

## **EFFECT OF ARTIFICIAL INTELLIGENCE ON JUVENILE DELINQUENCY IN INDIA**

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### **Abstract**

Artificial Intelligence (AI) has moved from being a specialised research tool to an everyday presence in classrooms, workplaces and homes, and its reach now extends into the conduct and control of crime among the young. This paper examines the dual and often contradictory relationship between AI and juvenile delinquency in India. On one hand, freely available AI tools are lowering the technical skill needed to commit offences such as phishing, deepfake-based extortion, malware deployment and online grooming, drawing juveniles into forms of cybercrime that were previously the preserve of trained hackers. On the other hand, the same technology is being deployed by mental health professionals, schools and law-enforcement agencies to identify behavioural warning signs early, to support predictive policing, and to design rehabilitation-oriented interventions consistent with the reformatory philosophy of juvenile justice. Drawing on recent case studies, scholarly literature and reported incidents involving Indian and foreign minors, the paper argues that AI should be treated as a governance challenge rather than a purely technical one: its benefits for prevention and monitoring can only be realised if deployment is accompanied by strict safeguards for children's privacy, data protection and due-process rights. The paper concludes with policy-oriented suggestions for the calibrated, child-centred use of AI within India's juvenile justice framework.

**Keywords:** Artificial Intelligence; Juvenile Delinquency; Cybercrime; Predictive Policing; Juvenile Justice System; Child Rights; India

### **Introduction**

The head of a leading AI company recently predicted that a child born today will never know a world in which artificial intelligence is not smarter than a human being, and that AI will fundamentally reshape education as we know it. Whether or not that forecast proves accurate, it captures how deeply AI has already embedded itself in everyday life – from the

classroom and the shop floor to the drafting of routine correspondence, and, more troublingly, to the commission of crime. Juvenile delinquency, understood as the commission of an offence by a person below eighteen years of age, has not been insulated from this shift. AI is beginning to influence both the methods juveniles use to offend and the tools available to identify and prevent such offending. This paper looks at both sides of that relationship: how AI is being misused to devise new forms of delinquent conduct, and how the same technology can be harnessed for the early identification, monitoring and prevention of delinquency. It begins by outlining the core components of AI that are relevant to this discussion.

### **Major Components of Artificial Intelligence**

AI is a branch of computer science concerned with building systems capable of performing tasks that would ordinarily require human intelligence – understanding language, recognising patterns, solving problems and learning from experience. In essence, it simulates human cognitive processes so that machines can reason, self-correct and respond to their environment. By combining large volumes of data with algorithms designed to detect patterns within that data, an AI system can adapt to new inputs and improve its own performance over time, often well beyond what its original designers anticipated.<sup>1</sup>

The principal components that make up an AI system include:<sup>2</sup>

- Machine learning – the capacity of a system to learn from data and improve its performance without being explicitly reprogrammed for each new task.
- Natural language processing (NLP) – the ability of a system to understand, interpret and generate human language.
- Robotics – the capacity to control and interact with physical devices in the real world.
- Computer vision – the ability to interpret visual information such as images and video.
- Planning and decision-making – the capacity to make choices under incomplete or uncertain information.
- Knowledge representation and reasoning – the ability to store and logically process information about the world.
- Actuators – the mechanical components that allow an AI-driven system to move or act physically.
- Sensors – cameras, microphones and other devices through which a system perceives its surroundings.

### **Literature Review**

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<sup>1</sup>See Revelo, 'Large Language Models', <https://www.revelo.com/blog/large-language-models>, for a general discussion of how AI models are trained on data and improve through use.

<sup>2</sup>See generally, standard computer-science literature on the components of Artificial Intelligence systems.

A growing body of scholarship has examined the links between social media, internet use and juvenile delinquency, but because AI-specific applications in this field are relatively new, a settled body of literature correlating AI directly with juvenile offending is still emerging. Even so, several recent studies offer useful insight into the changing dynamics of youth crime in a technology-saturated environment.

Mary Jyothi Joseph, writing on the use of AI in dealing with juveniles in conflict with law and in detecting recidivism, cautions that while integrating AI into the juvenile justice system carries real promise, it cannot be adopted uncritically. She argues that further research is needed to safeguard children's rights before such tools are relied upon, even as she acknowledges that mental health professionals can usefully employ AI to study psychological disorders and to help reduce reoffending.<sup>3</sup>

Fang Hou's study on AI-based prevention of juvenile delinquency and occupational-therapy education guidance builds predictive models – including a time-and-crime-type count vectorisation approach combined with a dense neural network, and a further model fusing a dense neural network with long short-term memory architecture – to forecast categories of youth offending. The study situates the causes of cyber-linked juvenile delinquency within the wider internet environment, patterns of youth internet use, and gaps in supervision, and proposes a four-pronged response: building a healthier online culture, equipping juveniles to use the internet responsibly, strengthening legal and supervisory frameworks, and reforming crime-prevention education for the digital era.<sup>4</sup>

