The Need for Artificial Intelligence in Solving Unsolved Criminal Cases and Sentencing in Malaysia

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ABSTRACT

As humans, it is common for judges to give wrong verdicts when making decisions, especially in criminal cases. As such, those who feel that they have been wronged by the courts will thus appeal against the decisions. Due to the sheer volume of appeals, it has resulted in a backlog of cases. However, there is no one solution to solve the problem other than calling the judicial officers to improve themselves with legal knowledge before the real use of Artificial Intelligence in legal policy. In the current digital era, it is believed that Artificial Intelligence can accelerate and automate the review of potential evidence in identifying the most relevant and accurate evidence. With the help of Artificial Intelligence, it will reduce court unsolved cases. Countries such as the United States of America, Colombia, and China have started implementing Artificial Intelligence in their respective judicial systems. Yet Singapore's criminal courts have no plan to use Artificial Intelligence in sentencing. Therefore, it has raised questions like should Malaysia's judicial response to the use of Artificial Intelligence in cracking those backlog criminal cases and how far could it go in helping the judges. This paper seeks to highlight the issues.

1. Introduction

Artificial Intelligence (AI) is a digital tool born from the combination of science and engineering of making intelligent machines, and the technology functions within the

presentation of ordinary computer programs.[1] Computer science creates a system that can replicate human intelligence and the ability to solve problems.[2] It calculates the percentage of our future demand on similar matters by collecting a myriad of data from the past and then analysing it repeatedly to calibrate its accuracy.[3] It cannot be denied that it has significantly advanced and is revolutionising in various aspects, with no exception to the legal sector. In the legal field, AI is used with the hope of hastening the progress of solving cases, especially cold ones because it can search for extra information that is enabled to be seen or found by the naked eye, and so reveal the truth at the time.

The important reason to implement AI in solving cases is that the technology could fill in the justice gap that has always persisted and reduce the errors made in courtrooms. AI has been commercially offered for applications such as due diligence, prediction technology, legal analytics, document automation, intellectual property, and practice management.[4] The use of AI in aiding judges has become a reality when countries like the United States of America, Australia, and China use AI to pass sentences against an accused. The AI system makes recommendations to the judges based on big data analysis of case information and previous judgments in similar cases.[5] Malaysia tends to follow in its footsteps and in 2020, the Courts in East Malaysia ventured into the use of Artificial Intelligence (AI) to analyse data and trends for the sentencing of selected criminal offences under the leadership of the former Chief Judge of Sabah and Sarawak.[6] The Chief Judge of Sabah and Sarawak Tan Sri Datuk Seri Panglima David Wong Dak Wah said:

> The use of AI machines will only act as a guideline to the judicial officers in coming to his or her decisions. In embracing AI, we are fully aware that the use of AI does not breach the rule of law. We will disclose the algorithm in which the machine operates. What the judicial officers do is put the key in all past judgments of the courts into the application which has all the algorithms or formulas to understand, and diagnose the dispute, and then provide a solution to the dispute.[7]

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[1]   John McCarthy, 'What is Artificial Intelligence?' (2007) <https://www-formal.stanford.edu/jmc/whatisai.pdf>.

[2]   'What is the history of artificial intelligence (AI)?' (*Tableau Software*) <https://www.tableau.com/data-insights/ai/history>.

[3]   ibid.

[4]   Daniel Faggella, 'AI in Law and Legal Practice: A Comprehensive View of 35 Current Applications' (*Ernerj*, 7 September 2021) <https://emerj.com/ai-sector-overviews/ai-in-law-legal-practice-current-applications/>.

[5]   Alena Zhabina, 'How China's AI is automating the legal system' *DW* (20 January 2023) <https://www.dw.com/en/how-chinas-ai-is-automating-the-legal-system/a-64465988>.

[6]   'Artificial Intelligence (AI)' (*e-Kehakiman Sabah and Sarawak*) <https://ekss portal.kehakiman.gov.my/portals/web/home/article_view/0/5/1>.

[7]   Bernama, 'Sabah, Sarawak to use AI tools in judicial decision-making process' *New Straits Times* (Kuching, 17 January 2020) <https://www.nst.com.my/news/nation/2020/01/557497/sabah-sarawak-use-ai-tools-judicial-decision-making-process>.

Next, talking about the judges' decision-making in the judicial roles, the idea of using AI in the judicial system has been criticised by experts on its lack of transparency and discretion, the potential for programming bias, and its inability to empathise. Juan David Gutierrez, who is a professor of public policy and data at Universidad del Rosario said that we should not place robot judges to play important roles in the courtrooms because human judges do not always know the limits or risks.[8] Although China has been devoting significant resources to developing technologically advanced courts and legal assistants, it still appears that the role of human judges in judicial decision-making is irreplaceable by the robot judges.[9] Prof Bennett Moses, who is the director of UNSW Allen's Hub for Technology, Law, and Innovation and a Professor and Associate Dean (Research) in the Faculty of Law and Justice at UNSW Sydney also agrees with the statement.[10] She admits that AI might improve efficiency and fairness in decision-making, but she also advises that judges should not be too dependent on technology. It is because the AI system might appear to have programming errors and the possibility of the erosion of judicial power by technology companies and capital, thus, it needs to pay more attention to how AI is used in the justice sector. Furthermore, the defence counsels may raise the argument that their clients have been wrongfully arrested, as the AI technologies have wrongly detected him or her as the offender. Therefore, it is necessary to find solutions to enhance judicial justice, which can also help to track down criminal cases.

