# The Challenge in the Application of Artificial Intelligence (AI) To Constitutional Rights and the Judicial Process: Lessons from Germany, China, and the United States

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## Abstract

Integrating artificial intelligence (AI) into the administration of justice has emerged as a transformative development, capable of significantly enhancing the efficiency of trial processes and improving judges' performance. The resulting gains in procedural speed and workload management not only benefits judicial institutions but also fosters broader and timelier access to justice. Notable applications, such as the EU-funded Visual Analytics for Sense-making in Criminal Intelligence Analysis (VALCRI), Germany's OLGA system (an artificial Intelligence assistant system of the regional higher court of Stuttgart), and China's Smart Court system have demonstrated how AI can efficiently streamline case management, classify large volumes of data, and support decision-making processes. These exemplifications reinforce the view that AI holds considerable promise in reducing costs (time) and improving case handling within judicial systems worldwide.

However, while the capabilities of AI in judicial reform are compelling, its employment necessitates careful consideration in light of constitutional principles and human rights obligations. The very efficiency AI introduces may turn into a risk, affecting legal value (order, justice, and freedom), particularly where it intersects with equality before the law, transparency in judicial reasoning, and the protection of personal privacy. These rights are not merely abstract concepts but are fundamental

aspects of human existence, enshrined in each nation's constitutions and international law as fundamental guarantees. Thus, the integration of AI must adhere to the rule of law, ensuring that these technological advancements do not undermine human dignity and justice.

This article aims to explore the complex legal, ethical, and constitutional challenges posed by implementing AI into the judicial process. Employing comparative legal method and document-based analysis, it draws upon case studies from Germany, China, and the United States to assess whether AI can be harmoniously integrated without compromising constitutional rights. The findings highlight both the benefits, such as reduced staff burdens, enhanced access to justice, and the risks of algorithmic bias, opaque "black-box" decision-making, and a breach of privacy. And, while AI can support legal reasoning, adjudication must remain under the providence of humans. To this end, the article recommends legal safeguard mechanisms, transparency requirements, and a globally coordinated framework under the rule of law.

**Keywords:** Artificial Intelligence, Constitutional Rights, Judicial Process

## Introduction

In the past decade, competition in business and trade has led to the rapid development of information technology. The application of computer processing and real-time communications has become a fundamental factor in the operations of both the public and private sectors. The rising awareness of such technological evolution and progress has forced every industry to improve the work of their agencies to be in line with changes in information technology. The Internet is being used to conduct business and operate various devices, as we know it as "the Internet of Things". In addition, in the past few years, the computer-engineering world has introduced the use of artificial Intelligence as a tool for answering questions, processing, and providing a window to access information located around the world.

Meanwhile, in the legal field, such as the judicial process and the trial, opinions regarding the application of artificial intelligence in the legal sphere and the judicial system have been raised in various academic discussions. Moreover, some countries have initiated the introduction of artificial intelligence and applied it to the judicial process. For instance, the European Commission has funded and supported the development of the VALCRI (Visual Analytics for Sense-making in Criminal Intelligence Analysis), an artificial intelligence program to support the investigation. This system will search for information related to the case from many criminal databases, processing all the information and rearranging the different data, formats, and illustrations to be consistent with the case being investigated.[1] In addition, IBM has launched its support of the German Federal Ministry of Justice by developing an artificial intelligence called OLGA that will help classify cases. Retrieving information related to the case from databases that every agency has, and helping complete the trial faster. The use of OLGA artificial intelligence to support investigations through the ability to specify details or search criteria has allowed relevant officials to sift through thousands of documents more quickly. In addition, the system will record important information or important points regarding cases of that nature. To accelerate the search in the future, the system will be able to instantly display and cover more comprehensive information related

[1] Dominik Sacha, *Applying Visual Interactive Dimensionality Reduction to Criminal Intelligence Analysis* (London: Middlesex University, 2017), 5.

to those search terms. And, in the testing phase of the system, IBM has reported that the court trial times can be reduced by as much as 50 percent.[2] Moreover, in 2017, the State Council of the People's Republic of China (the Central Government of the People's Republic of China) formulated the development plan for the new era of artificial Intelligence, reflecting the elevation of artificial intelligence Technology into the national strategy level. Setting up a policy guideline for the research, development, and application of intelligent technology in the People's Republic of China. Also, initiating the application of artificial intelligence to enhance the capabilities of the police, procuratorial organs, and courts to enter the era of intelligent justice characterised by digitalisation, networking, and efficient processing of case-related data. Meanwhile, artificial intelligence technology has been used in the judicial process of the People's Republic of China, from investigation, examination of evidence, prosecution, to the court trial process. Security and justice departments across the country are focusing on the goal of enhancing capabilities through technology, such as the construction of smart courts, the application of perceptual artificial intelligence, and the application of cognitive artificial intelligence in deep analysis and processing.[3]

## The Era of Artificial Intelligence (AI) in the Judicial Process

As mentioned in the introduction, regarding the use of artificial intelligence in the judicial process, the developments in information technology have led to the reformation in the judicial process through the usage of artificial intelligence with legal databases covering the entire process of evidence, investigation, inquiry, trial, sentencing, and punishment. This has led to the development of computational models that can apply sophisticated analysis or techniques to answer questions related to the connection between law and facts.

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[2] Eckard Schindler, 'Judicial Systems are Turning to AI to Help Manage Vast Quantities of Data and Expedite Case Resolution' (IBM, 4 February 2025) <https://www.ibm.com/case-studies/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution> accessed on 8th August 2024.

[3] Wang Haiyan, 'AI and Administration of Justice in China' (2023) Revue Internationale de Droit Pénal (RIDP); Artificial Intelligence and Administration of Criminal Justice. Vol. 2023, 7-9.

