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Artificial Intelligence in Treating Juveniles in Conflict with Law and Detection of Recidivism

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ABSTRACT

AI research now spans various scientific disciplines; scientists have evaluated the effectiveness of intelligent algorithms designed to forecast (or learn from) natural, physical, and social phenomena, including those related to crimes. Technology significantly aids law enforcement agencies in decision-making and operations by enhancing data-driven procedures, efficiency, and specific capabilities. Notwithstanding the ostensible benefits of integrating artificial intelligence (AI) into the juvenile justice system, additional investigation is imperative to ensure the comprehensive protection of human rights, including those pertaining to children. It is essential to recognize that we cannot return to the previous state of affairs, and AI can be utilized by psychiatrists to investigate mental disorders and assist the government in reducing recidivism. The incorporation of AI into juvenile justice systems appears promising, yet further research is necessary to ensure protection of human rights, particularly children's. Recognising that a return to previous methods is unfeasible, AI can be employed by mental health professionals to investigate psychological disorders and aid governmental efforts to reduce reoffending. However, caution must be exercised to prevent AI usage from compromising minors' essential rights. Should policymakers successfully navigate these challenges, they could improve a system that has historically lacked theoretical consideration despite increasing practical application.

Keywords*: Artificial Intelligence, Health Care Sector, Mental Disorder, Cognitive Behavioural Therapy, Juvenile Delinquency, Recidivism, Criminal Justice system.*

I. INTRODUCTION

Artificial intelligence (AI) is revolutionising the economy, and its impact is being felt across a range of activities, such as shopping, communication, and research. The potential applications of artificial intelligence are extensive and far-reaching, with the capacity to transform virtually every aspect of human endeavour. It is challenging to identify any domain that could not be

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enhanced, expedited, or transformed by artificial intelligence [2]. The increasing reliance on machines to make decisions autonomously necessitates the implementation of adequate mechanisms to ensure accountability and protect human rights. At present, various governments are utilising advanced technologies, such as biometric tracking and video surveillance, to prevent unlawful and menacing conduct, including militant acts. While these governmental initiatives enhance public safety and mitigate criminal activities, they simultaneously surveil and monitor common individuals, which amounts to transgression individual anonymity and may potentially result in future discrimination based on religious persuasions, physical disorders, or political allegiances. Moreover, the advancements in the nanotechnology domain present additional challenges. As technology and science progress, the concept of a juridical person is extended to its limits, for "the scientific and technological world, artificial in nature, encroaches upon the already defined legal dimension of a person, an artificial concept in itself."[3]

(A)   Artificial Intelligence

Although the field of artificial intelligence (AI) has been in practice over five decennia, it has recently gained a heightened level of interest and attention. Originating from the domain of computer science[4], this highly intricate field has attracted considerable interest within the academic and professional spheres. The seminal definition of artificial intelligence (AI) originates from 1955, when John McCarthy and his associates characterised AI as "making a machine behave in ways that would be called intelligent if a human were so behaving."[5]. The more formal definition of AI is "the study of the computational processes that facilitate the perception, reasoning, and execution of actions"[6].The primary characteristic of the computerised perspective of human cognition is that it converts the enigma of human thought into a network of formal symbols. The computer reconfigures all problems into patterns of these symbols, achieving considerable success in numerous instances. However, the irony lies in the fact that deductive reasoning, which is a creation or at least a revelation of human cognitive faculties, is now being utilised by experts in artificial intelligence to elucidate the human mind[7].

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[3] Maria Stefania Cataleta, 'Humane Artificial Intelligence: The Fragility of Human Rights Facing AI' (East-West Center 2020) <https://www.jstor.org/stable/resrep25514> accessed 26 August 2024.
[4] Bertalan Meskó and Marton Görög, 'A Short Guide for Medical Professionals in the Era of Artificial Intelligence' (2020) 3 npj Digital Medicine 1 <https://www.nature.com/articles/s41746-020-00333-z> accessed 27 August 2024.
[5] Camino Kavanagh, 'Artificial Intelligence' (Carnegie Endowment for International Peace 2019) <https://www.jstor.org/stable/resrep20978.5> accessed 26 August 2024.
[6] Stephan De Spiegeleire, Matthijs Maas and Tim Sweijs, 'What Is Artificial Intelligence?' (Hague Centre for Strategic Studies 2017) <https://www.jstor.org/stable/resrep12564.7> accessed 26 August 2024.
[7] J David Bolter, 'Artificial Intelligence' (1984) 113 Daedalus 1 <https://www.jstor.org/stable/20024925>