Hence, this paper seeks to highlight some of these legal and practical issues regarding whether Artificial Intelligence should be used widely in Malaysia's judiciary. The article will be split into two parts. The first part is to discuss the issues of using modern technologies in solving criminal cases, for example, the use of facial recognition, voice analysis, and many other new technologies. The application of AI technologies in cracking unsolved cases will also be discussed in the first part. The second part will discuss the issues of to what extent AI should be used to aid judges in decision-making.

2. How AI Worked in Unsolved Criminal Cases

Criminal cases that have gone cold are the bane of law enforcement officials worldwide. The poor adoption of technology in the legal field is one of the reasons that frustrated the capability of law enforcement officers to search for more evidence, which allows the real offenders to escape from justice. Due to the poor investigation system, some criminals, who are smart enough to hide incriminating evidence, are hardly to be apprehended by law enforcers. Most of the unsolved crimes are murder mysteries, disappearance, and rape cases. Therefore, many police departments have begun to use AI in the investigation of these cases.

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[8] Adam Smith and others, 'Are AI Chatbots in Courts Putting Justice at Risk?' *New Straits Time* (7 May 2023) <https://www.nst.com.my/opinion/columnists/2023/05/906525/are-ai-chatbots-courts-putting-justice-risk>.

[9] Yan Jie, 'China's Courts Look to AI for Smarter Judgements' *Sixth Tome* (18 November 2016) <https://www.sixthtone.com/news/1584>.

[10] Dawn Lo, 'Can AI Replace a Judge in the Courtroom?' *UNSW Sydney Newsroom* (1 October 2021) <https://newsroom.unsw.edu.au/news/business-law/can-ai-replace-judge-courtroom>.

One classic example can be seen in a case, that happened in New Jersey, Mark Himebaugh's disappearance over 30 years ago.[11] The law enforcers are positive that with the help of AI technology to collect fresh evidence related to Himebaugh's case. The employment of AI in this case is hopefully what will lead to the victim's family's closure. However, not all unsolved cases are allowed to use AI technology. In the horrific rape and murder case of eight-year-old Nurin Jazlin[12] is one of the most famous unsolved criminal cases in Malaysia. No AI technology was found in this case, despite Nurin's father tirelessly requesting the police to reopen the case and investigate it using the latest technology. In this case, the girl went missing for several weeks after she went to a night market and her corpse was found in a black & and blue gym bag. The parents denied the corpse was their child because there was no injection mark on the child's body. However, the DNA test results showed that it was Nurin. Also, there was an enhanced version of her kidnapping video, but the CCTV video still could not help the investigation. Sadly, no further update for the case as the police decided not to reopen. Time, cost, and lack of knowledge are the factors for not reinvestigating the case. The accuracy of the result is also a challenge to the police. Although the use of AI may have its limitations, it is still also offering new perspectives on various cases.

DNA evidence could be the most powerful piece of evidence to locate and convict a suspect at the scene. In Georgia, genetic genealogy has been used to solve high-profile cold cases. The genealogy test is used to build the DNA profile by using the DNA databases to match unidentified remains. The databases are contributed by people who had independently submitted their DNA to websites to find relatives or track their hereditary history.[13] The weakness of the test is consent must be given by the users first before accessing their profiles by the authorities.[14] Moreover, people could still be escaping the punishment if there are two similar DNA results, and it happens to twins. Nevertheless, it is suggested that the defect of DNA can be solved by AI algorithms. As an example, an overlooked drug case that occurred in 2009 in Malaysia, involved two brothers. The highlight of this case is that the twin brothers dodged the death penalty just by having similar DNA.[15] The arresting officer was confused between the two and could not tell the twins apart. Even DNA results could not solve the case because the brothers share very similar DNA. Hence, the case remains unsolved until today as the police could not figure out which brother was the actual culprit behind the crime. Similar cases have happened all around the world, not only in

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[11] 'Police Hope Artificial Intelligence Can Help Solve 1991 Cape May County Cold Case' *CBS News Philadelphia* (Cape May County, 25 May 2023) <https://www.cbsnews.com/philadelphia/news/mark-himebaugh-cold-case-ai-cape-may-county-crime/>.

[12] Debble B, 'The Horrifying Rape, Torture Murder of Eight-Year-Old Nurin Jazlin Jazimin' (*TrueCrime Diva*, 31 January 2023) <https://truecrimediva.com/nurin-jazlin-jazimin/>.

[13] April Rubin and Remy Tumin, 'In a 1988 Murder, DNA Is Used to Identify Both the Victim and Her Killer' *The New York Times* (7 September 2022) <https://www.nytimes.com/2022/09/07/us/chahorski-killer-georgia-identified-dna.html>.

[14] ibid.