**1. Visual Analytics for Sense-making in Criminal Intelligence Analysis (VALCRI)**

The objective of the VALCRI project is to develop a criminal intelligence analysis system for law enforcement agencies in the European region, by establishing a database in collaboration with the police authorities in the European region. The VALCRI project has carried out research and development of an integrated system at the TRL-5 technology level. Which the TRL-5[4] It is a level that runs a test in a close-to-real-world environment, using a cognitive engineering approach to create a system where humans and technology work together by combining human reasoning and data analysis with databases and machine learning technology. This application of artificial intelligence uses algorithms to distribute data, group similar data, learning from the collective data, and make decisions based on the information learned. The result is the ability to extract semi-automated human-mediated semantic knowledge, which supports and enhances the understanding of investigation and problem-solving. Moreover, in the highly ambiguous and ever-changing environment of evidence, more than 75 advanced software components are connected to process data, analyse it, and generate insights from the level of strategic intelligence to the level of tactical intelligence, and manage cases based on it. Also, to achieve this goal, the VALCRI operating system has undergone continuous evaluation and has finally been tested with 214 law enforcement officers from 50 agencies in 16 countries, as well as two international intelligence agencies: Europol and the North Atlantic Treaty Organisation Intelligence Fusion Centre (NATO IFC). While at present, VALCRI is being tested on real-world data at the London Metropolitan Police, UK, and the Pasco County Sheriff's Office, Florida, USA.[5]

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[4] สำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ ฝ่ายพัฒนาคุณภาพการวิจัย, 'คู่มือการประยุกต์ใช้ Technology Readiness Level: TRL ของสำนักงานพัฒนาวิทยาศาสตร์และเทคโนโลยีแห่งชาติ (ฉบับเผยแพร่หน่วยงานภายนอก)' (เมษายน 2559) <https://www.nstda.or.th/rqm/allmedia/category/1-pr.html?download=25:trl-ver-2-1-external> accessed on 24th February 2025.

[5] European Commission, 'Final Report Summary - VALCRI (Visual Analytics for Sense-making in Criminal Intelligence analysis)' (2018) <https://cordis.europa.eu/docs/results/608/608142/final1-valcri-periodic-report-3-28-jun-2018.pdf> accessed on 24th February 2025.

The key features of the artificial intelligence systems under the VALCRI project include:

(1) Support and encouragement of the analysis of the case by data analysts. Rather than replacing all the work of the legal data analysts, the VALCRI operating system is designed to support what the analysts do. The system focuses on completing tasks and procedures automatically and supporting the thought process of data analysts. This enables the system to respond more flexibly and efficiently to different strategies for understanding, reasoning, drawing conclusions, and problem solving.

(2) The ability to connect expert acumen with the scientific method in many investigations.

Legal data analysts often only receive partial information, and that information must be used to create an understanding of the situation and predict what might happen. The acumen of experts, therefore, plays an important role in generating tentative hypotheses that are likely plausible. However, these hypotheses may be flawed and get influenced by individual bias, so VALCRI is designed to help support the work of analysts in quickened hypotheses' testing through scientific processes. This allows analysts to easily confirm or reject hypotheses, find out if the results of the hypotheses are correct or not, reduce the chance of bias, and increase the accuracy of legal data analysis.

(3) Machines do the processing while humans do the decision-making.

VALCRI is designed to allow humans and machines to work in their respective fields. Humans are capable of making decisions in changing and uncertain situations, while machines are efficient at faster processing in repetitive and time-consuming activities. So, when analysts tell the VALCRI system to "find other case reports or files similar to this case...", the automated system using machine learning technology will searches through a vast amount of data from databases that linked with various agencies, both structured as separate documents, reports, files, etc., and unstructured such as informal texts. The system then filters, collects, and analyses the data according to the specified case formats and types. Then presenting reports that are relevant to the crime being investigated, such as case comparative analysis.

(4) Design with Ethics, Legality, and Privacy Protection in mind.

In the data analysis systems of many law enforcement agencies, when an individual's information is imported into the information network of the database. That individual's information may be linked to a personal criminal record, which the system may intrude and assess the characteristics of each individual based on their criminal record, and set a notification for "persons to be vigilant". As a result, individual may be subject to repeated inspections and searches of their personal information, even if they are not involved in committing any offenses, thus, such actions lead to a violation of privacy. VALCRI then developed under the concept of "computer transparency" to help reduce the potential risk of personal information violation. By enabling legal data analysts to set advanced control access for personal information, create computer transparency, and verify the origin of the calculated results by the algorithm, thus efficiently promoting the protection of rights and personal information privacy. Normally, the working process of an algorithm and automated operating system is subjected to a "Black Box" situation or the internal working system where the data processing step is not visible to the user.[6] The user can only input data and receive the processed output, but is unable to inspect the analysis process of the operating system or the logic used to create that output.

**2. Oberlandesgericht Stuttgart (OLG Stuttgart) – Assistant: OLGA [Artificial Intelligence assistant system of the regional higher court of Stuttgart, Federal Republic of Germany]**

Technological developments, specifically Generative Artificial Intelligence, which is a branch of artificial intelligence that can automatically weave separated data and create new content. Based on mathematical models and samples obtained through the collection of verified data, such as text, images, audio, video, or even program code. This type of artificial intelligence makes use of deep artificial neural network technology and machine learning models to produce complex results that

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[6] สำนักงานที่ปรึกษาด้านการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม ประจำสถานเอกอัครราชทูต ณ กรุงวอชิงตัน, 'ทำความรู้จักกล่องดำของโลก IT' <https://www.ohesdc.org/post/ทำความรู้จักกล่องดำของโลก IT> (2567) accessed on 24th August 2025.

are similar to human creation. Moreover, such innovative artificial intelligence systems are being promoted significantly in the Federal Republic of Germany, where this development also covers those companies or organisations that offer and introduce tech tools to help make legal procedures more efficient. And, the Federal Justice agencies of the Federal Republic of Germany have also welcomed the introduction of a Generative artificial intelligence system to further advance their judicial process. Under the idea that artificial intelligence will be very useful in managing a large number of claims or compensation cases, or cases that involve claims and compensation linked with complex business or professional standards, for example, cases related to airline passengers' rights to compensation. This has led to the initiation of several pilot projects of artificial intelligence systems that are consistent with and support the said idea. One of them is "OLGA" (Oberlandesgericht Stuttgart (OLG Stuttgart) – Assistant: OLGA), an artificial intelligence system that acts as an assistant to the regional higher courts, developed by the Higher Regional Court of Stuttgart, Federal Republic of Germany.[7]

The application of OLGA artificial intelligence to the judicial process is due to the significant increase in the number of cases involving emissions from vehicles with diesel internal combustion engines, especially cases against major car manufacturers in the country, such as Mercedes-Benz. Which, The Stuttgart Regional Higher Court alone has more than 13,000 pending appeal cases, all of which involve such emissions. Moreover, in the original judicial process, the trial relies on a process that requires a judge to manually review a large number of electronic petition documents, which is a time-consuming and repetitive task. In addition, the objective of increase efficiency and reduce the time in the trial process. The OLGA artificial intelligence system is therefore used to automatically process data, in which the system will analyse and compare newly filed cases with previously adjudicated cases. Helping judges to make an efficient initial assessment of case files, resulting in a more streamlined judicial process. In addition, under the operation of the OLGA artificial intelligence system

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[7] Antonia Hösch, Megan Schrader and Pierre G. Zickert, 'The Evolving Role of AI in German Dispute Resolution' (Hengeler Mueller, 30 January 2025) <https://hengeler-news.com/en/articles/the-evolving-role-of-ai-in-german-dispute-resolution> accessed on 4th March 2025.

that extracts data from a large database, organises data, filters and classifies petitions, and identifies cases with similar characteristics, it enables judges and officials to search and sift through a large number of documents efficiently by setting specific search criteria. This automated workflow via the system allows judges to focus on other cases that have more complex legal issues, thus reducing trial times by more than 50 percent.