Artificial Intelligence (AI) is an academic domain that aims to develop programs capable of accomplishing objectives that typically require human. This allows for the integration of AI systems into real-world situations that often involve significant uncertainty. Although AI has become increasingly prevalent in consumer applications, such as GPS navigation systems and voice-controlled smart homes, its true potential for businesses and other organisations remains largely untapped[8].The integration of artificial intelligence into human society could potentially initiate a process of cognization, which is reminiscent of the transformations brought about by industrialisation. Automation has the ability to replace and transform jobs, modify the equilibrium between manpower and technology, and influence state governance and diplomatic strategies[9] . According to a contemporary investigation conducted by the McKinsey Global Institute, approximately 45 percent of work activities presently being carried out in the U.S. economy could be accomplished with existing technology. It is crucial for societies to effectively manage these changes, as they will impact their internal cohesion and global competitiveness[10].

Artificial intelligence is a recent addition to the collection of "automation" technologies that undertake tasks that were traditionally performed by humans, often at a lower cost, more swiftly, and with greater accuracy. Contemporary AI leverages advanced computing power to automate certain tasks that surpass the cognitive capabilities of humans. Its development is dependent on advancements in computing technology and hardware, the extensive availability of substantial data sets, and the evolution of algorithms for analysing and drawing statistical inferences and predictions[11]. The automation process, exemplified by computer numerically controlled equipment, robotic systems, and cognitive computing, is frequently perceived as a precursor to widespread unemployment. However, some scholars contend that this wave of automation, much like past technological advancements, will boost labour demand, ultimately leading to higher employment and wages [12].

Artificial intelligence has long sought to achieve computers that exhibit clear signs of

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accessed 26 August 2024.

[8] Francesca Rossi, 'Building Trust in Artificial Intelligence' (2018) 72 Journal of International Affairs 127 <https://www.jstor.org/stable/26588348> accessed 26 August 2024.

[9] Ajay Agrawal, Joshua S Gans and Avi Goldfarb, 'Artificial Intelligence: The Ambiguous Labor Market Impact of Automating Prediction' (2019) 33 The Journal of Economic Perspectives 31 <https://www.jstor.org/stable/26621238> accessed 26 August 2024.

[10] Paul Scharre, Michael C Horowitz and Robert O Work, 'The Artificial Intelligence Revolution' (Center for a New American Security 2018) <https://www.jstor.org/stable/resrep20447.4> accessed 26 August 2024.

[11] Laura D Tyson and John Zysman, 'Automation, AI & Work' (2022) 151 Daedalus 256 <https://www.jstor.org/stable/48662040> accessed 26 August 2024.

[12] Daron Acemoglu and Pascual Restrepo, 'Automation and New Tasks: How Technology Displaces and Reinstates Labor' (2019) 33 The Journal of Economic Perspectives 3 <https://www.jstor.org/stable/26621237> accessed 26 August 2024.

intelligence, as demonstrated by Alan Turing's famous test of machine intelligence. This test posits that an intelligent machine is one that can successfully convince a judge that they are interacting with a human being. Although the definition of consciousness in artificial life may have been refined by subsequent thinkers, the fundamental principle has remained constant[13].Artificial intelligence (AI) encompasses various definitions; some consider it the developed technology that enables computers and machines to function astutely. Others view it as the machinery that supplants human labour to produce more efficient and expeditious outcomes. Additionally, some define it as "a system" with the capability to accurately interpret external data, learn from such information, and utilise those learnings to achieve specific goals and tasks through flexible adaptation[14].