Ilknur Ucuz, Ayla Uzun Çiçek, Ali Arı and Seda Aybüke Sarı, in their work on predicting the probability of juvenile delinquency using support vector machines, make the case for a clinical decision-support system. Their central premise is that because delinquent behaviour typically results from the interaction of multiple risk factors rather than any single cause, tools capable of evaluating several factors together – of the kind already used in psychiatry and other branches of medicine – could help identify at-risk children before they offend, enabling timely, appropriately tailored rehabilitative intervention.<sup>5</sup>

Other relevant contributions include Ayşe Mahinur Tezcan's study correlating internet usage, family functioning and social prestige with juvenile delinquency; Schroeders, Mariss, Sauter and Jankowsky's 2025 work on predicting juvenile delinquency and adult criminal behaviour through machine learning; and the edited volume *Child Protection Laws and Crime in the Digital Era*. Taken together, this literature establishes a fairly consistent link between internet-

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<sup>3</sup>Mary Jyothi Joseph, 'Artificial Intelligence in Treating Juveniles in Conflict with Law and Detection of Recidivism' (full publication details to be supplied by the authors).

<sup>4</sup>Fang Hou, 'Echoing Mechanism of Juvenile Delinquency Prevention and Occupational Therapy Education Guidance Based on Artificial Intelligence'; see also <https://pubmed.ncbi.nlm.nih.gov/?term=%22Hou%20F%22%5BAuthor%5D>.

<sup>5</sup>Ilknur Ucuz, Ayla Uzun Çiçek, Ali Arı and Seda Aybüke Sarı, 'Determining the Probability of Juvenile Delinquency by Using Support Vector Machines and Designing a Clinical Decision Support System', ScienceDirect, <https://www.sciencedirect.com/topics/social-sciences/delinquency>.

enabled technology, including AI, and patterns of juvenile offending, while underscoring how little is still known about the precise mechanisms involved.<sup>6</sup>

### **Role of Artificial Intelligence in Devising Newer Means of Delinquency Among Juveniles**

Conventional juvenile offences have traditionally ranged from petty theft and pickpocketing to more serious offences such as assault. The spread of AI has opened up an entirely new category of offending for technically capable young minds: forgery, cyberstalking, impersonation, online blackmail and hacking are increasingly being committed with the aid of AI tools. Generative chatbots can draft convincing phishing messages at scale, and AI-assisted malware can adapt in real time to evade detection, all of which substantially lowers the barrier to entry for would-be juvenile offenders.

Two recent cases illustrate the point. In May 2025, an eighteen-year-old from India was arrested for allegedly orchestrating cyberattacks against more than fifty government entities as part of a youth cybercrime collective operating on Telegram; the group is reported to have used publicly available hacking tools to launch distributed denial-of-service attacks, and the case was investigated by an anti-terrorism unit.<sup>7</sup> In the United Kingdom, an eighteen-year-old who began hacking at age eleven was sentenced to indefinite detention in a secure hospital after a breach that cost a major gaming company millions of dollars and thousands of staff hours; he was part of a teenage hacking collective that reportedly combined social-engineering tricks with technical exploits to compromise well-known multinational corporations.<sup>8</sup>

### **Cybercrime and Fraud**

AI is lowering the barrier to entry for young people to engage in increasingly sophisticated cybercrime in several distinct ways:<sup>9</sup>

- Social engineering: AI tools help offenders, including juveniles, mount convincing scam campaigns – from automated phishing emails to deepfake impersonation – some of which are used to sexually extort children and their families.

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<sup>6</sup>Ayşe Mahinur Tezcan, 'Correlates of Juvenile Delinquency: A Study on Internet Usage, Family Functioning, and Social Prestige'; U. Schroeders, A. Mariss, J. Sauter & K. Jankowsky, 'Predicting Juvenile Delinquency and Criminal Behavior in Adulthood Using Machine Learning' (2025); Child Protection Laws and Crime in the Digital Era (IGI Global), <https://www.igi-global.com/book/child-protection-laws-crime-digital/381315>.

<sup>7</sup>See report on the arrest of Jasim Shahnawaz Ansari, The Daily Guardian, <https://latest.thedailyguardian.com/top-news/hi-india-we-took-down-your-shield-teen-behind-cyber-blitz-during-op-sindoor-arrested/>.

<sup>8</sup>See report on the sentencing of Arion Kurtaj, The Wall Street Journal, <https://www.wsj.com/tech/cybersecurity/arion-kurtaj-hacker-468e6cad>; see also BBC reporting on the Lapsus\$ hacking group.

<sup>9</sup>See generally, industry and law-enforcement reporting on AI-facilitated social engineering, ransomware-as-a-service, and the online recruitment of minors into cybercrime.

- Simplified hacking: AI reduces the advanced coding knowledge once required to build tools such as ransomware, widening the pool of people, including minors, capable of carrying out serious attacks.
- Recruitment and grooming: criminal networks recruit vulnerable youth through gaming platforms and messaging apps, using AI to automate persuasive communication that exploits peer pressure and social isolation.

