Idder A., Coulaux S.♦

Artificial intelligence in criminal justice: invasion or revolution?

Abstract: Although the use of AI in criminal justice is meant to fulfill fundamental legal principles such as public order and security, it can also create negative externalities by amplifying pre-existing prejudices and errors, and consequently undermine the efficiency of justice and law enforcement.

AI is not yet a mature technology in many of its applications. Criminal justice, and primarily law enforcement, shall then consider the use of AI not only in light of fundamental human rights principles such as privacy and non-discrimination, but also in light of the growing belief that AI algorithms are more objective and intelligent than humans, when in fact they can actually convey human error.

Keywords: artificial intelligence; justice; IT-technologies; criminal proceedings; criminality.

<u>Introduction.</u> From Homer's Iliad to 20th century science fiction movies, through Da Vinci's humanoid robot [5], artificial intelligence (AI) has been a subject of humankind's dreams for centuries.

Although the notion of AI has started as a fantasy, sometimes even dystopian, like Spielberg's film Minority Report which depicts a worrying future of advanced technologies in law enforcement, AI is now a reality in daily life, and has shifted human lifestyles. Cars, phones and even healthcare are just some examples of sectors which AI has penetrated.

Considered as a branch of computer sciences, AI refers to the building of 'smart' machines, able to perform human tasks by mimicking human attributes, intelligence, and reasoning, but without direct human intervention.

Within the last two decades of research [7], AI has been improved to the point at which it can outperform human abilities. This includes AlphaGo, the first computer program to defeat, in the last decade, the world's greatest player of GO, a 3,000-year-old Chinese complicated thinking game [2].

AI has even penetrated the formal functions of the state, from taxation (e.g., the UK program Connect), to border security, and even public order. Such use by government is partially explained by the latest trends. Crime, for instance, has become 'high-tech', as criminal groups have exploited technology from its earliest days to the latest trends of cryptocurrencies and cybercrimes.

Concern about disparities between criminals and law enforcers, criminal justice had to be equally equipped and prepared to leverage technologies such as AI to improve crime prevention and control. More specifically, AI is used in law enforcement and courts of justice for better, faster results with a highly reduced margin of error, due to the absence of human input.

Although the use of AI in criminal justice is meant to fulfill fundamental legal principles such as public order and security, it can also create negative externalities by amplifying pre-existing prejudices and errors, and consequently undermine the efficiency of justice and law enforcement.

♦ **Idder Asma** - CMG Avocats & Associés, Paris (France). E-mail: idder@cmglegal.net
Coulaux Stephane - CMG Avocats & Associés, Paris (France). E-mail: coulaux@cmglegal.net

AI in criminal justice, the perfect tool?

Brief history of AI. The earliest significant study of AI began in the mid-20th century, by Alan Turing, a British mathematician and logician, known for breaking the German Enigma machines' encryption during the Second World War. Considered as one of the founders of computer science and artificial intelligence, Turing was the first to wonder whether machines could use information to imitate humans in problem-solving and decision-making [10]. Turing's paper and its Turing Test formed the ultimate goal and vision of AI.

A few years later, John McCarthy [4], a US researcher and professor of mathematics, coined the term of 'artificial intelligence' that he defined as the 'science and engineering of making intelligent machines'. However, there is no universally consensual definition of artificial intelligence as AI is an interdisciplinary science combining multiple approaches, and multiple study fields such as sociology, cognitive sciences, and mathematics.

Use of AI. Criminal justice has recently turned to AI to improve its outcomes, cut crime, and reduce justice-related delays as research showed that AI could be a permanent part of the criminal justice ecosystem, through investigative assistance [9]. The use of AI can be readily noticed in both law enforcement and courts of law, as a prevention and prediction tool, but also as a crime-solving and recidivism tool.

Through video and image analytics, AI is used to improve law enforcement outcomes, by reducing time-consuming tasks and human error. AI facial recognition skills can establish the identity and whereabouts of an individual, considerably improving crowd surveillance results.

AI facial recognition assesses clothing, skeletal structure, and body movements in order to detect abnormal or suspicious behaviour among masses, such shoplifters or dangerous drivers breaking traffic laws. It also helps with vehicle identification as AI programs are taught to decipher number plates even with poor resolution or low ambient light. Several governments have already allowed the use of AI in law enforcement, such as the Canadian police [6].