[15] 'Identical Twins Escape Death Penalty' *The Star* (Kuala Lumpur, 6 February 2009) <https://www.thestar.com.my/news/nation/2009/02/06/identical-twins-escape-death-penalty/>.

Malaysia. However, a study has proved that twins do have similar DNA, but they are not identical.[16] The only way to arrest the right person is through their fingerprint. However, the AI Facial recognition systems may have been considered a useful tool in identifying the twins.

Not only in identifying the twin, but AI technology is also now used to work as a detective to read the mind of a serial killer. The AI, named CARMEL, and its creator have created a legacy by breaking a secret unsolved code called the Copiale Cipher.[17] The achievement is gained from the data provided by the Zodiac Killer, a famous serial killer who loves to play code games. The study has to start with collecting data related to serial killers. In Chicago, the experts are concerned about a serial killer strangling women and they used the same technique. Currently, their AI technology can identify several 'suspicious clusters' of murder activity which it reported to the FBI for investigation. The AI technology is also able to discern specific types of patterns, such as gang activity or other types of killings, and connect them.[18]

3. Artificial Intelligence in Solving Criminal Cases

We are surrounded by the idea of innovating new technology as part of the forensic sciences. This is because there are some successful examples of using AI to bring unsolved cases to book. This has given the legal field a glimmer of hope to rely on the aids of AI technology in searching for new information. However, law enforcement officials should also be aware of its disadvantages and not use it abusively.

AI does not create new ideas in investigating, but grades information in the files for unseen clues, global positioning, trace evidence, and even chemical analysis.[19] In the future, the entire Malaysian judiciary may consider using new technologies such as AI Facial Recognition, AI Voice Recognition, AI systems in polygraph tests, and even GPT-4 in unfolding a case. To build confidence in the use of AI, a transparent process, freedom for all parties to the trial, and a well-founded decision are needed.[20]

3.1 AI Facial Recognition

Facial recognition is a technology capable of matching facial features from a photograph or video and then comparing the information with a database. It identifies and confirms an

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[16] Jan Dumanski, 'Identical Twins Not as Identical as Believed' (*Eureka Alert*, 15 February 2008) <https://www.eurekalert.org/news-releases/622324>.

[17] 'Tristan Greene, 'AI Is Unravelling the Mysteries of the Serial Killer Mind' (*The Next Web*, 7 December 2017) <https://thenextweb.com/news/ai-is-unraveling-the-mysteries-of-the-serial-killer-mind>.

[18] ibid.

[19] Denise Simon, 'How Can AI Help Real-Life Cold Case Files?' (*Mind Matters*, 24 February 2020). <https://mindmatters.ai/2020/02/how-can-ai-help-with-real-life-cold-case-files/>.

[20] Mahyuddin Daud, 'Artificial Intelligence in The Malaysian Legal System: Issues, Challenges and Way Forward' [2022] 1 INSAF: The Journal of the Malaysian Bar 7.

individual's identity using the faceprint data that has been stored in the system to measure the distance between one's eye or face shape. It could also provide high accuracy in detecting faces even when they are partially covered with medical masks or clothes.[21] More tests are carried out to enhance low-quality facial images, for example when an individual is looking away from the camera or is blocked by lamp posts. During the COVID-19 outbreak, the application of facial recognition technology was expanded to track the movement of individuals who are COVID-19 infected person.[22]

In 2018, the government of Malaysia made its move to launch facial recognition technology for national security and entered into agreements with Chinese companies, such as Yitu Technology and Huawei Technologies.[23] Since then, the government has become more confident in implementing such technology. Penang has become the first state to install facial recognition technology into CCTV to help fight crime.[24] The technology can be used in various functions by law enforcement, which include surveillance, mugshot matching, and finding missing persons.[25] The new system used in Penang was derived from an American multinational information technology company. The implementation of a facial recognition system, which uses AI to recognise faces captured by CCTVs will be covered in several sectors, which include airports, hotels, car rentals, and retail.[26]

In India, facial recognition technology with AI system helped police to find over 3000 missing children within four days.[27] In addition, a man who had committed the crime of sexually assaulting a minor was apprehended in Oregon after 16 years, when the suspect sought to acquire a US passport.[28] Similarly, another old case of sexually assaulting a minor

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[21] Erica Kastner, 'Can Facial Recognition Detect You With A Mask?' (*SOS Can Help*, 31 July 2020) <https://www.soscanhelp.com/blog/can-facial-recognition-detect-you-with-a-mask>.

[22] Sangmi Cha, 'S Korea to Test AI-Powered Facial Recognition to Track COVID-19 Cases' *Reuters* (Seoul, 13 December 2021) <https://www.reuters.com/world/asia-pacific/skorea-test-ai-powered-facial-recognition-track-covid-19-cases-2021-12-13/>.

[23] CK Tan, 'Malaysian Police Adopt Chinese AI Surveillance Technology' *Nikkei Asia* (Kuala Lumpur, 18 April 2018) <https://asia.nikkei.com/Business/Companies/Chinas-startup-supplies-AI-backed-wearable-cameras-to-Malaysian-police>.

