World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Human-Automation Interaction in Law: Mapping Legal Decisions and Judgments, Cognitive Processes, and Automation Levels

Authors : Dovile Petkeviciute-Barysiene

Abstract : Legal technologies not only create new ways for accessing and providing legal services but also transform the role of legal practitioners. Both lawyers and users of legal services expect automated solutions to outperform people with objectivity and impartiality. Although fairness of the automated decisions is crucial, research on assessing various characteristics of automated processes related to the perceived fairness has only begun. One of the major obstacles to this research is the lack of comprehensive understanding of what legal actions are automated and could be meaningfully automated, and to what extent. Neither public nor legal practitioners oftentimes cannot envision technological input due to the lack of general without illustrative examples. The aim of this study is to map decision making stages and automation levels which are and/or could be achieved in legal actions related to pre-trial and trial processes. Major legal decisions and judgments are identified during the consultations with legal practitioners. The dual-process model of information processing is used to describe cognitive processes taking place while making legal decisions and judgments during pre-trial and trial action. Some of the existing legal technologies are incorporated into the analysis as well. Several published automation level taxonomies are considered because none of them fit well into the legal context, as they were all created for avionics, teleoperation, unmanned aerial vehicles, etc. From the information processing perspective, analysis of the legal decisions and judgments expose situations that are most sensitive to cognitive bias, among others, also help to identify areas that would benefit from the automation the most. Automation level analysis, in turn, provides a systematic approach to interaction and cooperation between humans and algorithms. Moreover, an integrated map of legal decisions and judgments, information processing characteristics, and automation levels all together provide some groundwork for the research of legal technology perceived fairness and acceptance. Acknowledgment: This project has received funding from European Social Fund (project No 09.3.3-LMT-K-712-19-0116) under grant agreement with the Research Council of Lithuania (LMTLT).
Keywords : automation levels, information processing, legal judgment and decision making, legal technology
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020