In addition, the development and application of the OLGA artificial intelligence system in the trial process is in line with the trend of the development of the judicial process in the Federal Republic of Germany, which opens up opportunities and recognition of the integration of artificial intelligence into the judicial process. And, in December 2023, the European Commission for the Efficiency of Justice (CEPEJ) highlighted the OLGA artificial intelligence system in a workshop focusing on the role of artificial intelligence in justice. Discussing and emphasising the potential of the system to automate the trial process by classifying similar cases, which reduces the burden on judges from redundancy and increases the efficiency of the trial process.[8]

However, while the OLGA artificial intelligence system represents a crucial step forward in the integration of artificial intelligence into the administration of justice and trial in the Federal Republic of Germany, the use of artificial intelligence in the courts is still currently not widespread or standardised across the entire judicial process. The use of artificial intelligence in the courts is still in the pilot stage, with the expectation that broader adaptation will occur once the technology has proved its effectiveness, and when the legal framework is developed to be able to accommodate such usage. Thus, it can be inferred that the OLGA artificial intelligence system is an example of the integration of creative artificial intelligence into the judicial system of the Federal Republic of Germany, to improve the efficiency in managing the enormous number of compensation cases. Anyhow, even if the artificial intelligence technology has significant advantages in terms of managing large volumes

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[8] Sascha Dalen Gilhuijs, 'Artificial Intelligence: prominent on the agenda of the CEPEJ Plenary Meeting 4 and 5 of December 2023' (European Expertise & Expert Institute (EEEI), 20 December 2023) <https://experts-institute.eu/en/europe-of-justice/cepej-en/cepejdecember2023/?utm_source=chatgpt. com> accessed on 4th March 2025.

of data and speeding up the trial process. However, the further adaptation of artificial intelligence is still being undertaken cautiously, to ensure technological advancement will remain consistent with legal and ethical standards.

**3. Smart Court System, Perceptual Artificial Intelligence Application, and Cognitive Artificial Intelligence Application of the People's Republic of China**

**(1) Smart Court System**

The People's Republic of China is aware of the concerns of vulnerable populations (migrant workers, women, children, people with disabilities, and people living in rural areas) on the issue of equality in access to the judicial process.[9] These results in guidelines for developing the court system that focus more on the application of technological innovation. Moreover, it is believed that transforming the court into a "Smart Court" using information technology will promote the transparency and efficiency of the court's trial process, emphasising in reduction of the burden of citizens in accessing the judicial process. Coupled with the increasing use of the Internet to access online information by citizens in the People's Republic of China, leading to a surging demand to open the process of filling, petitioning, trial, and court decision to be more conveniently accessible to the public. By implementing the principles of transparency into the judicial process through the usage of internet technology, such as filing complaints or requests through the online system, publication of the entire decision and reasoning online, and live broadcast of the court proceedings.[10]

As mentioned above, the smart court system promotes access to justice and court trials to be conducted online, despite the initial focus of information technology integration was on facilitating litigants and disseminating information about judgments. Moreover, in order to ensure sustainable development along this path, in 2015, the Supreme People's Court of China launched the application of artificial intelligence

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[9] Hongyao Wu, 'People's Republic of China National Report' (Global Access to Justice Project). <https://globalaccesstojustice.com/global-overview-china> accessed on 4th March 2025.

[10] Qiang Zhou, 'Using New Media, Advancing Judicial Openness.' <http://www.court.gov.cn/zixun-xiangqing-6111.html> accessed on 5th March 2025.

systems through three online platforms[11] : China Judicial Process Information Online, China Judgments Online[12], and China Judgments Enforcement Information Online.[13]

- The China Judicial Process Information Online

The system aims to enable litigants and lawyers to track the progress of their cases. Users can log in with their registered information, such as their full name, mobile phone number, ID card number, passport number, and verification code. The online platform also provides comprehensive information, including a list of additional documents that need to be filed, which helps litigants and lawyers to complete the process of filing supporting documents for the trial.

- The China Judgments Online

The China Judgments Online is an online platform that publishes court judgments of every court in the People's Republic of China, excluding judgments that are not permitted to be published by law. The platform is thus recognised as a large source of information on Chinese law and legal practices. It also plays an important role in supporting legal studies on issues related to standards and norms in adjudication, as well as promoting the transparency of the judicial process.[14] In addition, this online judgment-publishing platform also serves as an important database for judges to refer to in proceeding with their trials. Especially in cases where related evidences are similar to previous judgments, to ensure consistency in adjudication. In addition, the legal and factual information obtained from referencing judgments published on the platform has been used in the court artificial intelligence

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[11] Richard Eric Susskind, *Online Courts and the Future of Justice* (Oxford: Oxford University Press, 2019).

[12] China Judicial Process Information Online (Webpage). <https://splcgk.court.gov.cn/gzfwww/> accessed on 6th March 2025.

[13] The Supreme People's Court. China Judgement Online (Webpage). <https://wenshu.court.gov.cn/> accessed on 6th March 2025.