[24] Opalyn Mok, 'Penang Launches Country's First Facial Recognition Cctv Surveillance' *Malay Mail* (Georgetown, 2 Jan 2019) <https://www.malaymail.com/news/malaysia/2019/01/02/penang-launches-countrys-first-facial-recognition-cctv-surveillance/1708422>.

[25] Indrajeet Singh and Kumar Amritanshu, 'The Use of Facial Recognition Technology by Law Enforcement and Its Impact on Civil Liberties' (*Legal Service India E-Journal*) <https://www.legalserviceindia.com/legal/article-10277-the-use-of-facial-recognition-technology-by-law-enforcement-and-its-impact-on-civil-liberties.html>.

[26] Beh May Ting, 'Installing a Facial Recognition System at Penang Airport: A Necessary Step to Ease Travel Protocols' (*Penang Institute*, 23 September 2021) <https://penanginstitute.org/publications/issues/installing-a-facial-recognition-system-at-penang-airport-a-necessary-step-to-ease-travel-protocols/>.

[27] PTI, 'Delhi: Facial Recognition System Helps Trace 3000 Missing Children in 4 Days' *The Times of India* (New Delhi, 22 April 2018) <https://timesofindia.indiatimes.com/city/delhi/delhi-facial-recognition-system-helps-trace-3000-missing-children-in-4-days/articleshow/63870129.cms>.

[28] Jake Parker, 'Facial Recognition Success Stories Showcase Positive Use Cases of the Technology' (*Security Industry Association*, 16 July 2020) <https://www.securityindustry.org/2020/07/16/facial-recognition-success-stories-showcase-positive-use-cases-of-the-technology/>.

in the York Area of the United States was solved by using facial recognition software to detect the identity of the suspect, whose identity remained a mystery for a few years.[29] All these successful stories have shown that the information given by AI facial recognition software is reliable and helps experts make precise judgments.

3.2 AI Voice Recognition

Voice Recognition is the method that enables a computer to recognise and respond to spoken words, and then convert them into a format that the machine understands.[30] This technology can identify the speaker with its gender, age, and emotion. It can mimic human behaviour by learning from its environment.[31] Voices are analysed by experts trained in linguistics through the process of auditory analysis and acoustic analysis.[32]

Auditory analysis is the process of breaking the speech down into various parts and analysing each part carefully by listening to the specific sounds, while acoustic analysis is the process of examining speech using computer software to look at images of spectrograms. The voice quality, pitch and amplitude, speed of speaking, level of fluency, and vocabulary are the factors in detecting the speaker. However, AI voice recognition is not as efficient as facial recognition. The voice databases are also much smaller than a database of DNA and fingerprints. Although AI voice recognition is not yet at its peak potential, the technology has helped investigators verify Osama bin Laden's videos and locate gunshots, which affect the authenticity of a tape recording.[33]

3.3 The AI system in Polygraph Test

The polygraph test is also called a lie-detector test. The theory of the test is to measure physiological arousal factors, including heartbeat, pulse rate, blood pressure, respiration, skin conductivity, and perspiration.[34] Sometimes, it will also record arm and leg movement. The AI system in the polygraph test will be much better than the traditional polygraph test, as it can analyse micro-expressions, changes in voice pitch, and other subtle cues that an

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[29] Julie Bosman and Serge F Kovaleski, 'Facial Recognition: Dawn of Dystopia, or Just the New Fingerprint?' *The New York Times* (New York, 18 May 2019) <https://www.nytimes.com/2019/05/18/us/facial-recognition-police.html>.

[30] Gnani Marketing, 'Speech Recognition Ai: What is it and How Does it Work' (*Gnani AI*, 31 October 2022) <https://www.gnani.ai/resources/blogs/ai-speech-recognition-what-is-it-and-how-it-works/>.

[31] ibid.

[32] Amelia Gully and others 'How Voice Analysis Can Help Solve Crimes' (*Frontiers*, 14 February 2022) <https://kids.frontiersin.org/articles/10.3389/frym.2022.702664>.

[33] Dina Temple-Raston, 'Voice "Fingerprints" Change Crime-Solving' *NPR* (28 January 2008) <https://www.npr.org/2008/01/28/18479095/voice-fingerprints-change-crime-solving>.

[34] 'How Does a Lie Detector (Polygraph) Work' (*Howstuffworks*, 15 December 2023) <https://science.howstuffworks.com/question123.htm>.

expert might miss.[35] The AI-powered systems detect patterns of movement typically associated with deception.[36]

The classic example of an AI polygraph test is EyeDetect, which relies on the belief that liars will show more signs of cognitive load than truthtellers.[37] The EyeDetect has a camera used to pick up these subtle signs as it captures the interviewee's eye dilation, movements, and response time. The accuracy rate of EyeDetect reaches 86% of correctness, but more tests should be carried out to ensure its accuracy.[38] In May 2018, the EyeDetect test was admitted by judges in a federal district court in New Mexico as evidence on behalf of the defendant in a criminal trial.[39] In this case, the judges voted not to convict the accused, who was charged with raping a minor, based on the EyeDetect test. After this first case study, many attorneys in the United States tried to use the EyeDetect test as evidence, and the final decision was given to the judge to decide.[40]

