, we are interested in three of the main components of IACCMS: i) the court case management system, which coordinates the workflows (business process) of all the courts of administrative justice, ii) the uniform digital archive of all court decisions, accessible to all judges and partially accessible (only of anonymized judgements) to the general public and iii) a 'one-stop-shop' portal through which external users can gather information from any court. Since 2018 IACCMS interoperates with the National Lawyers Information System for the e-filing of cases (application to initiate proceedings). In addition, this year (2020) IACCMS interoperates with the information system of the Legal Council of the State (the public body that defends the Administration before all courts) for the e-filing of a case, the electronic delivery of court decisions and for clearance of legal costs. Finally, articles 75 and 76 of law 4635/2019 stipulate that the communication between litigants and administrative courts from 01.01.2021 will be by electronic means; the law further establishes the electronic file of each case ('paperless court').

Bearing in mind the above-mentioned developments at administrative justice in Greece, in the following section we will display the AI tools that could be used at IACCMS.

3 Development possibilities of AI for IACCMS of Greece

In recent years a lot of companies made investments to search the potential of AI, with considerable results (e.g. IBM's Watson and Google's Alpha Go). AI innovations provide services to end users (e.g. Apple's Siri and Amazon's Alexa voice assistants, user-specific content provided by Netflix etc.), though the fact that these services are based on the collection and processing of user generated data, is raising concerns about the protection of personal data [4] and generally about privacy in the digital age [5]. However, it was the availability of massive amounts of training data, along with breakthroughs in computational power, improvements in machine learning algorithms and mobile connectivity that fostered AI breakthroughs. The use of AI technology for managing public services has the potential to make public organizations more adaptive to a society with diverse and changing needs and demands. AI will continue to transform society, although there is skepticism about AI's potential, due to the fact that many of the grand claims made (e.g. autonomous vehicles) have failed to become reality. The limits to the use of AI are mainly due to the fact that the most widespread technique, machine learning, is a powerful patent recognition tool, but lacks fundamental cognitive abilities of the human brain. It is accurately argued that "AI represents a concerted effort to understand the complexity of human experience in terms of information processes" [6]. Many stakeholders (litigants, lawyers, court officers and judges) anticipate the introduction and development of AI into the justice system, though each group expects different results, which do not always converge. We identify two broad categories: a) court-focused development of AI, i.e. tools that help the justice system to improve its efficiency and quality and b) litigant-focused development of A.I., i.e. tools that help either self-represented litigants or lawyers to navigate legal processes; i.e. to gather information about how the law applies to a particular case. In the first category (court-focused development of AI), these techniques could be used for court management purposes. For example, an AI tool could scan and digitize documents submitted by litigants, classify them into electronic files and match the document of each litigant to corresponding e-files (creating new e-files or linking to existing ones). It could further generate all necessary court procedural documents and even distribute cases to judges. IACCMS already has a court case management system that generates some court procedural documents (namely, notices and dockets). Since it is not yet mandatory to file a lawsuit by electronic means, the workflow is still paper based, meaning that regardless of the way a lawsuit is filed (paper or electronic form) the court officer has to enter the data to the information system. Law 4635/2019 stipulates that from 01.01.2021 the medium to communicate with administrative courts will be electronic; AI could be useful in automating the process of data entry. A prerequisite is to create ontology of legal terms -a 'Controlled

Legal Vocabulary'- that will provide the relevant metadata for the legal annotation of each document perhaps using LegalDocML (Akoma Ntoso); it would be beneficial to create an automatic structuring and semantic indexing of legal documents written in Greek [7]. The AI tool should process uniformly all unstructured documents that are uploaded to IACCMS; it should further automatically apply metadata and connect the document to a particular electronic case [8]. For this purpose and to further enhance interoperability, some of the existing tools that EU provides to its member states could be used such as Controlled Vocabularies , LegiVoc , Vocbench and, for the documents that public administration sends, LEOS . Since it is very challenging to process a legal document not developed by a lawyer, it would be helpful to consider the development of techniques that will help self-represented litigants to present facts in a more structured way,

Having established an AI system such as the one already described, it could be further used to improve the quantitative processing of e-files. For example, an AI tool could identify certain legal features (information extraction) in each case, assign it to different case management tracks according to its complexity and also group cases. Thus, it could streamline the processing of judicial procedures in adjudicating a case, while also reducing court staff and judges' workload. This system could also provide useful information to citizens (apart from prospective litigants and lawyers), such as the duration of judicial proceedings for different categories of cases in a particular court, the number of pending cases of a particular nature etc. Moreover, machine learning could be applied to the analysis of legal documents so as to support judges in the solving of a dispute. For example, it could create summaries of both the facts of the case and the arguments that each litigant made in the documents (lawsuit, submissions, and memorandums) [9]. However, before rolling out such an AI tool thorough assessing should be preceded, because AI cannot (yet) understand the context of a document; in other words, it cannot perform legal reasoning and therefore AI could be misled by minor variances in the data that it applies [10]. We comprehend that although existing legal text analytics tools can extract certain kinds of semantic legal information from legal texts, they are not yet able to extract expert systems rules. It is therefore necessary to further develop techniques that identify argument related information in legal documents.