II. ARTIFICIAL INTELLIGENCE AND HEALTH CARE SECTOR

The SARS-CoV-2 epidemic imposes additional burdens on healthcare systems. To address these challenges, innovative technology increasingly utilised. The past decade, in particular, has witnessed a significant proliferation of artificial intelligence (AI) within the healthcare sector. AI possesses the potential to revolutionise healthcare and mitigate the challenges confronting Healthcare systems[15].AI is revolutionising healthcare[16] in the modern era by utilising technologies that facilitate prediction, detection, learning, and action. For instance, it can be employed to discern novel correlations between genetic codes or to supervise robots that assist in surgical procedures. The technology has the ability to identify subtle patterns that may elude human perception[17]. The rising expenses associated with healthcare [18] and the altering age demographic of populations, particularly in developed countries, have resulted in an escalating demand for AI services. With the aging population, there will be an upsurge in chronic diseases necessitating costly treatment[19].

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[13] Charles T Rubin, 'Artificial Intelligence and Human Nature' [2003] The New Atlantis 88 <https://www.jstor.org/stable/43152855> accessed 26 August 2024.

[14] Michael Cheng-Tek Tai, 'The Impact of Artificial Intelligence on Human Society and Bioethics' (2020) 32 Tzu Chi Medical Journal 339 <https://journals.lww.com/ TCMJ/fulltext/2020/ 32040/ The_impact_of_ artificial_ intelligence_on_human.5.aspx> accessed 17 September 2024.

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[17] Mohammed Yousef Shaheen, 'Applications of Artificial Intelligence (AI) in Healthcare: A Review' [2021] ScienceOpen Preprints <https://www.scienceopen.com/hosted-document?doi=10.14293/S2199-1006.1.SOR-.PPVRY8K.v1> accessed 27 August 2024.

[18] Erik Drysdale and others, *Implementing AI in Healthcare* (2019).

[19] Julia Amann and others, 'Explainability for Artificial Intelligence in Healthcare: A Multidisciplinary

Moreover, there is a scarcity of adequately trained nurses and healthcare professionals. Furthermore, a substantial number of individuals, particularly those in developing nations, face restricted access to contemporary and effective healthcare services[20].Nevertheless, there are numerous positive effects on human beings, particularly in the healthcare sector. Artificial Intelligence (AI) endows computers with the capability to learn, reason, and apply logic. As health professionals and medical researchers endeavour to discover novel and efficacious methods of treating diseases, digital computers can not only assist in analysis, but robotic systems can also be developed to perform delicate medical procedures with precision. This exemplifies the contribution of artificial intelligence to healthcare[21].The integration of AI techniques in healthcare research and information technology processes has the potential to substantially decrease overall healthcare expenditure while enhancing health outcomes and quality of life[22].

The healthcare industry has transitioned from a hospital-centric to a patient-centric approach, empowering patients to manage their health through advancements in AI, IoT[23], big data, and assisted fog and edge networks. Healthcare 4.0, characterized by digital health with intelligent sensors, enables real-time prediction models and business analytics for smart, connected patient care[24]. The health care industry prepares for healthcare 5.0, featuring smart control, interpretable analytics, and three-dimensional view models[25].The expectation of augmented medicine has been awaited by patients for an extended period, as it holds the potential for increased self-determination and personalised healthcare. The emergence of smartphones, wearables, detectors, and communication systems has revolutionized medical practice, facilitating the integration of artificial intelligence-driven applications into compact, portable devices[26].

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[24] P Murali Doraiswamy, Charlotte Blease and Kaylee Bodner, 'Artificial Intelligence and the Future of Psychiatry: Insights from a Global Physician Survey' (2020) 102 Artificial Intelligence in Medicine 101753 <https://www.sciencedirect.com/science/article/pii/S0933365719306505> accessed 27 August 2024.

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The development of early diagnostic tools remains a complex challenge, given the intricacy of various disease mechanisms and the underlying symptoms. Artificial Intelligence offers great potential to enhance healthcare, including diagnosis. Machine Learning[27], a subfield of AI, utilises data as an input resource, where the accuracy is heavily dependent on both the quantity and quality of the input data, which can help alleviate some of the challenges and complexities associated with diagnosis[28].As individuals are the targeted recipients of numerous artificial intelligence (AI) advancements, a more thorough characterisation of their preferences, principles, and concerns essential for assuring that these innovations not only well-received but are developed and deployed in an conscientious fashion that enhances clinical outcomes. Even in circumstances where persons do not directly interface AI-based solutions, they still bear the most significant risk should execution be executed erroneously unethically [29].This poses novel ethical considerations pertaining to the lucidity data application, liability for data governance, and prospective imbalances the implementation artificial intelligence[30].

