

**13th Legal Argumentation Conference 2025  
(LEGARG 2025)**

**»Law, Artificial Intelligence and Ethics«**

**20th and 21st of November, 2025**

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**Katoliški inštitut  
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## Welcome Message

On behalf of the Organizing Committee, it is our great pleasure to welcome you to the 13th LEGARG Conference, dedicated this year to the study of Legal Theory under the theme: “Law, Artificial Intelligence and Ethics ”

This conference brings together scholars, professors, and researchers from different countries to share insights, thoughts and innovative perspectives on the social, political, and legal issues that are shaping the future of law in an era of rapid changes.

As artificial intelligence increasingly intersects with legal systems, ethical frameworks, and societal norms, the exchange of ideas at this conference is both timely and essential. We hope that the presentations, discussions, and collaborations that emerge here will inspire new approaches, stimulate critical reflection, and contribute meaningfully to the evolving discourse in legal theory.

This year's LEGARG conference holds great importance as it is to be held as a part of a »Center for Constitutionalism and AI« project, supported by ARIS, Slovenian Research and Innovation Agency.

We thank all participants for their contributions and engagement and look forward to two days of rich dialogue, intellectual exchange, and shared learning.

Welcome to the 13th LEGARG Conference!

## Abstracts

( in alphabetical order by the authors' first names)

**Title: The Question of Ethics and Artificial Intelligence in Law**

Author: Blaž Marinčič Udvarc, Doctor of Laws, European Faculty of Law, New University

This research paper analyzes the impact of ethics on artificial intelligence in the legal profession. The integration of artificial intelligence also known as AI into legal systems has sparked intense ethical debates, given the fact that law has a dual role as a protector of the vulnerable and a stronghold for the powerful. In the research paper we explored what it means to be ethical in the application of AI in the legal profession, examined whether current legal regulation is driven solely by ethical concerns and figured out ways to improve. Drawing on ethical frameworks all the way from utilitarianism and deontology all the way to virtue ethics, we identified fairness, transparency, accountability, privacy and human dignity as core principles for ethical AI in law. Through global case studies, including the COMPAS algorithm's bias in the United States of America, China's social credit system, this research highlights the potential that AI has in the role of justice all the while risking perpetuating discrimination and surveillance. Analysis of regulation yielded a powerful reveal of a blend of ethical and pragmatic drivers behind it all, with gaps in global coherence and enforcement. Proposed improvements include harmonized international standards, mandatory transparency, bias audits, human-in-the-loop systems, and public participation. All of this just to ensure AI aligns with the protective mission that the law has. Ethical AI requires proactive, principle-based governance to balance efficiency with justice, preventing the amplification of power imbalances. By synthesizing theoretical insights and empirical examples, the research paper offers a roadmap for regulators to safeguard values in an AI-driven legal landscape, fostering a future where technology enhances equity rather than eroding it.

**Title: Academic Integrity in the Age of AI: Rethinking Plagiarism and Originality in Legal Education**

Author: Divya Dwivedi, Prof.Dr., Assistant Professor, UPES Dehradun

Academic integrity stands as a cornerstone of honesty, trust, and ethical behaviour in the educational realm. However, in our rapidly changing world, generative artificial intelligence has profoundly transformed the landscape of academic writing and research, compelling a re-evaluation of long-held notions of originality, authorship, and intellectual honesty within legal education, AI tools such as ChatGPT and automated

drafting systems are increasingly embedded in learning and scholarly practices of students, and as a result of it the boundaries between legitimate assistance and academic misconduct have grown blurred and has brought significant challenges that threaten the very understanding of the term originality. The emergence of AI can be a powerful tool, but it also poses a serious risk to the core idea of academic integrity. In these times, it is essential that we revisit and re-evaluate of originality the concept of originality in legal research and practice.

This paper addresses questions of plagiarism and academic integrity concerning the use of AI and writing assistants, as well as the need to adapt the concept of originality in legal writing & research over time. This paper argues that, as Gen AI tools become more widespread, we need to understand how to incorporate the ethical use of AI, rather than completely forbidding it, and also revise our understanding of plagiarism to move towards the practicality required in academia and classroom practice. This paper seeks not only to raise awareness of these challenges but also to empower educators with strategies to harness the potential of these innovative technologies, as embracing these advancements in the academic fields is not merely an option; it is a necessity.

