

AI and law

The changing nature of legal work



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The artificial intelligence (AI) revolution is now in full swing. It is difficult to think of many professions or subject areas that are not in some way being affected by AI in 2025.

While the topic of AI itself has been the subject of research and teaching within universities for many decades, there are also some well-established interdisciplinary crossover topics within AI – one of which is the field of AI and law. In fact, the International Conference on AI and Law, where experts present new research on the topic, has been taking place biennially since 1987¹ – the longest running regular conference in this area.

A key feature of the AI and law community's research is that it is undertaken to develop AI techniques and applications that specifically capture legal knowledge and reasoning; this is very different from taking AI methods developed without a specific domain application in mind and applying these to legal problems. Researchers within the AI and law community work in an interdisciplinary manner with a focus on developing computational models of legal knowledge, reasoning, and decision making, drawing on the fields of logic, machine learning, cognitive psychology, linguistics and philosophy.

Research developments

The University of Liverpool has had a prominent and sustained role in advancing fundamental research on AI and law since the 1980s. A key thread running through much of our research is developing AI techniques that can capture the knowledge and process of how legal arguments are identified, attacked and defended with legal debates – for example, when a judge evaluates the claims put forward in a legal case². These techniques to represent arguments in computational terms enable software programmes to be

developed that can advise on the strength of arguments present in legal cases, determining this through reference to the relevant legislation and the existing case law within a scoped legal domain.

Much attention has been given to known problems with AI concerning the use of 'black box' methods whereby AI tools make recommendations, but how the outcome was determined cannot be explained in legal terms. This is a particular drawback of machine learning approaches that are trained on vast quantities of data where statistical correlation between data points serves as the thrust of the learning mechanism³. One way to embed better explainability is to make use of 'symbolic AI' approaches, whereby knowledge is captured in methods that mimic human reasoning, such as through rules to be applied in a problem-solving scenario. Using these symbolic techniques in a legal setting means that legal argumentation can be conducted by the AI tool so that it can justify, in legal terms, whatever conclusion it reaches as to which arguments are the strongest in coming to its decision, and why some alternative conclusion has not been reached⁴.

However, such symbolic approaches often rely on close consultation with legal experts during the design and evaluation of legal AI methods, and thus yield the drawback that symbolic approaches do not scale easily. Accounting for the known and well documented benefits and drawbacks of different AI techniques used in modelling legal reasoning, new 'hybrid' approaches are starting to emerge that aim to combine different approaches and this is a live topic of research at the University of Liverpool⁵.

Similarly, generative AI chatbots such as ChatGPT, powered by large language models, are not a panacea for undertaking complex legal tasks, so another live area of research is developing the next wave of AI techniques that can work with generative AI to address the known capability gaps⁶.

The fundamental research developments that are being produced in academia on AI and law are now being translated into deployed products within legal practice. Recent years have seen a significant increase in collaborators being undertaken between academics and law firms to start getting AI applications used in the real world. At the University of Liverpool, we collaborate with a variety of partners from across the legal sector. Working with law firm Weightmans, for example, we successfully applied our AI models in pilots on several of their specialist domains to identify and reason about arguments relevant for decisions on settling cases⁷.

In a further three-year project supported by funding from Innovate UK, Liverpool academics worked with Fletchers Solicitors to produce an AI-based 'digital legal assistant' that provides a level of automation in assessing new medical negligence claims that the firm receives. Long hours used to be spent by lawyers and paralegals weighing up the chances of success for clients pursuing claims for serious or life-changing injuries. But with the new AI tool acting as a decision aid, staff at Fletchers can assess in seconds whether a client has a strong case. The tool is used daily, and it has transformed working practices at Fletchers, increasing efficiency and reducing costs for the company, and importantly, improving turnaround times for clients⁸.

While research and translation developments in the academic AI and law community have been accelerating over the past decade, these have been complemented by the development of industrial applications of AI and digital technologies for law, in what has become known as 'lawtech'.

Establishment of the lawtech field

Legal work covers a vast array of different tasks. The first wave of lawtech products that were developed were mostly aimed at transactional, admin-based activities, such as legal document search and process automation. Attention then turned to developing products that can take on more cognitively challenging tasks, such as analysing contracts and assessing the strength of legal cases. Recognising the potential for new tools to assist with legal work, an array of start-up companies appeared in the 2010s, establishing a visible presence of lawtech within the UK.

To provide support to this growing community, LawtechUK was established in 2019⁹. LawtechUK is a Ministry of Justice-backed initiative that commenced with a suite of activities, delivered by a growth platform for tech companies, to provide resources, programmes and courses to promote new ways of delivering and accessing legal services. The success of the initial programme of work led to continued government support, enabling a targeted range of expanded activities to be run to support growth and investment in lawtech.

A set of free, focused education programmes¹⁰ are available to support lawtech founders from ideation to scale-up, as well as to aid organisations seeking to harness the benefits of innovation for their legal operations. To foster connections between the different stakeholders in the lawtech community, a vibrant programme of events is run at locations around the UK, showcasing start-up activity and enabling discussion on current topics, such as generative AI and access to justice. LawtechUK also produces reports to gather and make available intelligence on topics relevant to the community, such as regulatory navigation, smart contracts, and adoption of machine learning. A key resource of value to the community is

their Ecosystem Tracker report¹¹, which captures hundreds of lawtech ventures across the UK, providing a breakdown of information by various filters, such as area of work, region, funding raised and funding stage.

Through its rich suite of activities, LawtechUK provides important strategic oversight of the UK's lawtech activities and supports growth of an ecosystem that is a key contributor to the UK's industrial base and economy. Having a national convening body that can support new entrants to the sector, provide network connections and demonstrate thought leadership for future development of the sector, is a vital asset to enable the advancement of the lawtech ecosystem across the UK.

What next for AI and law?

Looking to the future, the thriving lawtech ecosystem that is firmly established in the UK will be well placed to respond to the prospects and challenges that are set out with the AI Opportunities Action Plan¹² announced by the Government in January 2025. The plan urges swifter deployment of AI technologies, in both the public and private sectors, and without doubt there are many use cases present within legal work where current products and technologies can be deployed and evaluated. Given the support already provided by LawtechUK to start-ups in navigating the regulatory landscape, this important consideration is already part of the wider conversations taking place around deployment of lawtech.

The academic AI and law community is also looking at the next set of research challenges. Much of this effort is focused on deepening the explainability of AI models needed for trustworthy deployment. It is recognised that generative AI cannot be a broad-brush solution applied to all legal tasks, so researchers in AI and law are working on methods to combine different AI techniques into systems that can deploy the most appropriate techniques on different legal tasks. There is much talk about the rise of 'agentic AI', whereby AI agents, which have been under development in the field of AI for decades¹³, will start to complete tasks autonomously on behalf of a user outside

of a dialogue interaction with an AI chatbot. But developing and deploying the next wave of AI will require attention to be paid to several key issues including:

- Alignment of AI with human values
- Privacy-preservation of personal data between AI agents
- Open evaluation exercises to enable reflection on advantages and drawbacks of early pilots of new AI tools
- Consultation on, and alignment with, regulatory requirements about data use for training AI models
- Upskilling opportunities for those who will start to use AI in their daily work

Thanks to the strong communities established in academia and industry, which already work and collaborate at the intersection of AI and law, the UK is very well placed to respond to the next phase of innovation challenges.

References

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