[14] Wang Tingyuan, 'Big Data Legal Research Based on Judgment Document Network: Reflection and Prospect' (2020) Journal of East China University of Political Science and Law Issue 2, 64 – 70. <https://www.pkulaw.com/qikan/957b09be1ad237b32109911f5772cc1fbdfb.html?isFromV5=1> accessed on 6th March 2025.

systems developed by some local courts. For example, the Beijing Higher People's Court has developed and implemented the Wise Judge system in the judicial process. The system relies on the nationwide judgment data from the China Judgments Online publication system database to help judges in the Beijing jurisdiction draft consistent judgments. Adhering to the principle that cases with similar facts should be proceeded with and sentenced similarly. In the context of criminal trials in particular, the Shanghai Higher People's Court has developed an Intelligent Auxiliary System of Criminal Case Handling. This collects and processes a large amount of case data specific to criminal cases, stored in the database of The China Judgments Online publication system. Helping judges of various courts in Shanghai to handle criminal cases in a consistent manner with judgments in other regions of the country.[15]

- The China Judgments Enforcement Information Online is an online platform used by every court in the People's Republic of China to publish lists of parties who have failed to comply with court judgments or orders, and parties who have failed to pay compensation and recompense. By collecting information about individuals, they classified them as "uncreditable persons", and published their names and ID numbers, along with restricting their transaction ability or access to certain activities. Such as restricting their right to purchase real estate, travel by air, and travel abroad.[16] According to data released in 2019, a total of 15.91 million individuals were recorded in the database of uncreditable persons.[17] The Supreme People's Court of China has proposed measures to promote the administration of

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[15] Weimin Zuo, Chanyuan Wang, 'Judicial Big Data and Big-Data-Based Legal Research in China' (2020), Asian Journal of Law and Society Vol. 7 (2020), 495 – 514. <https://www.researchgate.net/publication/347613148_Judicial_Big_Data_and_Big-Data-Based_Legal_Research_in_China> accessed on 6th March 2025.

[16] Zhang Yong, 'AI-Assisted Case Handling and Sentencing Normalization Path' (2019) Journal of Shanghai University of Political Science and Law Vol. 2 (2019), 108. <https://www.pkulaw.com/qikan/e893152e7da617e9fc5b93c8affdce93bdfb.html> accessed on 6th March 2025.

[17] Sun Jian Tung, 'Inquiry Platform for The List of People Who are Untrustworthy in Courts Nationwide Statement' (The Huaxia Times, Domestic Finance, 22 November 2019) <https://finance.sina. com.cn/china/gncj/2019-11-22/doc-iihnzahi2667884.shtml> accessed on 6th March 2025.

justice, including the publication of the list of uncreditable persons, which helped to solve the persistent problem in the judicial process regarding the difficulty in enforcing parties to comply with court judgments or orders. In addition, the data from the list is integrated into the government's social administration process, linked to the financial and social credit system to calculate the transaction capability score of both individuals and legal entities.[18]

**(2) The Applications of Perceptual Artificial Intelligence**

The application of perceptual artificial intelligence is an important element in the development of intelligent prosecutor system. By using the technology to process data collected by artificial intelligence, through perceptive interactions with users in various aspects, for example, image recognition, alphabet recognition, voice recognition, and biometric identity recognition.

Firstly, the application of perceptual artificial intelligence in the classification of desirable behaviour and risky behaviour of probationers, via video system. For instance, the Shanghai procuratorate has applied the application that uses perceptual artificial intelligence through a video system to enhance the performance in upholding justice. By installing a video recognition system in those agencies responsible for enforcing punishment or probation[19], thus, enables the automatic identification of status and behaviour of those under punishment or probation. As well as, allowing the forecast data analysis and advance warning of behaviours that may posed risky and prone to cause problems.

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[18] General Office of the State Council Operation and Maintenance Unit, 'China Government Network. 2018 Distrust Blacklist Annual Analysis Report Released' (gov.cn, 19 February 2019). <https://www.gov.cn/fuwu/2019-02/19/content_5366674.html> accessed on 6th March 2025

[19] Caixia Zou, 'Achievements and Prospects of Artificial Intelligence Judicature in China' (2022) Chinese Studies Journal Vol.11 No.4 (2022), 197 – 227.

Secondly, the intelligent speech recognition artificial intelligence system, which is a technology developed and applied in many justice-related agencies. Such a program as the "Intelligent Speech Recognition System" developed by iFLYTEK[20], a well-known company specialised in the field of artificial intelligence and automatic speech recognition technology. The company was selected by the Ministry of Science and Technology of the People's Republic of China as one of the four leading companies in the development of artificial intelligence technology in China. The intelligent speech recognition system integrates speech recognition technology with the equipment and information systems of justice-related agencies. Enhancing their listening and recognition capabilities through speech recognition and speech synthesis technology, and automatically converts speech into text. This can improve efficiency and reduce the time required to prepare documents, skim case files, and review relevant laws. As a result, officials involved in the judicial process simply need to describe or read out the complaint or petition, and the system will automatically convert the speech into text, creating a digital document immediately.

**(3) The Application of Cognitive Artificial Intelligence**

Cognitive artificial intelligence refers to the system that possesses capabilities to deeply think, analyse, and understand the data entered into the system, similar to the human perception process. The application of such artificial intelligence in the development of the intelligent prosecutor system is to use it to study, analyse, and in-depth process case data, along with understanding the context of various aspects of that information. As a result, the intelligent prosecutor system can understand various cases, leading to the ability to learn "characteristics of general expression", or general expressions that are close to the human perception ability. As well as being able to analyse data in a way that is most similar to analysis through the human brain.[21] This results in the development of intelligent prosecutor

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[20] B X Song, 'A Brief Analysis of Intelligent Voice Technology for China's Mainstream Media Content; The Application of IFLYTEK' (2021) Journal of Physics Conference Series 1880 (1).

[21] Shu Xie, 'How Can Artificial Intelligence "Unbiasedly" Help Criminal Justice - From Evidence Guidance to Proof Assistance' (2020) Journal of Northwest University of Political Science and Law Issue No.5, 109 – 117.

systems powered by artificial intelligence at a more advanced level. An example of the usage of cognitive artificial intelligence in deep analysis and processing in the People's Republic of China is the case management robot of the Jiangsu Provincial Procuratorate, a province in the east of the People's Republic of China. The robot was developed for case management[22] is capable of comparing and analysing the data of the filing of cases or petitions, and the filing of various legal documents in the procuratorate. And, through the comparison of the characteristics of the filing and the database of previous cases or petitions, the robot can check the database that has been notified, warned, and assessed the problems of the qualifications or deficiencies of the evidence in that case. Moreover, the robot can also review the data, search for, and analyse issues in the supporting documents for the cases, and correct the initial errors in documents related to the cases.