3.4 GPT-4

GPT-4 can be said to be the combination of all the above technologies. Its capabilities extend to various forensic techniques, including fingerprint and facial recognition, age progression, toxicology, digital forensics, and biological evidence analysis.[41]

GPT-4 has broader general knowledge, and what makes GPT-4 more fascinating is its medical and non-medical applications in crime solving. GPT-4 can be employed in DNA analysis for identifying suspects and establishing connections between victims and offenders. The more advanced ChatGPT system consists of an OpenAI system, which can detect images and voices.[42] On the other hand, it can be used to analyse large amounts of text data in non-medical contexts, including social media posts, emails, and online forums, discover hidden connections between suspects and victims, and identify potential motives and plans. By leveraging AI, GPT-4 provides smart policing solutions that can identify

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[35] Marcin Frackiewicz, 'The Integration of AI in Forensic Psychology: Current Applications and Future Possibilities' (*TS2 Space*, 26 August 2023) <https://ts2.space/en/the-integration-of-ai-in-forensic-psychology-current-applications-and-future-possibilities/#gsc.tab=0>.

[36] Jake Bittle, 'Lie Detectors Have Always Been Suspect. AI Has Made the Problem Worse' *MIT Technology Review* (13 March 2020) <https://www.technologyreview.com/2020/03/13/905323/ai-lie-detectors-polygraph-silent-talker-iborderctrl-converus-neuroid/>.

[37] ibid.

[38] ibid.

[39] Jeff Pizzino, 'US District Court Allows EyeDetect Lie Detector Test Results As Evidence for First Time' (*Converus*, 19 April 2018) <https://converus.com/press-releases/u-s-district-court-allows-eyedetect-lie-detector-test-results-as-evidence-for-first-time/>.

[40] ibid.

[41] Harvey Castro, 'Revolutionizing Crime-Solving With AI: How ChatGPT-4 Can Unlock Critical Evidence in Unsolved Cases' (*KevinMD*, 27 April 2023) <https://www.kevinmd.com/2023/04/revolutionizing-crime-solving-with-ai-how-chatgpt-4-can-unlock-critical-evidence-in-unsolved-cases.html>.

[42] Alec Radford and others 'ChatGPT Can Now See, Hear, and Speak' (*OpenAI*, 25 September 2023) <https://openai.com/blog/chatgpt-can-now-see-hear-and-speak>.

potential hotspots for criminal activities, by analysing historical crime data and other relevant information for crime prevention.[43]

The potential of GPT-4 in criminology will continue to develop and improve. GPT-4 can personalize individual preferences and behaviour, providing actions and responses after reading the mind.[44] Moreover, AI could be used to enable law enforcement and psychological profiles of criminals for the judicial officers to have a better understanding of the motives and patterns of behaviour of offenders. This could have tracked a case down more quickly.

4. AI in Sentencing

As AI can make faster decision-making and fewer errors than a human judge, many countries have started welcoming this incorporation of technology into their judicial system. However, some countries worry that it may lead to judicial injustice and biases if relying too much on AI systems in the ruling.

Countries like Colombia and Estonia have piloted a 'digital' judge in their courtroom. A judge in Colombia uses ChatGPT in making a judgment for a case of an autistic boy's medical funding, and the results given by ChatGPT are correct.[45] However, the judge also used precedents from old rulings to support his decision. The reason for using AI tools is to improve the effectiveness of Colombia's overburdened court system. Similar to Estonia, the 'robot mediator' is built to reduce the court's workload, including its administrative burden. However, Estonia does not use AI robot judges for small dispute cases, and the country has no intention to replace the human judge.[46]

Despite being criticised by many experts, the China government still implements AI judges in their judicial system. Chinese Supreme Court has developed a 'similar case' system, which offers the judge information about sentences in cases that are similar to the one before him or her.[47] The AI judge has helped the court to solve simple cases, such as financial disputes and traffic accidents.[48] This system was named as Xiao Baogong Intelligent Sentencing Prediction System, which helps in suggesting penalties based on big data

[43] Marcin Frackiewicz, 'Chatgpt-4 for Smart Policing: Ai-Powered Crime Prediction and Prevention' (*TS2 Space*, 9 April 2023) <https://ts2.space/en/chatgpt-4-for-smart-policing-ai-powered-crime-prediction-and-prevention/>.

[44] Youssef Fenjiro, 'ChatGPT & GPT 4, How It Works?' (*Medium*, 17 April 2023) <https://medium.com/@fenjiro/chatgpt-gpt-4-how-it-works-10b33fb3f12b>.

[45] 'Colombian Judge Uses ChatGPT in Ruling' *The Star* (Bogota, 3 February 2023) <https://www.thestar.com.my/tech/tech-news/2023/02/03/colombian-judge-uses-chatgpt-in-ruling>.

[46] Maria-Elisa Tuulik, 'Estonia Does Not Develop AI Judge' (*Republic of Estonia Ministry of Justice*, 16 February 2022) <https://www.just.ee/en/news/estonia-does-not-develop-ai-judge>.