This paper, in the second part, also examines how AI-assisted writing tools are reshaping the boundaries of plagiarism and ethical scholarship, with a comparative focus on India and the European Union. In India, regulatory bodies such as the University Grants Commission (UGC) and the Bar Council of India (BCI) have yet to develop comprehensive frameworks addressing AI's role in academic writing, relying primarily on conventional plagiarism norms that fail to capture the nuances of machine-assisted authorship. In contrast, the European Union's approach, guided by emerging ethical and digital policies under the EU AI Act and the digital education action plan, reflects a more proactive engagement with AI governance in academia. Through this comparative analysis, the paper argues for an adaptive integrity model that reconciles technological innovation with ethical responsibility, advocating transparency, disclosure, and AI literacy as essential pillars for maintaining academic honesty in legal education across both jurisdictions.

**Title: Justice Beyond Calculus: Re-construction of Alexy's Weight Formula**

Author: Dragana Savić, PhD Candidate, European Faculty of Law, New University

Paper reconstructs and critically re-evaluates Robert Alexy's weight formula through the perspective of contemporary logical systems, exposing its limitations in capturing justice as a lived and contextual phenomenon. While the formula was conceived as an instrument to minimize judicial arbitrariness by formalizing the balancing of principles, its reliance on extensional logical structures confines it to the realm of syntax. Within such systems, meaning collapses under the weight of material implication, leading to logical explosion (*ex falso quodlibet*) and rendering the pursuit of justice formally

meaningless. The central argument is that no isomorphism can exist between pure logical form and natural language; once law is reduced to mathematical rationality, its semantic and ethical core dissolves.

This theoretical critique gains renewed relevance in the age of artificial intelligence and algorithmic legal reasoning. Modern AI systems replicate the same aspiration that underlies Alexy's project — the quantification of fairness. Yet, as with the formula, the algorithm's promise of objectivity conceals its blindness to context, narrative, and moral complexity. Fairness cannot be encoded numerically without erasing the interpretative dimensions that make justice possible. The ethical challenge thus lies not merely in improving data quality or algorithmic accuracy, but in acknowledging that empathy, accountability, and moral reasoning cannot be formalized within a purely logical or computational syntax. Through a concrete judicial case, the paper demonstrates how formalized language and AI-driven weighing models fail to engage the semantic richness of legal discourse. It argues that the duty of competence in the use of AI tools includes understanding their epistemic limits: without interpretive contextualization, such systems risk transforming the very ontology of law.

Ultimately, both Alexy's formula and AI balancing algorithms expose the same paradox — the attempt to capture justice through logic inevitably reveals its dependence on meaning. Justice, therefore, must be rethought not as a calculable equilibrium but as an event: a dynamic process of interpretation, regeneration, and moral presence that resists total formalization.

Title: **Governing Remote Sensing and AI in Forest Management: An International Law Framework**

Author: Fahim Abrar Abid Erasmus Mundus Scholar, University of Glasgow

Forestry agencies now use satellites, drones and machine-learning models to map biomass, detect illegal logging and verify carbon credits. These tools promise improved conservation and compliance, but they also create sensitive datasets about people, places and livelihoods. High-resolution data generated by these tools can reveal individual movements, sacred sites and community livelihoods, yet there is no clear international licensing framework. Moreover, commercial operators control much of the data, raising concerns about privacy, security and unequal access. According to the United Nations' Remote Sensing Principles, sensing should benefit all countries, take account of developing nations' needs and respect state sovereignty. They also require that sensed states have non-discriminatory access to the data. Anchored in this baseline—although leaving many questions unanswered—for equitable use of