Similarly, the Xiqing District Procuratorate in Tianjin Municipality[23] has developed a robot for office work. The robot is providing a touch-screen operation menu for handling processes or documents related to filing of cases or petitions, and has the function for interaction and communication with users through a facial recognition system, where the faces and facial features of new users are automatically registered and recognised. In addition, the robots can act as guides in case management, accept complaints/appeals, provide advice on document submission, and guide users toward the document pick-up points that are located in various departments. This leads to the reduction of workload that previously required human personnel to perform, allowing agencies to transfer staff to positions that require more skills.

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[22] Neil Connor, 'Legal Robots Deployed in China to Help Decide Thousands of Cases' (The Telegraph, 04 August 2017) <https://www.telegraph.co.uk/news/2017/08/04/legal-robots-deployed-china-help-decide-thousands-cases/> accessed on 8th March 2025.

[23] Liu Caiyu, 'DeepSeek Empowers Judicial Administration System' (Global Time, 20 February 2025) <https://www.globaltimes.cn/page/202502/1328802.shtml> accessed on 8th March 2025.

## The Challenge in the Application of Artificial Intelligence, Constitutional Rights, and Judicial Process Issues

Despite the advancement of artificial intelligence technology, concerns about the integration of artificial intelligence into the trial process or the judicial process are still controversial, that many parties cannot conclude. Although the use of artificial intelligence will make the judicial process progress faster, errors from relying on technology are still an issue that must be given importance. There is still a question that has been raised that if artificial intelligence makes a mistake in the judicial process, who will be held responsible for that mistake? Between the agency, the officer, the artificial intelligence developer, or the artificial intelligence system itself? In addition, the European Union's Artificial Intelligence Act.[24], which came into effect in 2024, has established a legal framework for the usage of operating systems related to artificial intelligence. And, classifies such systems that assist the work of agencies responsible for administering justice as "high-risk systems". This classification makes it necessary to establish risk management criteria, to reduce deviations in the exercise of discretion due to the bias of the system operator, or those who input data into the system, and potential errors in the processing of artificial intelligence conducted on such a database. Thus, it emphasizes that even though artificial intelligence systems can support the trial process, the final judgment of the case will still be subject to human discretion.

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[24] European Parliament and Council, 'Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act)' (EUR-Lex Access to European Union Law, 2024) <https://eur-lex.europa.eu/eli/reg/2024/1689/oj/eng> accessed on 10th March 2025.

**1. A matter of equality**

In theory, carrying out the judicial process according to the rule of law is considered necessary to abide by constitutional rights. The important principles in the trial were: It is a requirement that justice be fair, impartial, and effective. The rule of law is internationally recognized principle and is a necessary element to guarantee the arbitrariness and impartiality in the judicial process. And, many countries that are under the constitution have correspondingly stipulated the principle of equality that "all are equal before the law", meaning, people should not be treated unfairly and everyone should have equal protection under the law. For instance,

(1) Constitution of the Kingdom of Thailand B.E. 2560 (2017)[25] article 25

"All persons are equal before the law, and shall have rights and liberties and be protected equally under the law. ...

(2) Constitution of the People's Republic of China[26]

Prof. Dr. Udom Rathamarit and Assoc. Prof. Niyom Rathamarit[27] presented that, the Constitution of the People's Republic of China ensures that all individuals possessed Chinese nationality, are entitled to equal protection in accordance with the Constitution and the law. This includes the State respecting and guaranteeing human rights of every individual, as stipulated in the Constitution of the People's Republic of China.

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[25] รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2560 มาตรา 25.

[26] The State Council of the People's Republic of China, 'Constitution of the People's Republic of China' (English.Gov.CN, 20 November 2019) <https://english.www.gov.cn/archive/lawsregulations/201911/20/content_WS5ed8856ec6d0b3f0e9499913.html> accessed on 10th March 2025.

[27] อุดม รัฐอมฤต และ นิยม รัฐอมฤต, *กฎหมายรัฐธรรมนูญจีน* (วิญญูชน, 2558) 97.

(3) Constitution of the United States[28] Amendment XIV (1868)

Assoc. Prof. Kovit Wongsurawat presented that the 14th Amendment to the Constitution of United States, is a law concerning the rights and equality of US citizens. Although there have already been provisions in the Constitution concerning civil rights in the Bill of Rights, to further clarify this issue, the 14th Amendment to the Constitution was issued in 1868.[29]

In addition, the Charter of Fundamental Rights of the European Union provides protection and guarantees the fundamental rights of human beings to be treated equally, as stated in article 20 of the Charter of Fundamental Rights of the European Union, which states that "Everyone is equal before the law."[30]

However, even those who support the application of artificial intelligence in the judicial process promote that it will reduce bias against suspects. Anyhow, in reality, incorporating artificial intelligence into the consideration of offenses and punishments may be counterproductive. For example, the results of the court decision in a trial in 2016 that was held through the usage of artificial intelligence in the United States were published by ProPublica, a non-profit organization founded to report the investigation. In the case of an 18-year-old black female youth who committed petty theft, the AI has evaluated her as having a serious risk of reoffending and prone to committing more serious offenses. In the case of a 46-year-old white man who had previously committed the crime of robbery. Instead, he was evaluated by the system as being less at risk of reoffending and committing more serious offenses than in the case of black female youth. Or, in the case of a white man who was

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[28] United States Senate, 'Constitution of the United States' <https://www.senate.gov/about/origins-foundations/senate-and-constitution/constitution.htm> accessed on 10th March 2025.

[29] โกวิทย์ วงศ์สุรวัฒน์, 'Fourteenth Amendment (1868): บทแก้ไขเพิ่มเติมรัฐธรรมนูญ มาตรา 14 (พ.ศ. 2411)' ใน โกวิทย์ วงศ์สุรวัฒน์และคณะ (บรรณาธิการ) *สารานุกรมประวัติศาสตร์สากล: อเมริกา เล่ม 3 อักษร E – G ฉบับราชบัณฑิตยสถาน* (พิมพ์ครั้งที่ 1, ราชบัณฑิตยสถาน, 2550), 182 - 184.