At present, there is a paucity of research characterising patient and other participant insights on applications of artificial intelligence (AI) in healthcare[31]. Furthermore, the limited studies that have evaluated patient perspectives have focused on a restricted set AI tool, which constrains their utility as a guide in predicting patient interaction with other AI applications in healthcare[32].The critical role of trust in the patient-physician relationship has been widely recognised, with numerous studies elucidating the significance of trust for patient adherence to medical advice and prescribed treatment regimens[33].

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III. CHILDREN IN CONFLICT WITH LAW AND PSYCHOLOGICAL DISORDER

International and national legal frameworks mandate that the justice system treat children with respect for their rights, inherent dignity, and needs, focusing on their reform. Juvenile justice administration should prioritize rehabilitation and reintegration into society over punitive actions[34]. A constellation sociological and demographical factors, including familial dysfunction, substance dependence, and maltreatment, appears to exhibit a significant correlation with juvenile delinquency. Children in conflict with the law also demonstrate a higher propensity for aggression compared to their non-delinquent counterparts[35]. Adolescents who commit crimes frequently[36] display neuropsychological disorders[37], such as impairments in language, immediate memory, targeted sustained attention, and issues with executive skills, including planning, cognitive inhibition, and flexibility. These results coincide with the postulation that there is a delay in the growth the prefrontal cortex adolescent offenders. It is vital to investigate the interplay between these neuropsychological disorders[38] and other social influences that contribute to an increased likelihood of engaging in criminal activity, in order to prevent school dropout and juvenile delinquency[39].

The relationship between cognitive capacity and criminal behaviour [40]has prompted researchers to consider whether it is due to "slow-witted" offenders being more easily apprehended by law enforcement. However, a series of studies [41] demonstrated that this is not the case, as the association persists even for undetected offenders identified through interviews who continue to exhibit poor cognitive functioning. It was reported [42]that IQ levels, as measured by a brief

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[41] TE Moffitt and PA Silva, 'Self-Reported Delinquency, Neuropsychological Deficit, and History of Attention Deficit Disorder' (1988) 16 Journal of Abnormal Child Psychology 553.

[42] D Lader, N Singleton and H Meltzer, 'Psychiatric Morbidity among Young Offenders in England and Wales' (2003) 15 International Review of Psychiatry 144 <http:// www.tandfonline. com/doi/full/ 10.1080/ 0954026021000046074> accessed 27 August 2024.

screening tool, were on average below 80. This finding is consistent with research which indicated that the average intellectual ability of young people referred to an adolescent forensic mental health service in the UK was 77, with nearly one in four falling below this threshold. The incidence and exposure to attempted suicide and parasuicide in incarcerated adolescents has been found to be extremely high[43]. An enhanced comprehension of psychological development during adolescence has the potential to facilitate improved policymaking, judicial decision-making, forensic evaluation and legal practice. Furthermore, it provides robust support for the maintenance of a separate juvenile justice system wherein adolescents are adjudicated, tried and sanctioned in developmentally appropriate manners[44].

Despite the rising importance of mental health in public health discourse, efforts to track psychological well-being and illnesses among children face several challenges. These include delays in data, limited data sources (especially at state and local levels), and inconsistent measures for specific disorders. For example, tracking effective treatments for mental disorders in the U.S. is often hindered by inadequate data sources. Treatments for Attention Deficit Hyperactivity Disorder (ADHD) and Autism spectrum disorder (ASD) are monitored utilising the National Survey of Children's Health, whilst treatments for Major Depressive Episode (MDE) are monitored through the National Survey of Drug Use and Health. However, national surveillance does not encompass treatments for anxiety disorders, behavioural problems, or trauma-related conditions[45].