[47] Yanru Chen, 'Similar Case Retrieving: Does China Move Towards Case Law? Guiding Cases & Similar Cases Series' *China Justice Observer* (16 January 2021) <https://www.chinajusticeobserver.com/a/similar-case-retrieving-does-china-move-towards-case-law>.

[48] ibid.

analysis of case information and prior judgments from similar cases based on factors the judge has chosen.[49]

It consists of huge databases and will only collect the data of recent similar cases so that the punishment might not go wrong. Not only that, judges in China must consult an AI system before passing a sentence.[50] They are forced to submit a written explanation if they disagree with the judgment. The intention to do so is to unify national jurisprudence, as there are 'significant differences in regional development, governance, and income.'[51]

In the United States, the courts use algorithms to calculate a person's potential risk to commit a crime. They use Risk Assessment tools during the pre-trial and sentencing stages. It is a tool designed to attempt to predict criminal future behaviour and quantify the risk. They read through socioeconomic status, family background, neighbourhood crime, employment status, and other factors to reach a supposed prediction of an individual's criminal risk.[52] They passed the sentence based on the scale from 'low' to 'high' or with specific percentages.[53]

Unlike the United States and China, France kicks out legal AI companies to analyse their decisions in extreme detail to create a model. The government of France prohibits the company from analysing the judges' decisions, and a maximum of five years imprisonment will be imposed on the rule breaker.[54] The reason is to prevent any 'black-boxed' activities done by the AI companies, as the court cannot produce the data itself. In addition, it can avoid the commercialisation of judicial decision-making data.

Singapore is also one of the countries that is not likely to use AI systems in sentencing. The reason given by the Singapore government is that the underlying algorithms are opaque, and there is a risk of bias on the offenders, as they do not have an opportunity to test the data and assumptions that underlie them.[55]

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[49] ibid.

[50] Chris Pleasance, 'China Uses AI to 'Improve' Courts—With Computers "Correcting Perceived Human Errors in a Verdict" and Judges Forced to Submit a Written Explanation to the Machine if They Disagree' *Daily Mail* (13 July 2022) <https://www.dailymail.co.uk/news/article-11010077/Chinese-courts-allow-AI-make-rulings-charge-people-carry-punishments.html>.

[51] Matthias Bastian, 'Judges in China Must Justify Every Ruling to an AI: Report' (*The Decoder*, 17 July 2022) <https://the-decoder.com/judges-in-china-must-justify-every-ruling-to-an-ai/>.

[52] Ben Winters, 'Artificial Intelligence and Human Rights: AI in the Criminal Justice System' (*Electronic Privacy Information Center*, September 2020) <https://epic.org/issues/ai/ai-in-the-criminal-justice-system/>.

[53] ibid.

[54] 'France Bans Judge Analytics, 5 Years in Prison for Rule Breakers' *Artificial Lawyer* (4 June 2019) <https://www.artificiallawyer.com/2019/06/04/france-bans-judge-analytics-5-years-in-prison-for-rule-breakers/>.

[55] 'S'pore Not Likely to Use AI in Sentencing in Foreseeable Future: Chief Justice' *The Star* (Singapore, 31 October 2022) <https://www.thestar.com.my/aseanplus/aseanplus-news/2022/10/31/spore-not-likely-to-use-ai-in-sentencing-in-foreseeable-future-chief-justice>.

However, AI has walked into East Malaysian court since February 2020. The system will only apply in criminal cases involving possession of drugs and sexual offences, as those offences hold sufficient databases for AI to operate.[56] A recent case of *Public Prosecutor v Denis P Modili*,[57] this case has created a new history in Malaysia's judiciary system, in which AI was used in the sentencing process. When the case was appealed to the High Court against the sentencing passed by the Magistrate, the sentence was subsequently reduced, and no reason was given as to why the High Court gave a lesser sentence.[58]

Now, the question that arises here is whether Malaysia should apply the AI system in the judicial system. It can never be denied that the AI-based judicial system has solved the problem of judges passing different sentences to similar cases in Malaysia, such as drug cases.[59] By looking at the positive side, similar cases can be settled faster and quicker. Judges could allocate more time to harsh cases, especially murder cases. Besides, several efforts have also been taken in Peninsular Malaysia. On 22 July 2021, the Office of the Chief Registrar of the Federal Court of Malaysia issued a press statement releasing the sentencing guidelines for AI to be implemented in the Sessions courts and Magistrates' courts.[60]

However, in reality, there were a total of 67% cases, where judges departed from the AI sentencing recommendation. Reasons for the deviation included accounting for mitigating factors that the algorithm had not been designed to consider and the recommended sentence not being considered a strong deterrent. Moreover, the AI system did not contain an algorithm that can recognise the level of rape victims suffering from psychological distress. It can only reply 'yes' or 'no', but the fact is all victims suffer psychological distress. Recognising these weaknesses in the AI system, the Sabah and Sarawak judiciary has thus far only used the AI tool as a guideline. The final sentencing decision is still in the hands of human judges.[61]

5. Issues Arising from Using AI

With the growing demand for AI in various fields, people should be fully aware of its disadvantages. Since it carries big databases, the potential risk of profiles being stolen or

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[56] Rina Chandran, 'As Malaysia Tests AI Court Sentencing, Some Lawyers Fear for Justice' *The Star* (Bangkok, 12 April 2022) <https://www.thestar.com.my/tech/tech-news/2022/04/12/as-malaysia-tests-ai-court-sentencing-some-lawyers-fear-for-justice>.