geospatial data, recent legal and policy developments can be interpreted to show how these gaps might be addressed. Advisory Opinions, although not binding, from the *International Court of Justice* and the *Inter-American Court of Human Rights* recognise duties to prevent transboundary environmental harm and protect a healthy climate. Courts in several jurisdictions, including Canada, have ruled that insufficient climate action can violate constitutional rights. At the same time, global forums such as *COP28* have called for AI-enabled climate tools to be shared with developing countries, regulated responsibly and co-designed with vulnerable communities. Together, these developments highlight the need for a coherent legal framework that aligns remote-sensing innovation with human rights, climate obligations and equitable access. Using a qualitative and doctrinal method—analysis of primary legal instruments (international conventions, treaties, frameworks), recent judgments and selected domestic cases alongside secondary sources (i.e., COP meeting reports, scholarly analysis and policy documents)—the research primarily addresses ethical issues at the intersection of forest management, remote sensing and artificial intelligence. Instead of treating privacy, fairness, digital divide and innovation as separate topics, it will show how they are connected. The central research question is whether existing remote sensing instruments adequately protect privacy, fairness, and equitable access, and how innovation and rights can be best balanced in forest management. Assessing the gaps, the paper aims to outline an international legal framework for ethical remote sensing and AI in forestry. The emphasis is limited to legal interpretation and normative argument, and the technical analysis of AI models are beyond the ambit of this research. Anchored in the Third World Approaches to International Law (TWAIL) and Regulatory Governance Theory (RGT), this paper (i) interrogates historical power asymmetries and asks whether technology governance reproduces colonial patterns, i.e., whether remote-sensing projects perpetuate unequal benefits and burdens and how international law can be reinterpreted to protect Global South interests, and (ii) views law as an interplay between state authority and non-state actors, in designing policies that can align AI and remote sensing with environmental and human rights norms.

### Title: **Economic Diplomacy in the Age of AI**

Author: Gorazd Justinek, Prof.Dr., Associate Professor, European Faculty of Law, New University

Economic Diplomacy (ED) is entering an algorithmic society in which power and decision-making are increasingly mediated by artificial intelligence (AI). This paper argues that the classical, public, and digital phases of ED are giving way to a late post-modern, algorithmic phase that requires both a reframed theory and concrete reform of practice. We present AIDE, *Algorithmic Impact on Diplomacy & Economy*, a research and policy framework that couples a general theory of ED with five applied

case studies: (1) business & human rights grounded in human dignity and the UNGPs; (2) good governance and legislative/regulatory design; (3) transnational/EU constitutional principles; (4) international business and the growing power of multinational corporations in driving AI; and (5) security, business intelligence, and data protection. We show how AI shortens decision cycles, reshapes stakeholder constellations, and blurs accountability, without replacing the diplomat's core roles as ethical guardian, strategic coordinator, and interpreter of political context. The paper proposes practical tools for legitimate, effective, and safe ED in AI-mediated environments: algorithmic registers, mandatory impact assessments, transparency and audit standards, AI/data clauses in trade and investment agreements, state–MNC partnership rules, and cyber-resilience baselines. Our goal is a coherent, human-centred theory and toolkit for ED that protects rights, preserves democratic oversight, and enhances state capacity in the age of AI.

**Title: What Lawyers Should Know About the History of Artificial Intelligence**

Author: Hanna Maria Kreuzbauer, Ass.-Prof. MMag. Dr., University of Salzburg

Artificial Intelligence is transforming almost every aspect of our lives, and while its regulation is the task of lawyers, the reflective analysis of AI is the responsibility of legal theorists. In order to engage adequately with AI, it is helpful to understand its historical and intellectual background — this paper provides such an overview.

It begins with an outline of the bio-cultural evolution of cognition, followed by the development of calculating machines and computers. The second part traces the history of AI itself, from the early days of artificial neurons and the legendary Dartmouth Conference, through the two AI winters, to the rise of neural networks, machine learning and deep learning. Particular attention is given to transformers and large language models (LLMs) as the most recent phase of AI, in which statistical learning achieves generative and linguistic capabilities once considered to be uniquely human.

The paper concludes with a brief outlook on possible future scenarios, emphasizing their potential as well as the risks they pose to us.

**Title: Between Scylla and Charybdis: The Rule of Law Between State and Private Power in the Digital Age**

Author: Igor Milinković, Prof. Dr., Full Professor, Faculty of Law of the University of Banja Luka

Traditionally, the Rule of Law was conceived as a bulwark against government arbitrariness, a normative and institutional safeguard ensuring that government action

remained bound by publicly known, general, and predictable rules. As Martin Krygier observes, “mainstream” theory of the Rule of Law has focused primarily on government power as the principal source of arbitrariness. Classical Rule of Law theorists, from Dicey to Fuller, primarily addressed the dangers of public authority unrestrained by law. In this tradition, Joseph Raz defines the Rule of Law, in a legal sense, as the principle that the government should be ruled by the law and be subject to it, arguing that its core virtue lies in minimizing the danger of arbitrary power in the hands of government officials. Lon Fuller, in what commentators such as Burgess have depicted as a state-centric conception of the Rule of Law, specified a set of requirements which lawmakers must respect if they are to create a system of rules that may be properly called legal system (his concept of the “inner morality of law” understood as the morality that makes law possible). However, one may ask whether this is the only form of arbitrary power relevant from the perspective of realizing the Rule of Law. What if, in the contemporary context, new forms of regulation are emerging that threaten to replicate, and even surpass, the dangers of governmental arbitrariness that classical theorists of the Rule of Law sought to avert? As Lessig suggests in his conception of the “West Coast Code” the architecture of cyberspace and the digital infrastructures designed by private actors now function as a new form of regulation, one that determines, often invisibly, the scope of individual freedom and introduces novel risks of arbitrariness.