Clinical examination of neuropsychological test results revealed a higher prevalence of irregular profiles in the delinquent group compared to the nondelinquent group (84% vs 11%). A pattern of deficits indicative of anterior brain dysfunction, particularly in the right hemisphere, was more pronounced. Discriminant function analysis utilising 12 neuropsychological test factors or Wechsler Intelligence Scale subtests accurately classified approximately 85% of delinquents and nondelinquents. The deficit pattern, emphasising anterior cerebral dysfunction primarily in the right hemisphere, was discussed in relation to the lower number of violent adolescents and the high proportion of delinquents exhibiting depressive characteristics[46]. Nevertheless, to

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[45] Rebecca H Bitsko and others, 'Mental Health Surveillance Among Children — United States, 2013–2019' (2022) 71 MMWR Supplements 1, http://www.cdc.gov/mmwr/volumes/71/su/su7102a1.htm?s_cid=su7102a1_w accessed 17 September 2024.

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provide these children with effective Cognitive Remediation Therapy (CRT), it is of paramount importance to obtain individual profiles of dysfunction for each child. By identifying the various individual components of their deficits, it will be feasible to devise a repertoire of cognitive tasks that can be judiciously applied based on their individual needs[47].

Nevertheless, regarding the terms of detention for juveniles, significant discretion is afforded to prevent the detention process from occurring, despite the fact that the actual number of child detentions remains substantial. Although the conditions for the application of detention for juveniles who commit criminal offences are in accordance with the procedures stipulated in the Law on the Juvenile Criminal Justice System, the detention of minors should be avoided in accordance with the principle of ultimate remedy involving the detention of children[48].Consequently, the implementation of criminal law pertaining to minors is expected to prioritise and emphasise the best interests of child protection and welfare by observing and adapting to societal, ethnographic and political landscape prevalent within the community[49].

IV. PSYCHOANALYSIS OF THE DELINQUENT JUVENILE USING AI TOOLS

Over the past few years, the rapid advancement in artificial intelligence (AI) technology has prompted numerous sectors to explore its innovative applications. Due to AI's exceptional capabilities in data analysis, pattern recognition, and automation, it presents considerable potential for the provision of mental health services[50]. Through the provision of novel tools and techniques for the assessment, diagnosis, and treatment of mental health conditions, AI has the potential to transform the field of psychiatry [51]. Mental health challenges have increased significantly, particularly in the aftermath of the COVID-19 pandemic, as indicated by[52] . Various techniques, models, and datasets have been applied in predicting recidivism. Upon evaluating the available models, it is evident that logistic regression is the most frequently utilised approach in these studies. Nevertheless, more sophisticated algorithms are less

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[47] Saranya Banerjee, Priyanka Paul and Sanjukta Das, 'A Case Study on the Neuropsychological Correlates of Behaviour of a Child in Conflict with Law' (2020) 15 Journal of Psychosocial Research 181.

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[50] Aakriti Mathur and others, 'Effectiveness of Artificial Intelligence in Cognitive Behavioral Therapy' in Tomonobu Senjyu and others (eds), *ICT with Intelligent Applications*, vol 248 (Springer Singapore 2022) <https://link.springer.com/10.1007/978-981-16-4177-0_42> accessed 27 August 2024.

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[52] J Burkauskas and others, 'Anxiety in Post-Covid-19 Syndrome – Prevalence, Mechanisms and Treatment' (2024) 3 Neuroscience Applied 103932 <https://www.sciencedirect.com/science/article/pii/S2772408523029149> accessed 27 August 2024.

commonly employed. In terms of predictive accuracy and performance, both simpler models, such as logistic regression[53], and more complex ones, such as random forest, yield comparable results. Therefore, it is apparent that emphasising model complexity does not significantly improve the predictability of criminal recidivism[54].

The psychological burden caused by the pandemic has exacerbated the pre-existing mental health crisis, resulting in an increase in cases of depression, anxiety, and suicidal ideation. Consequently, it is essential to implement efficacious and accessible mental health interventions. Cognitive Behavioural Therapy (CBT) is widely recognised as one of the most effective therapeutic approaches for addressing a broad range of mental health concerns, as noted by Foreman and Pollard (2016) and David et al (2018). Mental health challenges have grown significantly, particularly in the aftermath of the COVID-19 pandemic[55]. The psychological burden caused by the pandemic has exacerbated the pre-existing mental health crisis, resulting in an increase in cases of depression, anxiety, and suicidal ideation. Consequently, it is essential to implement efficacious and accessible mental health interventions. Cognitive Behavioural Therapy (CBT) is widely recognised as one of the most effective therapeutic approaches for addressing a broad range of mental health concerns [56],