AI can be very helpful in detecting traffic accidents through closed circuit television (CCTV) surveillance, and online-related crimes including human trafficking, money laundering, fraud and sexual abuse.

By detecting suspicious activities, AI can prevent crimes, and help investigators identify suspects more rapidly, ensuring stronger public safety and increased community confidence in law enforcement and criminal justice in general.

AI also has a significant use in courts of law. Through crime-solving and from a scientific viewpoint, AI improves forensic laboratories and investigators in DNA testing and analysis by processing low-level or degraded DNA evidence which could not have been used a decade ago. Furthermore, decades-old cases have been reopened to submit sexual assault and homicide cold case evidence for perpetrator identifications. Such use of AI decreases unsolved crime which strengthens civilians' sense of trust in justice.

Another application of AI is predictive justice, which is the statistical analysis of a large amount of case law data – mainly previously rendered court decisions – in order to predict court outcomes. This can help judges focus their time on cases for which their expertise has a higher added value. In the long term it can strengthen justice stability worldwide by offering economic players more harmonised court decisions, therefore helping better anticipation.

AI can also predict recidivism by analysing hundreds of thousands of criminal justice-related data to predict new offences of absconding offenders. Such AI application can be very useful for

practitioners in warrants services, increasing fines recovery and allowing a more optimised resources allocation which, in the long term, helps the aim for swifter wheels of justice.

Transition. Around the world, criminal justice uses different resources such as IT technology to limit felonies and crimes. With Schumpeter's theorised technical progress and its creative destruction, it would seem odd for the criminal justice sector not to assess AI's potential contribution and utility.

However, AI is merely a tool, and since a tool is only as good as its user, it is important to evaluate potential negative externalities of AI uses in criminal justice, to avoid any counterproductive consequences such as bias and errors.

Risks of AI use in criminal justice. AI is not yet a mature technology in many of its applications. Criminal justice, and primarily law enforcement, shall then consider the use of AI not only in light of fundamental human rights principles such as privacy and non-discrimination, but also in light of the growing belief that AI algorithms are more objective and intelligent than humans, when in fact they can actually convey human error.

Bias and discrimination. Although AI modus operandi excludes any human intervention, it is created by humans, and in such regard, it implies a certain room for error. All datasets introduced in AI algorithms to generate results are human data, which mean they already contain human bias, which are then passed on in AI results.

Independent research reports show that the use of AI can lead to certain groups of people being more frequently stopped and searched by law enforcement than others, for instance, depriving citizen of fairness and egality and equity principles [1].

For example, AI surveillance of criminal 'hotspots' can actually increase geographical discrimination, as those areas are more controlled by police than other areas, which results in higher arrests in such AI-monitored areas.

It is important to underline that databases used by law enforcement are actually private companies, such as Clearview, the world's largest facial network company created for law enforcement use. Although Clearview is contractually bound to governments, it implies a partial transfer of certain regalian functions of the state to private companies, which could lead to other negative outcomes, such as a poisoned database or cyberpiracy, which would infringe privacy rights principles of hundreds of thousands of citizens.

Need for regulation. To avoid discrimination and fundamental rights infringement, the use of AI in law enforcement implies a high level of accountability, fairness and transparency.

As a result, the European Commission has understood this by proposing on 21 April 2021 the Artificial Intelligence Act [8], to codify the high standards of the EU trustworthy AI paradigm, which it required for AI to be 'legally, ethically and technically robust, while respecting democratic values, human rights and the rule of law' [3].

The EU AI Act mainly introduces a 'product safety framework' formed around four risk (minimal, limited, high and unacceptable) categories. It enforces requirements for market entrance and certification of 'High-Risk AI Systems' through a new mandatory CE-marking procedure.

Regarding legality in AI outcomes, this regime also applies to all machine-learning training, testing and validation of datasets, specifying the forbidden use of private companies' databases.

The European Parliament has recently opposed mass surveillance, calling for a ban on private facial recognition databases such as Clearview [11].

Conclusion. In conclusion, humanity is called on to evolve by integrating new methods resulting from technical progress and creative destruction. Today's ultra-connected world implies a technological overexposure but also an evolution of criminal practices.

In this context, an equivalent response seems to be crucial to face these new technological challenges. AI could be the answer to curb certain crimes which date back to the dawn of time, such as domestic violence.

