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Editorial

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The Internet of things (IOT), big data and artificial intelligence (AI) are the basic components of the new industry and complement each other. The IOT is constantly generating data; data are economically valuable, even considered the "oil" or means of production of the twenty-first century; the processing, analysis, and utilization of data require AI. Here, there is a significant positive correlation between data and AI: the larger the scale and the higher the quality of the data, the stronger the effectiveness of AI. The huge population in China and the diversified applications in e-commerce, online finance, and mobile phones make China the world's largest data-output country with the largest scale of the big-data industry. This lays the foundation for the development of AI. The 5G mobile communication system, as a hub and device, further strengthens the interactive relationship between the IOT, big data, and AI, forming a new type of social communication and operation system with low power consumption. In addition, the culture of Japan and other East Asian countries is mostly pantheistic. They also have an optimistic and friendly attitude towards robots. Osamu Tetsuka's anime "Astro Boy" stands in sharp contrast to the terrifying and tragic atmosphere in the science-fiction movie series *Terminator* directed by James Cameron. Therefore, countries in Asia (at least East Asia) have the advantage of promoting and popularizing big data and AI.

From a legal perspective, big data and AI constitute a rule-embedded system. Therefore, Professor Lawrence Lessig points out that "code is law" several times in his classic book on Internet law, *Code*. As an extension of this proposition, algorithms are thought to be laws that can govern social actions. China's Alibaba Group launched the Sesame Credit Rating System, which shows examples of AI scoring people to determine their eligibility for loans, car rental, house purchasing, and even their employment and promotion. The Joint Punishment Mechanism of Dishonesty connects sesame credit with courts and law-enforcement authorities, which affects the judgment and implementation of law. In Singapore and South Korea, the online-trial mechanism has developed to a relatively high level. On 2 April 2019, the "Guangzhou 5G Wisdom Court Construction Strategic Cooperation Agreement" was signed, marking the official start of the construction of China's first 5G smart court. Predictive police activities, which started in Chicago, US, have been comprehensively applied in China, and their efficiency has been greatly improved due

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to the grid and three-dimensional management. However, the dispute over the "face-swap" agreement of image software company ZAO's in June 2019 and the first case of face recognition in October 2019 revealed the risks of data capture and abuse from the perspective of human-rights protection, highlighting the tension between the modern rule-of-law system and AI technology.

The above facts and social trends are the background for planning a Special Issue on big data, AI, and laws in Asia in the *Asian Journal of Law and Society*, and also show the academic value and practical significance of the topic. Since the 30th Anniversary Conference of the Oñati Institute of International Law and Sociology and the Annual Conference of the Research Committee on Sociology of Law (RCSL) were jointly held in June 2019, I hoped to organize a symposium on "Big Data, AI and Judicial Service Across Generation" and solicit contributions, which has received positive responses from Professor Zuo Weimin, Professor Cheng Jinhua, Professor Yang Li, and Associate Professor Yang Fan. In order to expand the scope of participants and make international comparisons, I sent an e-mail to Håkan Hydén, Professor Emeritus in Sociology of Law, Lund University, on 19 November 2018, inviting him as co-chairman to jointly call for papers and received his full support. In recent years, Professor Hydén has shown a strong interest in AI algorithms as a social norm, and has a strong willingness to promote collaborative research in this area between Europe and Asia. A month later, he told me that several young researchers decided to attend the Symposium with him and deliver a speech, and sent me the abstracts of the speeches by Associate Professor Stefan Larsson, Associate Professor Pedro Fortes, Lecturer Ulrika Wennersten, Postdoctoral Researcher Ekaterina de Vries, etc. For visas and other reasons, most of the Chinese-speakers were unable to attend the Oñati Conference, but some submitted papers later. All the European participants were present, which ensured the success of the two thematic sessions. To this end, I would like to pay special tribute to Professor Hayden and his team.