In the twenty-first century, the locus of power has shifted profoundly. Digital platforms and algorithmic systems now exercise forms of coercion and rule-making that profoundly affect rights of individuals and represents a potential source of arbitrary domination. Authors such as Martin Krygier and Gerald Postema argue that the rule of law must be understood in terms of its capacity to respond to all sources of arbitrary power, rather than being confined to the actions of the state government alone. Within his teleological conception, Martin Krygier argues that the Rule of Law must address not only state power but all forms of arbitrary power, including those exercised by private actors such as large corporations and financial institutions. His central claim is that the ideal of the Rule of Law must be re-conceptualized to include private power, both as a potential source of arbitrary domination and as an essential contributor to tempering arbitrariness. Gerald Postema also considers private power as proper concern of the Rule of Law. Digital platforms and large data brokers, through their control of data and algorithmic decision-making, exercise vast and largely unchecked power over individuals and communities. Postema emphasizes the need to subject digital power to the Rule of Law by establishing mechanisms of algorithmic accountability, including transparency about data sources, design principles, and decision-making criteria, as well as duties of explanation and justification. He further maintains that genuine transparency requires expert oversight capable of assessing complex algorithmic systems, ensuring that digital power is effectively tempered while preserving its social benefits.

This paper examines the risks that the use of digital technologies and artificial intelligence poses to the fundamental principles of the Rule of Law, emphasizing the need to interpret this concept in light of emerging challenges. It highlights the need for the Rule of Law to recognize and address potential arbitrariness originating from both state and private actors, thereby ensuring a balanced navigation between the aforementioned Scylla and Charybdis of arbitrary power and domination. Yet, given the growing diversity and proliferation of such sources, the metaphor of the many-headed Hydra may more adequately capture the multiplicity of new and evolving forms of arbitrary power.

**Title: The right to good governance in algorithmic society**

Author: Katja Triller Vrtovec, Prof., Dr., Associate professor, European Faculty of Law, New University

Artificial intelligence (AI) tools are generally viewed as most helpful in situations, where we need to find a specific answer to our specific question. In the context of different branches of government this corresponds to judicial branch of government that uses deductive reasoning that applies known rules to a particular case. Considering the way AI functions, however, we realize that the AI algorithms do not know the meaning of its answers, but that large language models (LLMs) they use merely calculate the probability of words that most likely fit together. Translated into legal language that means that these LLMs use inductive reasoning when they analyse large data to arrive to one general principle, what is typical for legislative branch of government. Therefore, the AI tools show great potential for legislative drafting.

On the EU level, there already exist some open-source platforms that help legislators in drafting new legislative proposals. The most known platform is called LEOS that stands for Legislation Editing Open Software. It was developed by the European Commission to assist legal drafters and policy developers in their daily work. The latest publications discussing the main functionalities of this platform in called “AI-based solutions for legislative drafting in the EU” was published in September 2024. The other called “Overview of Smart Functionalities in Drafting Legislation in LEOS” was published in February 2024.

The paper will present the main functionalities of this “augmented LEOS” platform and the conditions for its use. The most important condition is providing for a sufficient quantity and quality of machine-readable legal data. The most widely used standards are the Akoma Ntoso (AKN) and LegalXML standards, which serve as a basis for modern machine-readable and fully digital legislative and judicial processes.

Moreover, the paper will present seven distinct categories of smart functionalities defined by the developers of the platform (verification, change tracking, linguistic

support, legal assistance, automated drafting, legal practices, and policy dimension) and investigated them in terms of user experience needs, business value, relevant

technology, data requirements, and performance considerations. The developers identified five core technologies as suitable for implementing these smart functionalities: Advanced Language Editing and Correction, Named Entity Recognition, Semantic Similarity, Natural Language Generation, and Information Extraction, which will also be briefly presented in the paper.