[30] European Union Agency for Fundamental Rights, 'Charter of Fundamental Rights of the European Union. Official Journal of the European Union' (Official Journal of the European Union, 26 October 2012) <https://eur-lex.europa.eu/legal-content/EN/TXT /HTML/?uri=CELEX:12012P/TXT> accessed on 11th March 2025.

arrested for theft and possession of drugs such as cocaine and marijuana, who was arrested for the said offense 3 times, the system only assessed the risk of repeat offenses or prone to conduct more serious offenses at level 3. Such evaluation is lower than in the case of a black man who only had a single offense of resisting arrest (unarmed), which was rated by the system as a higher risk level of 10[31]

This phenomenon reflects problems with artificial intelligence being used in the criminal justice system in the United States. It has a long history of punishing black offenders more harshly than white offenders. While if it were a trial where a human being was the judge, they would be able to consider the occurring facts with discernment and awareness of the vulnerability of the perpetrator to prejudice against the skin colour. Nevertheless, in the case of using artificial intelligence technology, the system will only consider the information that is "Recorded in the system" which has been recorded by a database dating back many decades. Where, in those eras, the sentencing of black offenders was clouded by bias against the colour of the person's skin, and the system-processing algorithm can only use these rough data to evaluate the crimes. Such as assessing the frequency of punishments given to black people for the same offense, or how often these people were convicted of crimes. On the other hand, if they are white, the risk of repeating or committing more serious offenses is at an all-time low, while if you're not white, then the risk of reoffending or committing more serious offenses must be normally high. In addition, in the case of the 18-year-old black female youth and the 46-year-old white male mentioned above, the actual results were contrary to artificial intelligence's risk assessment. After just 2 years, a black female youth who was assessed to be at serious risk for recidivism and committing more violent offenses, was not committing any criminal behaviour or misconduct. Vice-versa, the white male who is evaluated by the system as being at low risk, instead, was prosecuted for trespassing and theft and was sentenced to 8 years in prison for breaking into a warehouse and stealing electronic products valued at more than 1000 US dollars.

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[31] Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, 'Machine Bias' (ProPublica, 23 May 2016) <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing> accessed on 11th March 2025.

Moreover, for the application of artificial intelligence technology in the People's Republic of China criminal judicial process, there are still concerns from various agencies about the impact on equal rights, especially in the trial process. The bias of the algorithmic system recorded in the database by humans, and the unverifiable nature of the algorithm (Algorithm Black Box) in the artificial intelligence system that supports the trial, such as the sentencing assistance system and the system linking the results of similar case proceeding, may lead to different levels of discrimination. That is, those who commit the same offense may be treated or punished differently, due to deviations in various characteristics that cannot be verified in the algorithmic processing process. Meanwhile, the European Union Agency for Fundamental Rights (FRA),[32] the report has pointed out that the operation of the algorithmic system may be inaccurate. Due to the internal factors of itself, or errors resulting from bias in the database that the system retrieved the information, known as "Algorithm Discrimination". This is a situation where a systematic error occurs in the process of data extraction, where the occurrence of biased information is selected repeatedly when certain characteristics of the inputs for analysing or processing are consistent with the bias. For example, the believed tendency or risk of committing an offense, of a person with a particular race, skin colour, gender, or cultural characteristics, thus leading to an unfair and unreasonable result. In this context, if the data recorder or the algorithm developer intentionally designs the program with their discretion. It may lead to the distortion or an over-control of the algorithmic system's processing, or "Algorithm Manipulation". Moreover, the bias of the algorithmic system that affects the rights of the public may expand, and result in the violation of the constitutional rights of people who are socially stigmatised as being highly probable to commit offenses. Or, whose identities are unable to be clearly identified, and in those cases where severity of the violation of rights cannot be assessed or its impact is difficult to control.

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[32] European Union Agency for Fundamental Rights (FRA), *Report on Bias in Algorithms – Artificial Intelligence and Discrimination* (Luxembourg: Publications Office of the European Union, 2022). <https:// fra.europa.eu/en/publication/2022/bias-algorithm> accessed on 12th March 2025.

Therefore, the integration of artificial intelligence technology into the judicial process not only facilitates the operation of the judiciary, but may also cause discrimination from the bias of the algorithmic system, thus violating the rights of people on the issue of equality. Due to the artificial intelligence, decisions are being made by relying on databases recorded in the system, which are data inputted from human discretion that have been recorded repeatedly over hundreds of years. Thus, the data that artificial intelligence processes will surely reflect humanity's success or failure, fairness or injustice, and equality or bias. This makes the application of artificial intelligence in the judicial process risky, as the core principle of the judicial process may be neglected and not recognised. Because the equal treatment of all groups is being neglected from the system's processing, as the system sees such discrimination as "normal", such as the high frequency of verdicts against offenders with a certain skin colour. On the other hand, a society that upholds justice must strictly implement the judicial process under the rule of law and the principle of constitutional rights that guarantees the equality of individuals. With the aim to eliminate the effects of characteristics, which a person cannot choose, or is born with, or believes in (gender, skin colour, nationality, race, religion, etc).[33]

**2. A matter of transparency**

Concerns regarding court hearings and court decisions using artificial intelligence arise from the argument that artificial intelligence cares about results (verdict or ruling and punishment) rather than a process (administration of justice, fact-finding, etc.). The application of artificial intelligence in facilitating justice must start from the creation of a system that is able to take into account the various elements in the divergent scenarios of the case. However, those in the legal field do not have the expertise to develop artificial intelligence, thus making it necessary to rely on those with specific technological expertise who can create such a system. Tech experts, on the other hand, are not legally literate enough to know and uphold the rule of law and adhere to these principles in screening data that will be integrated into the database in the development of artificial intelligence. This paradox during the development of artificial intelligence results in problems in which artificial

[33] Jason Gabriel, *Toward a Theory of Justice for Artificial Intelligence* (Daedalus, 2022) 151.

intelligence can construct results, but is unable to demonstrate the legal basis of such processing under the rule of law, thus leading to a condition called a "Black box in the judicial process".[34]

However, the trial, verdict, and decision of the case especially criminal cases or cases related to rights and duties, still have to abide by important principles: the trial must be conducted publicly, and the verdict or decision of the court as well as the personal opinion of the judge or justice must be able to explain that results. This principle has been stipulated under the International Covenant on Civil and Political Rights (ICCPR), Article 14, first paragraph, which states, "All persons shall be equal before the courts and tribunals". In the determination of any criminal charge against him, or of his rights and obligations in a suit at law, everyone shall be entitled to a fair and public hearing by a competent, independent and impartial tribunal established by law. The press and the public may be excluded from all or part of a trial for reasons of morals, public order (*ordre public*) or national security in a democratic society, or when the interest of the private lives of the parties so requires, or to the extent strictly necessary in the opinion of the court in special circumstances where publicity would prejudice the interests of justice; but any judgement rendered in a criminal case or in a suit at law shall be made public except where the interest of juvenile persons otherwise requires or the proceedings concern matrimonial disputes or the guardianship of children."[35] Together with Punya Udchachon,[36] who presented about the Constitution of the United States, in the Amendment VI (1791), which is amendment to guarantee the rights in criminal prosecutions where the accused shall enjoy the right to a public trial. Meaning, "In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial, by an impartial jury of the State

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[34] Frank Pasquale, *'The Black Box Society: Algorithms That Control Money and Information'* (Harvard University Press, 2015), 38 – 42.