At the Oñati Conference held in June 2019, I met with Professor Shozo Ota from the Law School of the University of Tokyo in Japan, whom I had not seen for a long time. We discussed the possibility of conducting China–Japan collaborative research in the field of laws, big data, and AI, and I introduced the idea of a special issue in the *Asian Journal of Law and Society*. He warmly introduced the Japanese researchers Professor Katsumi Nitta and Professor Ken Satoh and promised to invite them to submit contributions. Later, he proposed that we jointly organize a group session on AI and justice, entitled "AI-Assisted Court System: How AI Can Help Judges, Lawyers and Litigants" at the Asian Law and Society Association (ALSA) Osaka Seminar in December 2019. Professor Cheng Jinhua, Yang Li, and I went to Osaka to attend the group session and delivered speeches. Speakers from Japan, in addition to Professor Ota from the law major and Professor Yoshinobu Kano from the information-science major, introduced the research findings of using judicial-examination data and legal provisions for machine learning to explore the deep structure of legal reasoning.

Based on the speeches at several group sessions of the above international symposiums, we selected eight papers for the Special Issue. Professor Håkan Hydén's masterpiece "AI, Norms, Big Data, and the Law" makes clear the theme from the very beginning by examining the significance and scope of the sociology of law research on big data and AI from a macro perspective, and puts forward such new basic concepts as technical norms that are in

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contrast to social norms, including algo-norms and the second order of normativity involving law and the order of various social subsystems, and a series of issues that have led to changes in social governance. Algorithms can affect people's daily life as norms, but people cannot influence algorithms through democratic procedures. In this sense, digital information technology, represented by AI, is a revolutionary technology that is causing profound changes in the relationship between the state and the individual. Professor Hydén believes that, in order to understand the corresponding social changes, it is necessary to promote the sociology of law research on algorithms, so as to expand the scope of theoretical frontiers and empirical analysis to explore the impact of digital technology on systems and order from the perspective of social science. The goal pursued by the modern legal order is predictability and certainty, but the networking and in-depth learning of AI make unexplainability and uncertainty major features of algorithm norms. This means that a paradigm shift must be carried out in social governance and institutional design, and more attention should be paid to the role of trial and error in the legal order. The establishment of the "Special Economic Zone" is an important invention of China's reform and opening-up. Japan has learned from this experience and applied it to the development of AI. Professor Hydén sees such a special zone (Tokku) as a "living lab" for decision-making. From the perspective of the trial-and-error process, the development orientation of AI and algorithms should not foster a regulated economy, but be market-friendly.

Associate Professor Stefan Larsson's paper "On the Governance of Artificial Intelligence through Ethics Guidelines," based on the *Guidelines for Trustworthy Artificial Intelligence* presented by the European Commission's High-Level Expert Group in April 2019 and the *European Commission White Paper on Digital Strategy and Artificial Intelligence* released in February 2020, analyzes the basic concepts, main content, and impact on the legal system of European AI governance, especially the combination of hard law and soft law. This paper focuses on the manifestation of human-centred AI governance in the social structure and interaction process, points out the main challenges of technological innovation to legal and social change, and emphasizes the relationship between big data and AI, and the need for interdisciplinary research on the transformation of social-governance paradigms. This article also cites the ethics, policies, and legal norms of AI governance in China and Japan as examples to compare the basic framework and mechanism design between Europe and Asia. On 25 May 2019, the *Beijing Consensus on Artificial Intelligence* was jointly released by Beijing Academy of Artificial Intelligence (BAAI), Beijing University, Tsinghua University, Institute of Automation of Chinese Academy of Sciences, Institute of Computing Technology of Chinese Academy of Sciences, and Artificial Intelligence Industry Technology Innovation Strategic Alliance (AITISA). From the three aspects of research and development (R&D), use, and governance, the following 15 guidelines were proposed in the *Beijing Consensus on Artificial Intelligence*: benefiting people, serving people, being responsible, controlling risks, being ethical, being diverse and inclusive, being open and sharing, using AI wisely and properly, informed consent, education and training, optimizing employment, harmony and co-operation, adaptation and moderation, refinery and implementation, and long-term planning. The Rule of Law Forum of the World Artificial Intelligence Conference held on 30 August 2019 also released the *Blue Book on World Artificial Intelligence Rule of Law* and *Guidelines for the Security and Legal System of Artificial Intelligence*. Japan's AI R&D guidelines put forward five major concepts:

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human-centred, international sharing, benefit-and-risk balance, technology neutrality, and emphasis on soft law. By comparing Europe with Asia, it can be found that the international community has reached some basic consensus on the principles and policies of AI R&D and governance.