In addition to these useful nomotechnical tools, the paper will compare the possible theoretical potential of AI generated legal proposals in comparison to human made legislative proposals from its policy perspective. The most significant being the possibility of statistically analysing large number of concrete situations instead of relying only on a few practical situations known to the legislators or even writing a specific legislation to retroactively fit to one known past situation.

Finally, the paper will also address the potential drawbacks of AI-assisted legislative process, the most important being how and where to set the probability standards of when a generalised rule can be transformed into the legal proposal and to define the methodology that would fine tune the over inclusivity of such legislative proposals. This happens when a rule that corresponds to most of the population is enforced to the whole population and the AI algorithm does not take into consideration the new criteria as it was not envisioned by the developers at the beginning. The paper will argue that such generalization would be like decision making based on stereotypical personal circumstances, which also have no place in democratic legal systems.

**Title: Artificial Intelligence (AI) and the Rhetorical “Technical” Means of Persuasion in Legal Argumentation**

Author: Marko Novak, Prof. Dr., Full Professor, European Faculty of Law, New University

In the area of legal argumentation, assisted-AI and augmented-AI, to some extent, have already been utilized to support legal decisions, provided that human control is in place. As long as that is the case, legal audiences can trust legal arguers to use AI as assistance to better craft their decisions and reasoning. AI can be a wonderful legal assistant; however, if it fails, the arguer should be blamed. This is the area of *logos*, dialectical and rhetorical, where AI can be successfully used in clear or routine cases (as dialectics), and to some extent, and caution, in less clear cases (rhetorically). The more the case is unclear, the less useful the assistance (AI), which is great in suggesting possibilities, but the final decision, which arguments to use, is on the master (human being). This is the area of *ethos*, where judgments are made

based on reasons of value. In this context, AI can be “ethical” only if relevant ethical standards are primarily uploaded in the application by humans. However, this is a logical (or dialectical) *ethos*, not a rhetorical one, because *inventio* (discovery) in novel situations can only be made by humans. A similar problem could apply to *pathos*. Therefore, AI always seems to be one step behind humans. At least for now, and that seems to be the only way to remain in the future.

**Title: Human Rights Protection in Algorithmic Society**

Author: Matej Avbelj, Prof. Dr., Full Professor, European Faculty of Law, New University

Europe’s traditional three-pillar system of human rights protection (national, EU, and Council of Europe) was built in an analog era, whereas today’s society is increasingly becoming algorithmic, with artificial intelligence co-constructing social reality. The presentation identifies two major paradigm shifts defining the algorithmic society: the loss of human monopoly over construction of social reality and the dominance of private actors over public institutions. In response, the Council of Europe adopted the first legally binding international Framework Convention on Artificial Intelligence, setting, inter alia, minimum standards for safeguarding human dignity, equality, and privacy. Complementing this, the EU’s Artificial Intelligence Act follows a risk-based approach, more heavily regulating artificial intelligence systems that importantly impact fundamental rights. While neither legal instrument grants new individual rights, they serve as preventive regulatory frameworks. The presentation concludes that courts will soon need to interpret human rights in light of algorithmic impacts and may themselves use artificial intelligence in decision-making. This evolution demands judicial adaptation and a comprehensive reform of legal education to integrate law with digital technologies.

**Title: Six Approaches for AI & Ethics:**

**On the Maximization of Benefit (and Minimization of Harm) in AI-Assisted Legal Decisions**

Author: Maurizio Manzin, Prof. Dr., Full Professor, University of Trento

According to Anderson & Anderson (2020) we can consider six possible approaches as relevant for the use of AI technologies in decisions dealing with ethical issues (as it is the case in – or in some of – the judicial ones). Connecting rules to principles in the Dworkin’s sense would be thus possible for AI systems in six ways, non-competitive with each other: (1) by hard-coding AI systems in order to avoid unethical choices; (2) by keeping them under a human being’s surveillance; (3) by sociologically assuming

what experts or most of people consider as just; (4) by improving existing ethical theories; (5) by imposing a hierarchy of ethical values to machine's behavior; (6) by