Additionally, AI tools could be used for the further development of the uniform digital archive of all court decisions in IACCMS. This database is accessible only to judges of administrative justice and it contains all the judgements of the Council of State and the judgements of all administrative courts of first instance and appeal since 2015 and for some courts since 2000. It could be useful to develop an AI tool for the retrieval of decisions related to a particular case. In order to succeed in this endeavor an imperative condition is the unambiguous identification of each court decision; i.e. to 'label' or 'tag' each judgment with the appropriate metadata (in a project similar to the one mentioned earlier about legal documents). In the case of court decisions there is already in place a useful tool provided by EU, the European Case Law Identifier (ECLI) [11] that could be defined as HTTP-URI. The judgments of the Council of State already use ECLI, and its obligatory metadata. The potential is to use ECLI to all court decisions of administrative justice and furthermore use at least two of the optional metadata of this tool. Particularly, the field "dcterms: abstract" contains a summary of the court decision and the field "dcterms: description" contains descriptive elements, like keywords. Both of these fields could be filled using the technique of legal text analytics, which was previously described, i.e. an AI tool that is able to 'read' the relevant parts of a court decision and on the one hand create a summary of the judgement and on the other hand apply the appropriate terms of the 'Controlled Legal Vocabulary'. It would further be desirable to create an AI tool capable of anonymizing or pseudonymizing a court decision before uploading it at the portal of IACCMS, where it would be accessible for everyone to access. This tool should be able to recognize natural persons and anonymize or pseudonymize their personal data, while preserving the accuracy of the court decision.

Regarding the second category (litigant-focused development of A.I.), AI could be used to provide relevant information to external users of IACCMS. For example, using a question answering system [12], citizens, self-represented litigants as well as lawyers could gather information about the jurisprudence of a particular category of cases (landmark decisions). Usually, prospective litigants prior to filing a claim to initiate legal proceedings need information such as the extent of their rights, court costs, length of proceedings, the necessary procedural steps to be followed etc. European judicial bodies of the Council of Europe encourage the dissemination of information to citizens by courts in order to facilitate access to justice [13 and 14]. The EU is consolidating relevant information about member states in the European e-justice portal . In order to provide personalized information to self-represented litigants and lawyers the development of an interactive information system that maintains dynamic information (a difficult task, since courts are subject to almost continuous change of the law) at the portal of IACCMS is necessary. In a simplified form such a system could assist the prospective self-represented litigant or the lawyer through a dynamic questionnaire (dialogue modelling). Moreover, a conversational bot (Chabot) could be developed to enable users to interface with it by voice and language, as long as it is able to analyze structured and unstructured data (text and human speech). The advantage of the development of such an AI tool is that it can improve its efficiency by learning from the recorded dialogues, thus each time finding a more suitable answer to the question posed. Obviously, sufficient safeguards are needed for the protection of personal data of the users in the recorded dialogues. The goal is to navigate the user to the 'customized' information that he seeks and only in rare cases direct the user to a court officer who will provide the necessary information. To this end the system should be simple enough for a user with basic technological literacy to use; a complex system may delay the expected advantages especially for self-represented litigants, hence the testing phase with stakeholders is important. There is currently significant attention on developing tools to assist people in resolving legal disputes [15], however, an AI tool to predict the outcome of court cases or even to analyze the quality of a legal

claim and evidence to be submitted would be out of the scope of IACCMS, because the judiciary should not provide legal advice. Besides, such AI tools, at the current stage of development, can follow the letter of the law while disregarding its spirit, since they can extract explicit, not implicit, information and they lack human qualities such as empathy.

4 Conclusion

Legal systems can be improved by the introduction of AI, which has the ability to bring change and benefits to society; it notably has much to offer to individuals involved in court cases and the justice system as a whole, though caution is needed for the impact that AI could have on human rights [16]. Considering the prospects and limitations of AI we explored the question of how AI can facilitate the adjudication of cases, focusing on the specific uses of AI for IACCMS regarding four types of users: judges, court officers, lawyers and self-represented litigants. We understand that new tools could be built to help judges and court officers with the administration of justice: to facilitate the workflow of the registry of courts and to provide useful information to judges about the cases. We further conclude that AI tools could be developed to offer assistance to litigants and their lawyers in navigating legal processes, namely to help parties to gather information prior to initiating legal proceedings before an administrative court. However, there are limitations to the introduction of AI in the justice system, since AI "should not compromise the human and symbolic faces of justice. If justice is perceived by the users as purely technical, without its real and fundamental function, it risks being dehumanized. Justice is and should remain humane as it primarily deals with people and their disputes". [17].