Associate Professor Pedro Fortes's paper, "Paths to Digital Justice: Judicial Robots, Algorithmic Decision-Making, and Due Process," analyzes the impact of information technology, big data, and algorithm-based decision processes on justice, including development of legal AI such as online dispute-resolution systems, criminal recidivism risk assessment and early-warning technology, and robot judges. The author believes that, although the digitization of justice is necessary and practical, it is not necessary to radically advocate the automation of legal judgments, but to analyze and monitor the algorithm in accordance with the principle of procedural justice. To this end, he, based on the US Correctional Offender Management Profiling for Alternative Sanctions (COMPAS), reveals the systematic deviations of big data and the resulting algorithmic discrimination or otherwise in the risk assessment. He points out that the key lies in using the principle of procedural justice to avoid the algorithms' black box and the neo-collectivist labelling of convictions and sentencing, so as to ensure controllable and interpretable AI and tailored justice.

The above three papers provide a general analysis framework and an international comparative perspective. Next, we will look at the progress of research on big data, AI, and law in Asia. As China attaches great importance to the application of AI in judicial and law enforcement, with unique advantages in data collection and analysis, it has been very active in the research of this area in recent years. The papers of several scholars analyze and discuss China's experience and its theoretical significance from different aspects. Japan leads the way in the research and production of robots, and has long-term deep research on legal-reasoning expert systems and legal information technology. Singapore has hugely promoted the digitization of justice, and South Korea also has some good practice. Unfortunately, we have not found a suitable contributor for the time being. I hope we can make up for it in the future.

The paper co-authored by Japanese scholars Katsumi Nitta and Ken Satoh comprehensively introduces the Japanese experience of applying AI to the legal field. They first introduce the legal-expert-system research included in the national project of the fifth-generation computers launched in Japan in 1982, and the research project of the legal expert system initiated by Professor Hajime Yoshino in 1985, focusing on the analysis of his team's contribution to the development of algorithms for legal reasoning and an intelligent consulting system for patent law. Since 2007, JURISIN, an international workshop on legal informatics, has replaced the above projects as the main platform for AI and legal research in Japan, and, since 2014, it has jointly organized COLIEE, an innovation contest on legal informatics. This series of organized research activities developed several auxiliary AI systems to support legislation, justice, and legal services.

The paper by Chinese scholar Professor Weimin Zuo and his collaborator Chanyuan Wang examines China's judicial big data and legal research based on big data. The authors grasp the significance of big-data legal research from the perspective of legal empirical research. They believe that judicial big data such as online judgments formed in the context of transparent decision-making will become a new resource for empirical research and will cause a revolutionary change in the legal-research paradigm. However, they

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emphasize that large amounts of data and structured data after official processing are not equivalent to big data. It is necessary to pay attention to the science of the mining and analysis of big data, strengthen the correction of incomplete large amounts of data, and emphasize the complementary relationship between "small data" obtained through sampling surveys and big data, and the significance of statistical analysis, machine learning, and other methods.

My paper, "The Change of Judicial Power in China in the Era of Artificial Intelligence," focuses on calm thinking in the trend of AI. The lawsuit explosion and the unification of the legal system are important reasons for China's judicial authorities to actively adopt new information technologies such as the Internet, big data, cloud computing, and AI. From Shanghai to Guizhou, courts across the nation are trying to ease the backlog of cases by sorting out simple cases from complicated ones, verifying the maximum annual case-load of judges, strengthening assessment accountability, and adjusting the ratio of judges to trial assistants, and reduce the burden of mechanical labour and improve the speed and quality of processing materials and data by using computer information-retrieval systems and other auxiliary means. The "smart courts" are indeed conducive to improving judicial efficiency and the justice of "treating like cases alike." However, if AI is allowed to go beyond the scope of auxiliary means to try cases and even replace the judgment of judges to a large extent, it is likely to lead judicial power astray.