[57] *Public Prosecutor v Denis P Modili* [2020] 2 Sessions and Magistrate Court 381 (MC).

[58] Dennis WK Khong and Chiung Ching Ho, 'Case Commentary: Artificial Intelligence in Malaysian Courts: PP v Denis P Modili' (2022) 2(2) Asian Journal of Law and Policy 127, 128 <https://doi.org/10.33093/ajlp.2022.9>.

[59] Janet Toh and others, 'Artificial Intelligence 2023' (*Shearn Delamore & Co*, 30 May 2023) <https://practiceguides.chambers.com/practice-guides/comparison/995/10934/17688-17690-17692-17698-17701-17706-17708-17711-17715-17717-17734-17737-17744-17746-17749-17753-17758-17760>.

[60] ibid.

[61] Claire Lim and Rachel Gong, 'Artificial Intelligence in the Courts: AI sentencing in Sabah and Sarawak' (*Khazanah Research Institute,* 18 August 2020) <https://www.krinstitute.org/assets/contentMS/img/template/editor/200821%20AI%20in%20the%20Courts%20v3_02092020.pdf>.

falling into the wrong hands cannot be ignored. The ethical concerns of AI are the main reason where the dissenting voices come from. Although the new technology could used to reduce human workload, it may still cause problems such as infringement of privacy, misuse of technology, and lack of accuracy on the data provided.

5.1 Privacy Concerns

A breach of one's right to privacy is a tort matter. In the case of *Toh See Wei v Teddric Jon Mohr*,[62] the right to privacy was defined as the right to be alone, the right to be free from unwarranted publicity, and the right to live without undue interference by both the government or any private individual. The 'right to privacy' is recognised as a basic human right in Article 12 of the Universal Declaration of Human Rights 1948 and Article 17 of the International Covenant on Civil and Political Rights. In Malaysian legislation, the fundamental rights and liberties of an individual are governed under the supreme law of the land.[63] This can be seen in *Sivarasa Rasiah v Badan Peguam Malaysia*,[64] where the right to privacy has been recognised as one of the fundamental liberties protected under Article 5(1) of the Federal Constitution. However, the protection given by law is very limited. Personal Data Protection Act 2010 is the only statute that governs data privacy in Malaysia. The application of the statute is narrow as it is only applied to personal data privacy, but does not include privacy rights. In *Ultra Dimension Sdn Bhd v Kook Wei Kuan*,[65] it was held that the invasion of privacy rights would only be actionable in Malaysia if the content was so highly offensive in nature. As we know, AI has enabled organisations to collect, store, and process massive amounts of data at unprecedented rates. Hence, there is a risk that when vast amounts of personal data fall into the wrong hands, it can be published or widespread on the Internet to be used for identity theft or cyberbullying.

5.2 Misuse of Technology

One of the dangers of using AI technology is the risk of unauthorised access to personal information. 7 principles must be adhered to when processing personal data, which are the General Principle; Notice and Choice Principle; Disclosure Principle; Security Principle; Retention Principle; Data Integrity Principle, and lastly the Access Principle.[66] The unauthorised use by the data users could further lead to a more serious type of cybercrime. The technology companies and capital that provide the technology to the government may cause erosion to the judicial system. The companies may have the possibility to infringe on the privileged information stored in the system. The whole programming process should be questioned and the reports of the results must be submitted regularly to the government.

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[62] *Toh See Wei v Teddric Jon Mohr* [2017] 11 Malayan Law Journal 67 (HC).

[63] Federal Constitution, art 5(1).

[64] *Sivarasa Rasiah v Badan Peguam Malaysia* [2010] 2 Malayan Law Journal 333 (FC).

[65] *Ultra Dimension Sdn Bhd v Kook Wei Kuan* [2001] Malayan Law Journal Unreported 751 (HC).

[66] *Genting Malaysia Bhd v Pesuruhjaya Perlindungan Data Peribadi* [2022] 11 Malayan Law Journal 898 (HC).

This is because there is a risk of entering wrong information into the AI system. AI can be misused by people who have bad intentions to destroy a person. For example, an innocent person could be charged with guilt when the AI system identifies him as a wrongdoer by interpreting the wrong information given. Hence, many countries still not taking the bold step to introduce AI judge into their legal framework.

5.3 Accuracy of the Technology

AI errors are human errors, as all datasets introduced in AI algorithms to generate results are human data, which may pass on human bias in AI results.[67] Research has also shown that bias and discrimination can happen on AI, where certain groups of people are more frequently searched by law enforcement than others, causing unfairness to particular groups of people.[68] Wrongful arrest by AI is not a fresh issue to be discussed. Many stories AI facial recognition has detected the wrong person as the offender. It can be fooled. As such, in 2019, IBM announced that it would no longer provide Face Recognition Software to avoid the issue of racial bias and privacy concerns.[69]

Besides, AI systems may also make errors in passing sentences against an accused. In China, some controversial cases have been removed from the government database, amid public outrage over the lax punishment of alleged perpetrators.[70] This raises concerns about the ability of artificial intelligence to make unbiased decisions based on fragmented data. Also, AI can be used to make decisions without any human input or oversight. This can cause errors in applying the law and making decisions that are not in line with ethical standards.