using machine learning for finding out ethical dilemmas' solutions in clear cases (which were shared by experts), applying them in other (less clear) cases thanks to the power of LLMs. My presentation aims at introducing a discussion about Anderson & Anderson's criticisms of the first five approaches, and their declared preference for the sixth one. My point is that a "computational gaze" (Costa, 2024) on law obtained through advanced data processing of legal decisions chosen by (prominent) ethicists – as proposed by Anderson & Anderson (2020: p. 30) – would risk to become a sort of "blessing of the accomplished fact", to say nothing of the question of the identification and balancing of benefit/harm indicated by the authors as normative, which is problematic in itself (as well as the determination of what should be "the greatest happiness for the greatest number" meant by J. Bentham and utilitarianism, and shared by the authors). In addition, another crucial issue for legal scholars would be the reduction of individual case justice the judge must provide in trial to the expectations generally shared by society and public opinion (let us think to the so called "media trials"), which would favor the so-to-say 'collectivization' of judicial decisions, even if operated by supposedly impartial machines. These ones and other implications of Anderson & Anderson's sixth approach deserve to be investigated to broaden the discussion on the relationship between AI and ethics focused on legal reasoning.

Title: **Argumentative strategies in discussing  
children's rights**

Author: Miklós Könczöl, Prof.Dr., Associate Professor, Pázmány Péter Catholic University

Children's rights have become a source ('topic' in the classical sense) of legal, ethical, and political arguments in the last decades. This paper seeks to give a systematic overview of the various types of these arguments, mapping their links and normative background, with examples. It is argued that in order to achieve consistency, one has to choose among the alternative paths available in any given situation, while efficiency may require the strategic use of several topics at the same time.

**Title: AI as a judge and the problem of designation**

Author: Radoslav Pavlinský, JUDr - Doctor of Laws, University of Pavol Jozef Šafárik

The article examines the possibility of artificial intelligence (AI) operating within a judicial system through the lens of the problem of designation. Humans tend to attribute qualities and expectations to entities based on their assigned roles. This phenomenon, which may be described as a social act of imagination, lies at the heart of law itself. In the legal world, people and things assume different functions depending on context. Judges are among the clearest examples of this. When society designates someone as a judge, a set of expectations, whether they be moral, professional, and symbolic,

accompanies that designation. The law's task is to ensure these expectations are met, particularly for a role that embodies the authority and legitimacy of the legal system. The article approaches this issue through John Searle's theory of institutional facts, which explains how certain statuses and powers exist only because people collectively recognize them. To call someone a judge is to participate in creating an institutional fact, a socially recognized status that brings with it a specific set of rights, duties, and expectations. The primary aim of the article is to explore the differences in how we treat the designation of a human as a judge versus that of an AI. This involves analyzing the legal conditions intended to ensure that human judges fulfill their designated roles and considering whether analogous conditions could meaningfully apply to AI. A secondary aim is to examine how deeply these conditions influence a judge's actual judicial activity, and whether an AI could satisfy not only the formal criteria for judicial work but also the deeper functional and ontological requirements connected to the designation. The article thus engages in three levels of analysis: formal, functional, and ontological. At the formal level, the law defines the procedures and qualifications required for the appointment of a judge. At the functional level, a judge's role involves interpretation, reasoning, and decision-making. At the ontological level, however, the act of judging presupposes self-awareness, conscience, and the ability to assume responsibility. These features belong to humans alone. While AI could theoretically meet the first two conditions through technical sophistication, such as machine learning, it lacks the ontological depth required for the third. This leads to the article's central argument: the problem of designation does not fundamentally determine whether an entity can be a judge. Even among humans, fulfilling formal criteria does not automatically ensure that the expectations connected with the assigned role are met, as the quality of judges varies widely. Moreover, people already engage in acts of designation when it comes to AI, given its ability to simulate many roles that were once exclusively human. The issue lies not in the process of designation but in the ontological dimension. AI, as currently conceived, is ontologically incapable of being a judge. It remains an algorithmic system. Sophisticated, adaptive, and useful, yet devoid of self-awareness and independent thought. Machine learning may approximate human reasoning patterns, but it cannot engage in the reflective, self-critical, and interpretive activity that

constitutes genuine judgment. Nevertheless, this does not render AI irrelevant to the judicial process. On the contrary, AI may serve as a powerful judicial tool. It can assist in research, pattern recognition, or even preliminary assessment of cases. The challenge is to maintain clarity about the boundaries between tool and authority, between calculation and judgment. In conclusion, the article argues that the limits of AI in judicial systems are not merely technical but ontological. AI cannot become a judge because of its ontological limitations, which prevent it from fulfilling the basic expectations the designation entails. In other words, AI cannot fulfill the expectations that come with being designated as a judge.