AI tools could offer numerous benefits over human guidance. For instance, they are unbiased and adherent to established protocols, whereas human guidance may be susceptible to bias and deviate from established procedures[57]. Moreover, AI tools are data-driven, rather than being influenced by human biases. Furthermore, AI guidance is available instantly in ICBT[58], offering individuals immediate support without having to wait for a trained professional to respond to their request. Lastly, AI guidance may be preferable to human guidance in situations where there is a high demand for guidance or a shortage of trained professionals[59]. Young people

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[53] Marius Miron and others, 'Evaluating Causes of Algorithmic Bias in Juvenile Criminal Recidivism' (2021) 29 Artificial Intelligence and Law 111 <https://link.springer.com/10.1007/s10506-020-09268-y> accessed 27 August 2024.

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[58] Inference-Based Cognitive-Behavioral Therapy is a specialized form of psychotherapy that has been developed specifically for individuals who are suffering from obsessive-compulsive disorder and other related conditions.

[59] Dawn Branley-Bell and others, 'Chatbots for Embarrassing and Stigmatizing Conditions: Could Chatbots

frequently attribute their preference for AI over face-to-face therapy to stigma, as well as social anxiety. They argue that AI is a more desirable option since "it is non-judgmental, whereas people can be judgmental." These perspectives highlight a critical advantage of AI that warrants further investigation in future research, particularly among the younger generation[60].

Presently, smartphones can be utilised for utilisation and implementation of self-management techniques to enhance the accessibility and standard of psychological well-being self-care[61]. One such approach is the use of a chatbot[62]. Notably, a study conducted by the World Health Organization, which analysed 15,000 applications, found that 29% of them focused on mental health diagnosis or support. It is expected that chatbots will play a useful role in addressing the shortage of mental health care providers[63].The previous literature reviewed ([64]; suggest that cross-cultural perceptions of mental health issues and the use of AI may differ among young people across different countries. In contrast to their counterparts in Australia and the United Kingdom, young individuals from Kenya[65] and India [66] perceived that mental health conditions are not acknowledged or accepted, and therefore opted for internet treatments to conceal their condition from their community. These sentiments align with the existing literature on the obstacles of recognition, stigma, and insufficient resources for mental health, which may impact the approach to treating mental health issues in various cultural contexts[67]. Unguided interventions are frequently employed in healthcare systems due to their lower initial costs, especially with limited resources. This is particularly pertinent for prevalent subthreshold to mild disorders, as providing guidance on a national scale would significantly increase initial

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costs. Additionally, unguided interventions may be crucial in the growing field of mental disorder prevention[68].

V. AI TO PREDICT CRIME AND CONTROL RECIDIVISM

The 'Awful Human Argument' and the 'Better Together Argument' are often used to support replacing or augmenting human decision-making with algorithms and automated systems. Human decision-making is limited by bias, a narrow range of experience, inefficiency, emotional influence, impulsivity, and various cognitive biases and heuristics that can lead to errors. Human judgment includes important dimensions absent in machine decision-making, such as emotional and non-rational elements. Although algorithms may predict recidivism, recidivism is dynamic and influenced by the sentence and its implementation. It results from multiple factors rather than being an inherent characteristic of an individual.[69] AI systems, adept at analysing past data for predictions, are increasingly applicable in criminal law, where traditionally, law enforcement and judges have depended on their experience, training, and intuition. The judiciary has thus embraced broad standards to allow for these subjective assessments, such as permitting officers to detain individuals based on a reasonable suspicion of criminal activity or magistrates to issue warrants based on a prudent belief in the commission of an offense. These flexible standards persist due to the complex factors affecting criminal cases and the historical absence of precise tools for evaluating prediction accuracy, forcing state actors to rely on subjective beliefs and anecdotal evidence[70].