In the current context of minorities (religion, race, sexual orientation), the use of AI seems to increase the discrimination they already face.

However, like any immature technology, it needs time and mistakes to progress. Until then, an international consensus is needed to guarantee fundamental rights and principles, especially those of fair trial, and to ensure the privacy of citizens around the world, through code ethics, based on transparency and accountability.

The EU draft bill seems to provide a framework defining the use of AI and its powers, in a social context where AI appears to civil society as being more intelligent and even surpassing its creator, humankind. Through predictive justice, AI seems in some way to align itself with the work of the judge it imitates. In this regard, it might be interesting to ask whether AI can also imitate the work of a lawyer to improve their time optimisation: could an AI program become a lawyer?

References

1. Babuta Alexander and Oswald Marion. 'Data Analytics and Algorithmic Bias in Policing' (Royal United Services Institute for Defence and Security Studies (RUSI), 2009).

2. DeepMind. Available at: https://deepmind.com/research/case-studies/alphago-the-story-so-far (accessed: 02.12.2021).

3. 'EU Artificial Intelligence Act: The European Approach to AI'.

4. McCarthy John, 'What is Artificial Intelligence'. Society for the Study of Artificial Intelligence and Simulation of Behavior, Computer Science Department, Stanford University, 2007. Available at: http://jmc.stanford.edu/articles/whatisai/whatisai.pdf (accessed: 02.12.2021).

5. Nilsson, N.J. The Quest for Artificial Intelligence: A History of Ideas and Achievements. Cambridge: Cambridge University Press, 2009, p. 19-21.

6. Office of the Privacy Commissioner of Canada, 'Police use of Facial Recognition Technology in Canada and the way forward'. Available at: https://www.priv.gc.ca/en/opc-actions-and-decisions/ar_index/202021/sr_rcmp/. (accessed: 10.12.2021).

7. Oke S.A., 'A Literature Review on Artificial intelligence' (International Journal of Information and Management Sciences. 2008. No. 19(4), p. 535-570.

8. Proposal for a regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206 (accessed 02.12.2021).

9. Rigano Christopher, 'Using Artificial Intelligence to Address Criminal Justice Needs', (US NIJ Journal 280, January 2019). Available at: www.nij.gov/journals/280/Pages/using-artificial-intelligence-to-address-criminal-justice-needs.aspx (accessed: 02.12.2021).

10. Turing A.M., 'Computing Machinery and Intelligence' (1950) Mind 49: p. 433-460. Computing Machinery and Intelligence. Available at: www.csee.umbc.edu/courses/471/papers/turing.pdf (accessed: 02.12.2021).

11. 'Use of artificial intelligence by the police: MEPs oppose mass surveillance', European Parliament News, 6 October 2021. Available at: www.europarl.europa.eu/news/en/press-room/20210930IPR13925/use-of-artificial-intelligence-by-the-police-meps-oppose-mass-surveillance (accessed: 02.12.2021).

Original source - Idder Asma and Coulaux Stephane - the International Bar Association - https://www.ibanet.org/dec-21-ai-criminal-justice

Искусственный интеллект в уголовном правосудии: вторжение или революция?

Аннотация: Хотя использование ИИ в уголовном правосудии предназначено для соблюдения фундаментальных правовых принципов, таких как общественный порядок и безопасность, оно также может создавать отрицательные внешние эффекты, усиливая ранее существовавшие предубеждения и ошибки и, следовательно, подрывая эффективность правосудия и правоохранительных органов.

ИИ еще не является зрелой технологией во многих своих приложениях. Уголовное правосудие и, в первую очередь, правоохранительные органы должны рассмотреть возможность использования ИИ не только в свете основных принципов прав человека, таких как неприкосновенность частной жизни и недискриминация, но и в свете растущего убеждения, что алгоритмы ИИ более объективны и умны, чем люди, хотя на самом деле они могут передать человеческую ошибку.

Ключевые слова: искусственный интеллект; правосудие; ИТ-технологии; уголовное судопроизводство; преступность.

♦ **Иддер Асма** - CMG Avocats & Associés, Париж (Франция). E-mail: idder@cmglegal.net
Куло Стефан - CMG Avocats & Associés, Париж (Франция). E-mail: coulaux@cmglegal.net