

The Future of the Justice System: Can Artificial Intelligence Replace Judges?

ABSTRACT

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This diploma thesis examines the role of algorithmic artificial intelligence in the judiciary. It analyses whether AI may replace human judges and how it may affect the exercise of judicial authority as a whole.

The introductory part defines artificial intelligence and outlines its fundamental operating principles, including machine learning, algorithms, and neural networks. The potential applications of AI in the judiciary include the automation of routine administrative tasks such as the scheduling of judges, allocation of case files, or transcription of courtroom audio recordings. Furthermore, legal scholarship identifies the use of AI for researching, analysing, and summarising case law, including advanced tools capable of predicting the probable outcome of legal disputes or even proposing draft judgments.

At present, the Czech judicial system employs AI tools primarily for the automated assignment of cases and the anonymisation of judgments. However, the further implementation of such technologies is significantly limited by the lack of digitalisation of court decisions and case files.

The thesis proceeds to a detailed analysis of the risks associated with the use of AI in the judiciary. Chief among these is the opacity of decision-making algorithms, often referred to as the "black-box" effect, which underscores the lack of transparency in algorithmic reasoning. There is also a substantial risk of producing discriminatory or otherwise biased outcomes due to poor-quality input data. Moreover, the thesis highlights the current lack of adequate legal regulation concerning automated decision-making processes. It also briefly addresses the emerging issue of deepfakes.

The work further discusses the approaches of various foreign jurisdictions to the integration of artificial intelligence in the judiciary, providing specific examples of practical application. Among the most ambitious are Estonia, with its decision-assisting algorithm for small civil claims; the United States, which utilises the COMPAS software system to assess the risk of criminal recidivism; and the People's Republic of China,

which has implemented an algorithmic decision-making system capable of generating judgments autonomously. Nevertheless, these AI-generated decisions are always subject to final review by a human judge, which remains a critical safeguard for the future implementation of any such system.

The application of artificial intelligence in judicial proceedings can enhance efficiency, reduce human error, alleviate administrative burdens, and potentially decrease the backlog of unresolved cases. On the other hand, the thesis draws attention to serious ethical, legal, and technical concerns.

In conclusion, the text asserts that artificial intelligence cannot fully replace human judicial discretion and, at present, cannot act as an independent adjudicative authority. AI lacks moral reasoning, experiential judgment, and an individualised approach—qualities intrinsic to human judges. The right to a fair trial and public confidence in the judiciary could be jeopardised in circumstances where legal matters are evaluated by a system that lacks empathy and fails to adequately assess the legal interests of the parties. Nonetheless, AI can significantly facilitate routine tasks and text-based work, which constitute a substantial portion of judicial administration.

KEY WORDS: artificial intelligence, judiciary, algorithmic decision-making