6. Suggestions and Solutions

The entire procedure of processing data from its collection to the use of such data must be done with caution. It is essential to ensure that the process is done in compliance with the Personal Data Protection Act 2010 and General Data Protection Regulation. The General Data Protection Regulation will be applied when it involves any business conduct in the

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[67] Asma Idder and Stephane Coulaux, 'Artificial Intelligence in Criminal Justice: Invasion or Revolution?' (*International Bar Association*, 13 December 2021) <https://www.ibanet.org/dec-21-ai-criminal-justice>.

[68] Alexander Babuta and Marion Oswald, 'Data Analysis and Algorithmic Bias in Policing' Royal United Service Institute for Defence and Security Studies (2019) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831750/RUSI_Report_-_Algorithms_and_Bias_in_Policing.pdf>.

[69] Jay Peters, 'IBM Will No Longer Offer, Develop, or Research Facial Recognition Technology' *The Verge* (9 Jun 2020) <https://www.theverge.com/2020/6/8/21284683/ibm-no-longer-general-purpose-facial-recognition-analysis-software>.

[70] Echo Xie, 'Millions of Court Rulings Removed From Official Chinese Database' *South China Morning Post* (26 Jun 2021) <https://www.scmp.com/news/china/politics/article/3138830/millions-court-rulings-removed-official-chinese-database>.

European Union.[71] Since the law that governs data privacy is limited, more regulations should be enforced. A specific regulation is needed to avoid discrimination and infringement of fundamental rights. At the same time, the Personal Data Protection Act 2010 and the Communications and Multimedia Act 1998 should be amended so that it also regulates the application of AI.

Besides, the amendment of the law should strike a balance between protecting public safety and the commercial demand of the private sector in Malaysia. Recently, a significant move has been taken by the European Union (EU) Parliament towards protecting individual privacy in the age of AI, by banning the use of AI surveillance in public areas, except in cases where there is a specific public security threat.[72] Previously, the European Commission proposed the Artificial Intelligence Act on 21 April 2021, to enhance the transparency of the work of AI.[73]

AI technology is a useful tool to solve unsolved criminal cases. Some old cases could have been solved by using more advanced AI technology. In a recent American case, the police are using AI to search for an 11-year-old boy, Mark Himebaugh, who went missing in 1991.[74] If the police manage to solve the case, it will bring light to the investigators. It is humbly suggested that Malaysia could implement more advanced AI technologies in helping judicial officers to solve criminal cases. The ethical issue should also be considered when using AI. Therefore, the government should consider the computer science education syllabus to incorporate ethics.

However, law enforcement officers should be aware of the admissibility of the evidence to be adduced in court. It was humbly suggested that the government should list out a list of reliable companies that produce AI technology, and only allow certain AI products to be used in court. Other than that, AI certificates generated by the company should be given in court if the company's AI technology is used in searching for new information.[75] This is to be in line with Section 90A of the Evidence Act.

Moreover, the police and targeted experts should attend training to understand how AI is functioning, before conducting investigations and tests using AI technologies. All the practices should be carried out with due diligence. Their name should be registered under the law to prevent the misuse of AI technologies and to ensure they will not be used abusively by law enforcement officers.

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[71] 'Protection of Employee's Personal Data in Malaysia—General Data Protection Regulation ('GDPR') and Personal Data Protection Act 2010 ('PDPA')' (*Skrine*, 23 November 2020) <https://www.skrine.com/insights/alerts/november-2020/protection-of-employee%E2%80%99s-personal-data-in-malaysia>.

[72] Mark van Rijmenam, 'Privacy in the age of AI: Risks, Challenges and Solutions (*The Digital Speaker*, 17 February 2023) <https://www.thedigitalspeaker.com/privacy-age-ai-risks-challenges-solutions/>.

[73] Asma Idder and Stephane Coulaux, 'Artificial intelligence in criminal justice: invasion or revolution?' (*International Bar Association*, 13 December 2021) <https://www.ibanet.org/dec-21-ai-criminal-justice>.

[74] '1991 Cape May County cold case' (n 11).

[75] Evidence Act 1950, s 90A.

High punishment may be given to the offender if he or she is found to have committed a crime using AI technologies. There should be an agency organised to monitor the practice of AI technologies in the courtroom. The Criminal Procedure Code should have provided for the use of AI courts, as Sabah and Sarawak Courts have implemented AI systems in sentencing. However, it is suggested that the system can be used to assist judges in complicated cases. Advanced security systems must also be launched to protect the legal databases.

7. Conclusion

In conclusion, AI technologies bring benefits to the legal world, but it is only used as an assistance in aiding law enforcement officers to search for evidence. Any use of AI technologies in the judicial system, such as implementing AI in sentencing still needs further study and research. The Malaysian government should not jump on the bandwagon without further investigation. Our stand is to apply a wait-and-see approach.

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