[35] สำนักงานคณะกรรมการสิทธิมนุษยชนแห่งชาติ, 'กติการะหว่างประเทศว่าด้วยสิทธิพลเมืองและสิทธิทางการเมือง (International Covenant on Civil and Political Rights – ICCPR)' (สำนักงานคณะกรรมการสิทธิมนุษยชนแห่งชาติ, 2 กุมภาพันธ์ 2567). accessed on 14th March 2025.

[36] ปัญญา อุดชาชน, 'สิทธิและเสรีภาพของพลเมืองอเมริกันภายใต้หลักประชาธิปไตย' (เอกสารวิชาการส่วนบุคคล หลักสูตรนิติธรรมเพื่อประชาธิปไตย, สำนักงานศาลรัฐธรรมนูญ 2557), 18.

and district wherein the crime shall have been committed, which district shall have been previously ascertained by law, and to be informed of the nature and cause of the accusation; to be confronted with the witnesses against him; to have compulsory process for obtaining witnesses in his favor, and to have the Assistance of Counsel for his defence."

Moreover, in the context of Thailand, the right to enjoy public trial was previously recognised in the Constitution of the Kingdom of Thailand B.E. 2550.[37] Article 40, which stated that "A person shall have the following rights in the administration of justice: ... (2) the fundamental rights in legal proceedings, in respect of which fundamental assurances must be accorded as to the openness of trial, adequate opportunities to receive information and examine documents, the submission of facts, arguments and evidence, the challenge of judges, trial by judges of a duly constituted quorum and reasoned decisions, judgments or orders;". However, the Constitution of the Kingdom of Thailand B.E. 2560 (2017)[38] has ruled out said article, but Thailand legal system still guarantees the right to a public trial in secondary legislation. For instance, the Criminal Procedure Code article 172, first paragraph, states that "A trial and examination of evidence in a court shall be conducted openly in the presence of the defendant, unless otherwise provided.", and article 186 (6) states that "A judgement or order shall at least contain the following important particulars: (6) The reasons for decision both on questions of fact and of law"[39]

As well as, The Organic Act on Procedure of the Constitutional Court B.E. 2561 (2018), article 59, first paragraph states that "A hearing of the Court shall be open to the public, except where deemed appropriate to maintain order in the courthouse's vicinity, or to protect the public interest, the court has the power to determine the persons allowed to remain in the trial room."[40] These demonstrated that the transparency and publicity in Thailand's judicial process are of significant importance.

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[37] รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2550.

[38] รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2560.

[39] ประมวลกฎหมายวิธีพิจารณาความอาญา พุทธศักราช 2477.

[40] พระราชบัญญัติประกอบรัฐธรรมนูญว่าด้วยวิธีพิจารณาของศาลรัฐธรรมนูญ พ.ศ. 2561.

Because, according to the above legal principles, the criteria regarding the elements of the court proceedings and the statement of judgment have been established, that it must include reasons and results in deciding the case, both in matters of fact and in matters of law as well as the consideration of the case must be done publicly.

Therefore, if artificial intelligence is to be applied to the judicial process while there is still a black box situation going along, court hearings and pronouncements of verdicts or decisions would inevitably face obstacles and problems. As in the process of deciding the case, the judgment or verdict in that case must be able to explain: what elements caused the court to issue such a verdict, order, or ruling? Mandatory application of artificial intelligence in the judicial process without being aware of these problems will cause the trial to lack transparency. Moreover, it is contrary to the principles established in the international principles of the International Covenant on Civil and Political Rights (ICCPR), contrary to or contradicting the provisions of the Criminal Procedure Code, as well as causing problems in appealing the court verdicts or orders. The litigant was not aware of the reasons that caused these verdicts or orders.

**3. A matter of privacy**

The introduction of technology into court proceedings has changed traditional court proceedings, which has affected the rights of citizens involved in the case. In particular, in the criminal judicial process, the defendant's right to defend himself is based on the presumption of innocence and equality between the plaintiff and the defendant. May face obstacles from the application of information technology, in conjunction with artificial intelligence, in the process of the Smart Court system. In the aspect that the court proceeding has changed from a semi-closed system to a system that is fully open to the public. This resulted in the court being influenced or pressured by external factors that are not directly related to the trial process, such as influence from the cabinet, mass media, public demands, or criticisms from academics. These factors may lead to high pressure on judges, investigators, witnesses, and other officials involved in the case. Moreover, the impact of mass media on the court proceedings may also reduce or undermine privacy right of a trial of defendants and other involved parties in the case. Thus, this makes it even more essential to

set limits on the disclosure of trial proceedings in the context of applying smart courts or e-courts, Also, courts should take into consideration parties, whether they want to be revealed in online trials or want to be broadcast.[41]

In addition, the Constitution of the Kingdom of Thailand B.E. 2560 (2017), article 32 states that "A person shall enjoy the rights of privacy, dignity, reputation and family. An act violating or affecting the right of person under paragraph one, or an exploitation of personal information in any manner whatsoever shall not be permitted, except by virtue of a provision of law enacted only to the extent of necessity of public interest."[42] And, the International Covenant on Civil and Political Rights (ICCPR)[43] has specified the right of privacy as one of a type of personal right, which means that it is the right of an individual to live a private life peacefully. Without being subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honour and reputation. Moreover, every individual has the right to be protected by law against such interference or attacks. Thus, the right of privacy which is part of personal privacy, must be protected by law, and such information shall not be infringed, disturbed, known, collected, used, or disclosed unlawfully.

Moreover, in the transition of the court trial process into an electronic and online system, it is necessary to collect and access the personal information of citizens involved in the case, which affects the right to privacy of the involved citizens. Therefore, publicly disclosing the relevant case's information online or inputting personal information in the internet system will inevitably lead to the disclosure of the citizen's personal information. At the same time, the reliance on platforms

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[41] Yang Zhou and Wei Xei, 'Research on the Conflict and Coordination Between the Right to Privacy and the Right to Know Thoughts Caused by a Case' (2021) Journal of Advances in Economics, Business and Management Research Vol. 649, 393 – 402.