Practices such as allowing AI to automatically generate judgments and correct deviations of legal decisions based on big data are bound to inevitably form a dual structure of trial subjects, and even lead to the multiplexing of decision-makers. A situation in which programmers, software engineers, data processors, and information-technology companies will jointly make a decision with a judge may even appear. Once the trial subject and the decision-maker are difficult to specify, the power boundary becomes blurred, and the judicial accountability system is likely to become a matter of form; at least, the possibility of passing the buck has been greatly increased. More importantly, big data and AI will become the "guillotine" of court debates, creating an atmosphere that "everything depends on the established algorithm, while face-to-face conversational argument is not important," making China's weak legal reasoning, legal argumentation, and legal interpretations even more insignificant. This leads to a fundamental change in the structure and function of the modern judicial process.

Yaohui Jin and Hao He have proposed in their paper on "An Artificial Intelligent-Based Semantic Assist Framework to Judicial Trial" an AI-based trial semantic assistance framework based on the practice of speech recognition, text processing, and image classification in some local courts in China, allowing information extraction and machine learning to achieve coherent and consistent logic in standardized texts, case scenarios, sanction conditions, and the reasons for the judgment. The computing and characterization capabilities of AI are continuously strengthened, but the interpretability of models declines. This paper aims at the above practical issue, especially the legal issues that cause the failure of the accountability mechanism, trying to break through the bottleneck of the algorithm manipulation and provide the necessary logical interpretation for the data processing and output so as to achieve the goal of interpretable AI.

The starting point of the paper on "Big-Data Measurement-Model Research about Judges' Actual Workload in China" by Li Yang, Junlin Yi, and Hui Peng is the practical needs of increasing the number of litigation cases and the judicial staffing-system reform in China in

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recent years. In order to improve judicial efficiency and determine a reasonable number of judicial posts, it is necessary to measure and evaluate the trial workload and performance. Since cases vary in difficulty and the judicial establishment and funding vary greatly from place to place, it is very complicated to determine the number of judicial posts and assessment standards based on workload. This paper proposes a model for calculating the weight of cases and the workload of judges, especially the average annual workload based on judicial big data, through the investigation and study of the actual practice of the local courts and the analysis of the measurement standards of the Supreme Court, and tries to serve as the basis for the staffing-system reform.

The focus of George G. Zheng's paper on "China's Grand Design of People's Smart Courts" is that, while other countries are actively using information communication technology (ICT) for informal dispute resolution and focusing on the development of online dispute resolution, China is focusing on the Internet and AI to improve the formal dispute resolution, namely the judicial field. The author believes that the algorithm obviously helps to strengthen the rigidity and uniformity of the application of the law, and also strengthens the binding force of past cases under the guidance of the principle of the same judgment of similar cases. Especially in criminal trials, through the application of ICT, the processes of collection, proof, and argumentation of evidence have become more standardized, improving the precision and integration of justice. It is necessary to point out that, although there are technological innovations such as the Libra Chain agreement in judicial aspects, the overall result of legal-technology innovation is to further strengthen the inherent structural attribute of judicial hierarchy in China. Digital approaches such as big data and AI seem to make the pyramidal control of trial activity more efficient, through case assignment, performance appraisal, and judicial accountability.

The worldwide epidemic of the COVID-19 virus since January 2020 has severely impacted the global economic system and the international order. A series of emergency measures to prevent infectious diseases have suddenly made isolation and segregation a feature of daily life in today's society. Against this background, existing bureaucratic organizations appear to be in a dilemma, and emerging ICT further performs the function of pooling and distributing information, resources, and materials. In China, it is mobile payment, online shopping, takeaway, self-media, MOOC, video conferencing and online offices, etc. that have reconnected self-isolated people with quarantined people, thus forming some kind of flexible organization and virtual community, and constructing the platform of community-based governance in an interconnected manner. The investigation of travellers from epidemic areas and suspected patients, the monitoring of quarantined persons, the analysis of treatment cases, and the prediction of the development of the epidemic all require the use of big data, AI, blockchain protocols, distant thermometers, drones, and other technological means, so as to make the operation of the government more and more intelligent. In a certain sense, the outbreak of the COVID-19 virus has promoted a great transformation, and the innovation of national governance for e-government and network government is speeding up. This institutional change further proves the practical significance of our Special Issue. We hope to take it as an opportunity to further promote the application of new technologies such as big data and AI in social governance, and explore in depth the possibilities of the state- and legal-paradigm innovation.

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