REFERENCES

[1] Council of Europe, European Commission for the Efficiency of Justice, (2018), European ethical Charter on the use of Artificial Intelligence in judicial systems and their environment, as adopted at the 31st plenary meeting of the CEPEJ on 3-4 December 2018, Retrieved June 17, 2020 from https://rm.coe.int/ethical-charter-en-for-publication-4-december-2018/16808f699c

[2] T. Dutton (2018), An Overview of National AI Strategies, Medium, 28 June 2018. Retrieved June 17, 2020 from https://medium.com/politics-ai/an-overviewof-national-ai-strategies-2a70ec6edfd

[3] Ministry of Justice, Transparency and Human Rights (April 2014), Σχέδιο Δράσης για την Ηλεκτρονική Δικαιοσύνη και τη Διοικητική Αναβάθμιση, [Action Plan for ejustice and administrative improvement, in Greek], 9th edition,. Retrieved September 9, 2019 from http://www.ministryofjustice.gr/site/LinkClick.aspx?fileticket=ENzZ1R6Y5fs%3d&tabid=253

[4] European Commission (2020), White paper on artificial Intelligence – A European approach to excellence and trust, 19.2.2020 COM(2020) 65 final. Retrieved June 17, 2020 from https://ec.europa.eu/info/sites/info/files/commission-white-paper-artificial-intelligence-feb2020_en.pdf

[5] M. Becker (2019), Privacy in the digital age: comparing and contrasting individual versus social approaches towards privacy, Ethics and Information Technology 21:307–317, https://doi.org/10.1007/s10676-019-09508-z)

[6] Virginia Dignum, (2019), Responsible Artificial Intelligence. How to develop and use AI in a responsible way. Springer.

[7] Koniaris M., Papastefanatos G. and Vassiliou Y., (2016), Towards Automatic Structuring and Semantic Indexing of Legal Documents. In: Proceedings of the 20th Pan-Hellenic Conference on Informatics, ACM, 1–6. https://doi.org/10.1145/3003733.3003801

[8] Branting LK, (2016), Vocabulary reduction, text excision, and procedural-context features in judicial document analytics. In Proceedings of the workshop on legal text, document, and corpus analytics (LTDCA-2016), pp 30–36. Retrieved June 17, 2020 from http://law-and-big-data.org/LTDCA_2016_Workshop_Report.pdf

[9] Chen Y.-C. and Bansal M. (2018). Fast abstractive summarization with reinforce-selected sentence rewriting. In Proceedings of the 56th Annual Meeting of the Association for Computational Linguistics (Long Papers), pages 675–686, Melbourne, Australia, July 15 - 20, 2018, Retrieved June 17, 2020 from https://www.aclweb.org/anthology/P18-1063.pdf DOI: 10.18653/v1/P18-1063)

[10] Robin J. and Liang P., (2017), Adversarial Examples for Evaluating Reading Comprehension Systems, July 23, 2017, Retrieved June 17, 2020 from https://arxiv.org/pdf/1707.07328.pdf.

[11] Council conclusions inviting the introduction of the European Case Law Identifier (ECLI) and a minimum set of uniform metadata for case law. Official Journal of the European Union, 2011/C 127/01.

[12] Prager J., Brown E., Coden A. and Radev D., (2000), Question-answering by predictive annotation, In Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval, July 2000 Pages 184–191 https://doi.org/10.1145/345508.345574

[13] Council of Europe, Consultative Council of European Judges, Opinion No. 7 (2005) of CCJE to the attention of the Committee of Ministers of the Council of Europe on "Justice and Society" adopted by the CCJE at its 6th meeting (Strasbourg, 23-25 November 2005), Retrieved June 17, 2020 from https://rm.coe.int/compilation-of-opinions-of-the-consultative-council-of-european-judges/168074fabc#_Toc493252563

[14] Council of Europe, European Commission for the Efficiency of Justice, (2017), Guidelines on how to drive change towards cyberjustice - Stock-taking of tools deployed and summary of good practices, Retrieved June 17, 2020 from https://edoc.coe.int/en/efficiency-of-justice/7501-guidelines-on-how-to-drive-change-towards-cyberjustice-stock-taking-of-tools-deployed-and-summary-of-good-practices.html)

[15] Aletras, N., Tsarapatsanis D., Preoţiuc-Pietro D. and Lampos V., (2016), Predicting judicial decisions of the European Court of Human Rights: A natural language processing perspective, PeerJ Computer Science, Vol. 2, p. e93, http://dx.doi.org/10.7717/peerj-cs.93.

[16] Council of Europe, (2020), Recommendation CM/Rec(2020)1 of the Committee of Ministers to member States on the human rights impacts of algorithmic systems, Adopted by the Committee of Ministers on 8 April 2020 at the 1373rd meeting of the Ministers' Deputies, Retrieved June 17, 2020 from https://search.coe.int/cm/pages/result_details.aspx?objectid=09000016809e1154

[17] Council of Europe, Consultative Council of European Judges, (2011), Opinion No. 14 (2011)of the CCJE "Justice and information technologies (IT)" Adopted by the CCJE at its 12th plenary meeting (Strasbourg, 7-9 November 2011), Retrieved June 17, 2020 from https://rm.coe.int/168074816b.