The core sentencing objectives of safeguarding populace, targeted deterrence and rehabilitation should be calibrated in deciding the eventual punishment. If an offender has a high probability of recidivism, this will significantly lean in favour of a more stringent penalty, in order to protect the society and to underline to the perpetrator that there are severe consequences for felonious activities. By contrast, a low risk of committing further crimes leans in favour of a lower penalty. This is because there is less need for public safety and the offender is likely to have good chances of rehabilitation[71].A criminological prognosis is an evaluation by authorities to

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determine an offender's likelihood of reoffending. This prognosis underpins the institution of conditional early release and other applications. It is crucial for assessing the justification of holding a minor criminally liable, conditionally discontinuing proceedings, suspending sentence execution, and related issues. Thus, formulating a criminological prognosis is essential for identifying the most suitable criminal law measures, considering both the specific offense and the individual offender[72].

When used appropriately, artificial intelligence (AI) can significantly benefit criminal risk assessments, including sentencing[73]. AI has the potential to operate without the human biases that have historically influenced assessments. AI-based risk assessments can also be more equitable, consistent, and objective than previous methods. However, AI risks incorporating and amplifying the same biases it aims to avoid, either through biased data or misinterpreting correlation as causation. Additionally, despite designers' best intentions, AI systems may produce inaccurate risk assessments due to input data issues or algorithmic errors. Due process[74] must be central when integrating AI-enabled risk assessments into the criminal justice system[75].Risk assessment algorithms, like the debated COMPAS algorithm, have been used in the U.S. to predict recidivism rates for judicial bodies. More extreme examples include algorithms that offer sentencing recommendations for individual criminal cases, including serious offences such as rape and drug possession. Some states have also announced plans to implement 'intelligent courts' that use artificial intelligence in judicial decision-making, including sentencing[76].

Discriminative artificial intelligence has been employed in forensics to forecast aggression risk[77],anticipating prospective transgressions[78],recurrence of criminal behaviour[79].Moreover,

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[72] Magdalena Kowalewska-Lukuc and Konrad Burdziak, 'The Use of AI in Formulating a Criminological Prognosis of an Offender' (2021) 25 Technium Social Sciences Journal 115 <https://heinonline.org/HOL/Page?handle=hein.journals/techssj25&id=115&div=&collection=>.

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artificial intelligence has been employed to inform decisions regarding sentencing, parole, probation or pretrial risk assessment, raising several legal and ethical concerns pertaining to, inter alia, fairness, accountability and transparency[80].Recent innovations in neuroimaging techniques and the increasing prevalence of artificial intelligence (A.I.) technologies across various societal domains, encompassing social networks, clinical services, and criminal justice policies, have generated significant interest in the potential application of brain imaging in conjunction with A.I. to enhance risk assessment and prediction of future violent behaviour[81].Algorithmic modelling methodologies can be employed efficaciously to ascertain whether deficits in cognitive functions contribute to antisocial and aggressive behaviour in adolescent offenders[82].

VI. CONCLUSION

Privacy, data security and confidentiality, are matters of utmost importance in the context of mental health and therapy. The utilisation of AI-based applications necessitates the disclosure of personal information by individuals, including that of their family members. This raises the potential for vulnerability in the event of a breach of confidentiality or a data breach. The potential hazards associated with the deployment of Artificial Intelligence for examining the data of minors are significantly concerning, given that it may inadvertently jeopardise their privacy entitlements. Despite the apparent advantages of integrating AI into the system of juvenile justice, additional investigations are required to guarantee that the human rights, including the rights of children, are fully safeguarded. It is crucial to acknowledge that we cannot revert to the previous state of affairs, and AI can be utilised by psychiatrists to explore mental ailments and assist the government in curbing recidivism. Nevertheless, prudence must be exercised to ensure that the utilisation of AI does not undermine the fundamental entitlements of young individuals who are below the consenting age. If policymakers succeed, they could enhance a system that has long lacked theoretical reflection despite its growing practical use. However, there is a risk that AI and ML models could dominate this area of public law unchallenged. This would be undesirable, as it could lead to two major issues in an already

Models Using Registration Data with Binary and Survival Outcomes' (2019) 14 PLOS ONE e0213245 <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0213245> accessed 17 September 2024.

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critical legal sector: unsatisfactory shielding of fundamental rights and the possible elimination of the human element from assessing individual hazard. This exclusion would deprive the justice field of the humanism essential for developing collective consciousness in complex social organisations.

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