**Title: The Reproduction of Implicit Biases by Artificial Intelligence in Law**

Author: Viktor Olivér Lőrincz, Junior Research Fellow, Centre for Social Sciences, Institute for Legal Studies

Cognitive biases affecting decision-making are a major concern in the application of Artificial Intelligence (AI). Stereotypes, biases, and prejudices may emerge when AI is used in legal procedures, judicial decision-making, policing, and related fields. We argue that in most cases, these reflect the reproduction of real-life cognitive biases inherent in human decision-making, including implicit biases. Implicit biases are not consciously perceived by the decision-maker, yet they can profoundly influence legal reasoning and outcomes, particularly in cases involving discretion. We also suggest that, in some instances, it may be easier to eliminate certain biases within automated processes than in human decision-making. Given the unconscious nature of implicit biases, the difference between teaching machines and training humans raises important questions concerning human rights and fundamental liberties.

**Title: A Neuro-Symbolic Approach to Legal Reasoning**

Author: Zarja Hude, PhD Candidate,

LLMs have demonstrated remarkable capabilities in performing legal tasks (Katz *et al.*, 2023; Lai *et al.*, 2024). Yet, despite their achievements, LLMs have yet to gain widespread trust, primarily due to two critical limitations: non-determinism and opacity (Barbiero *et al.*, 2023). These limitations are not incidental but inherent to the data-driven, associative nature of LLMs. As a subset of neural AI, LLMs use probabilistic modelling, making them non-deterministic under standard settings—meaning they can produce different outputs from the same input. For hard legal questions, LLMs generate unstable answers even when the temperature is set to 0 (Blair-Stanek and Durme, 2025). This inconsistency poses significant challenges in legal contexts, where reliability is essential. Opacity, meanwhile, arises from the way decisions are made. Because the decision-making process is distributed across billions of parameters

rather than explicit rules, LLMs lack the transparency and interpretability needed to earn trust in high-stakes domains such as law.

Before the rise of LLMs, legal AI was dominated by symbolic methods that encoded legal rules and reasoning into structured, logic-based frameworks to mirror human legal problem-solving (for instance, McCarty, 1977; Rissland and Ashley, 1987; Capper and Susskind, 1988; Popple, 1993; Zeleznikow *et al.*, 1995; Al-Abdulkarim *et al.*, 2014). During this symbolic AI era, the challenges of non-determinism and opacity were largely absent. Logic-based systems operate with deterministic precision, allowing every decision to be traced back to its underlying source. Conclusions follow explicitly defined reasoning paths, providing transparency, auditability, and interpretability. Given identical inputs, symbolic systems consistently produce the same outputs—delivering a reliability that modern LLMs struggle to match.

Yet, knowledge-based systems face challenges of their own. Developing them demands significant effort to define explicit rules and construct logical pathways, resulting in rigid architectures that are difficult to scale. Unlike human reasoning, which fluidly adapts to nuance and interpretive complexity, symbolic AI struggles with the context-dependent nature of law, which resists being reduced to explicit rules and logical deductions. Consequently, many attempts at creating legal knowledge-based systems failed to gain widespread adoption or scale effectively (Leith, 2016). This is where LLMs offer a complement—their flexibility and scalability show promise in overcoming these longstanding limitations of symbolic systems.

Since neural and symbolic approaches have complementary strengths that can offset each other's limitations, their combination presents a promising direction for structuring and processing law and legal reasoning. However, there is no clear consensus on the best way to combine these approaches (see different methods in Branting, 2020; Mumford *et al.*, 2023; Nguyen *et al.*, 2023; Kant *et al.*, 2024, 2025). We examine how best to combine symbolic and neural approaches in ways that reflect legal thinking processes by revisiting legal philosophy of H. L. A. Hart (1961), and recontextualise his theory of adjudication into a neuro-symbolic design proposal where knowledge graph guides and constrains LLM in legal reasoning pipeline.

We test this approach by implementing our neuro-symbolic system on a contract law problem. To evaluate its performance, we compare the results of our system against the analysis from Anne Gardner's landmark 1987 work, "An Artificial Intelligence Approach to Legal Reasoning." The results show that our neuro-symbolic system achieves a 10x improvement in accuracy compared to using the same LLM alone, demonstrating that combining knowledge graphs with LLMs significantly enhances capabilities for the task of legal reasoning.