[42] รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2560.

[43] United Nations, 'International Covenant on Civil and Political Rights – ICCPR' (1996) Article 17 "1. No one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence, nor to unlawful attacks on his honour and reputation. 2. Everyone has the right to the protection of the law against such interference or attacks."

for case management and litigation is driven by modern information technology, as well as artificial intelligence using big data systems that support the trial, where most of the data is collected, stored, and used. It is questioned about the issue regarding transparency of access to that data, and may lead to problems of unlawful collection of personal information.[44] Accompanied by the study report presented to the Council of Europe by Prof. Rob van den Hoven van Genderen, a professor and lawyer specializing in artificial intelligence law.[45] This pointed out that technical investigative measures relying on modern technology and artificial intelligence to process the case without the suspect or the person being investigated being unaware of such action. May pose a risk to the arbitrary and unchecked use of those technical investigative measures. Moreover, the nature of the incident or activity for which the information is sought out has not yet been clearly considered to constitute a criminal offense. Accessing personal information through such technical investigative measures may directly violate the citizen's right of privacy. Thus, the violation of the citizen's or an individual's right of privacy from such measures may lead to more serious consequences than the traditional investigative measures.

## Conclusion

The fact that artificial intelligence can support in-depth information to assist the case trial, analysis, and process the previous cases data relevant to cases under consideration. Enabling those involved in the judicial process to determine the outcome of similar cases also helps judges in understanding and knowing about the possible impact of their judgements, resulting in a more consistent and fairer trial proceeding. In addition, artificial intelligence technology can help promote universal access to

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[44] Ayush Kumar Verma and Krishnan Ramanathan, 'Data Privacy Preservation in Digital Forensics Investigation' (AIP Conference Proceedings, 03 October 2022) <https://www.researchgate.net/publication/364143483Data_privacy_preservation_in_digital_forensics_investigation> accessed on 22nd March 2025.

[45] Prof. Rob van den Hoven van Genderen, 'Cybercrime Investigation and the Pro'tection of Personal Data and Privacy' (Council of Europe, 25 March 2008) <https://rm.coe.int/16802fa3a3.> accessed on 22nd March 2025.

justice by providing low-cost legal assistance through intelligent interaction systems (Chat Bot), case management robots, smart court systems, and online platforms. This allows the general public, especially vulnerable groups, the disadvantaged, and those living in rural areas, to gain convenient access to the judicial process and legal assistance. Moreover, application of artificial intelligence to agencies whose responsible for routinely and repetitively administering activities relevant to the judicial process, such as document verification and case management. Instead of deploying human personnel to perform such menial tasks, while enables the rotation of human personnel to work in other positions that require special expertise or discretion to make a decision, resulting in the reduction of delay in the trial process.

Furthermore, security services and justice agencies are required to establish certain measures to regulate the appropriate usage of artificial intelligence, to protect citizens' constitutional rights. As the application of artificial intelligence in legal and judicial contexts comes with ethical challenges, it affects the administration of justice in the entire system. From judges, prosecutors, investigators, court officials, lawyers, litigants, all stakeholders, and the state itself, both in terms of readiness and capability to cope with the complexity in case adjudication, through the application of artificial intelligence as a supporting tool. Because if the artificial intelligence system is not being carefully examined in various crucial elements, such as the system developer, data entry operator, database, and the discretion of those involved in that artificial intelligence system. And, lead to biased data being inputted into the processing database, thus, posing a risk to the fairness of the trial, owing to the fact that such an artificial intelligence system may reflect social bias that prevailed from the past legal information. Thus, making use of the diverse and appropriate data sets, database auditing, and regular tuning of artificial intelligence algorithms are essential toward the solution and reduction of risks in bias embedded in the databases.

However, the application of artificial intelligence in the judicial process still requires the development of a system that can provide a reasonable cause and effect, regarding the legal issues that need clear separation. Between the information that is still disputed and unable to reach a clear conclusion, and the information that lawyers see eye to eye on the issue. As well as the trial process in the court

system must be clear, and still rely on discretion in considering the cases. Therefore, there may not be any instruction in an artificial intelligence system that can link the two elements together to simulate court decisions with pinpoint accuracy. Also, since the court has a duty to consider cases in a reasonable manner, consistent with facts and legal provisions. Thus, the decision of judges is a complex matter, requiring legal expertise, experience, emotional fortitude, morality, and ethics as the main elements in interpreting legal provisions in the consideration of the cases. As we are unable to ignore the human "Right to make their own decision", even if the law is a crucial process in the social system, it is also a process in the system that is subject to human decision-making. Thus, the judges will surely realize when to strictly enforce the law, when to show compassion, when to exercise restraint and reserve. Because after all, law, judicial process, and artificial intelligence are all things that humans made, and things that are made by human will always harbor the thoughts and discretions of the human creator.

In conclusion, even though the artificial technology has developed exponentially, and can support the judicial process with increased efficiency. However, human oversight of the system and review of the results of artificial intelligence analysis, to ensure that the cases in consideration are ethical, fair, and transparent, are still essential. Even though an artificial intelligence system may be able to improve the consistency in adjudication, by referencing previous cases' verdicts and reducing trial times. However, it's still unable to eliminate concerns in the reliance on algorithms, which may be tainted with biases from developers, database operators, and relevant stakeholders. And, potentially lead to the perpetuation of disparity and inequality in the justice system. Therefore, to achieve the goal of integration of artificial intelligence into the judicial process, continuous vigilance is necessary to reduce the risk of artificial intelligence taking biases from the database into the processing of cases. Also, upholding ethical standards that prioritize constitutional rights and social justice, through carefully addressing the above challenges, could we achieve the ideal of harnessing the usefulness of artificial intelligence in safeguarding constitutional rights, promoting justice, and creating a more equitable legal system for all citizens.

## บรรณานุกรม


**<u>ภาษาไทย</u>**

**กฎหมาย**

รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2550

รัฐธรรมนูญแห่งราชอาณาจักรไทย พุทธศักราช 2560

ประมวลกฎหมายวิธีพิจารณาความอาญา พุทธศักราช 2477

พระราชบัญญัติประกอบรัฐธรรมนูญว่าด้วยวิธีพิจารณาของศาลรัฐธรรมนูญ พ.ศ. 2561

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