### ***Key Trends in AI-Related Youth Crime***

Reports from child-safety monitoring organisations point to several emerging trends. AI-generated child sexual abuse material has risen sharply – reports of such material increased more than thirteen-fold in a single year according to recent tracking data – and the growing realism of synthetic images and video, including so-called "nudify" applications used by minors against classmates, makes detection harder for both humans and automated filters, even though the resulting harm to victims is entirely real.<sup>10</sup>

Large language models are also being used to democratise financial fraud: criminal networks recruit young people through gaming and chat forums for romance and financial scams, and AI-generated phishing and deepfake impersonation have made such schemes markedly more convincing – in one widely reported incident, a multinational employee was defrauded of roughly £20 million through a deepfake-assisted scam. A further concern is the emotionally manipulative design of some AI companion chatbots, which experts say can mirror the tactics used by online predators in demanding attention and exploiting emotional vulnerability; a 2024 lawsuit alleged that a teenager's relationship with such a chatbot contributed to his death by suicide. Finally, the availability of AI-powered criminal services on dark-web forums and encrypted messaging platforms has made sophisticated attack capability accessible to minors who would previously have lacked the technical skill to enter such markets.

Taken together, these trends suggest that greater exposure to AI-enabled tools is affecting the psychological wellbeing of young users in ways that can contribute to delinquent behaviour and, in some documented cases, to serious mental-health harm.

### **Role of Artificial Intelligence in Detecting Early Symptoms of Delinquency Among Juveniles**

AI's contribution to juvenile delinquency is not one-sided. The same underlying technology that facilitates new forms of offending is also enabling psychologists, medical professionals and law-enforcement agencies to detect neurological or behavioural risk indicators at a much earlier stage than was previously possible.

Omar Alakayleh's study of AI applications in crime detection and prevention surveys how big-data analysis, predictive modelling and continuous monitoring are being used across

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<sup>10</sup>See reports of the Internet Watch Foundation (IWF) and the National Center for Missing & Exploited Children (NCMEC) on the rise of AI-generated child sexual abuse material and related online harms.

criminal investigation, forensic analysis and facial recognition. The study finds that AI can help law-enforcement agencies identify patterns that suggest a crime is likely before it occurs, using techniques such as data analytics, facial recognition, electronic surveillance and voice analysis, while also strengthening case-management and investigative capability more generally.<sup>11</sup>

It should be stressed that no technology can reliably detect a "criminal mind" as such, and any claim to do so raises serious ethical, legal and privacy concerns. What AI-assisted predictive policing actually does is analyse large datasets to flag patterns of behaviour or activity that correlate with elevated risk – a powerful but genuinely controversial approach to forecasting where and when offending may occur, identifying possible suspects, and analysing digital and physical evidence.

### ***AI Applications in Crime Detection and Prediction***

Predictive policing uses historical crime data, demographic information and social-media activity to identify high-risk areas for particular offence types, allowing resources to be deployed strategically. Facial and biometric recognition systems compare CCTV footage against databases of known offenders to identify or track individuals, and are increasingly used in airports and public spaces as well as in investigations. AI-enhanced criminal profiling can surface hidden behavioural patterns and communication networks that narrow the field of suspects, while AI-driven monitoring of online platforms and the dark web can detect suspicious communication, illicit sales and early signs of radicalisation, including trafficking-related activity flagged through keyword and image recognition. In forensic work, AI can process very large volumes of digital evidence – from phones and computers – considerably faster than human analysts working alone.<sup>12</sup>

### ***Data Collection and Analysis***

At the core of these applications lies the systematic analysis of large volumes of data – call records, internet activity logs and similar sources – to reveal patterns and connections that would be difficult for investigators to detect manually. This same data can help predict the areas or times most prone to particular offences, informing a more efficient security response. As video analytics, networked CCTV and social-media data continue to expand, AI is increasingly able to identify activity that would otherwise go undetected, potentially strengthening public confidence in law enforcement while also assisting forensic laboratories with complex analytical tasks such as DNA-mixture interpretation.<sup>13</sup> It is worth noting that most of this literature addresses crime detection in general terms rather than juvenile

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<sup>11</sup>Omar Alakayleh, 'The Use of Artificial Intelligence Systems in Crime Detection and Prevention: Applications and Challenges', SSRN, [https://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=7400897](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=7400897).

<sup>12</sup>See generally, technology-policy literature on predictive policing, facial recognition, and AI-assisted forensic analysis.

<sup>13</sup>See generally, law-enforcement and criminal-justice technology literature on data-driven policing and its role in public safety.

offending specifically; even so, the same techniques can, with appropriate care and a more rehabilitative orientation, be adapted to cases involving children in conflict with the law.

### ***Psychological Study of Delinquency Using AI***

Elvira Cekic's work on the use of AI tools in criminal psychological profiling examines how machine learning and natural language processing, read alongside established frameworks such as learning theory and general theories of crime, can help identify psychological risk factors and the motivations behind offending behaviour. While the study finds that AI can meaningfully improve the accuracy and efficiency of profiling – with clear value for courts, investigators and therapists seeking to understand the psychological and emotional drivers of criminal conduct – it also flags real ethical challenges around privacy, algorithmic bias and the transparency of automated decision-making, and calls for clear governance frameworks to build justified trust in these systems.<sup>14</sup>

More broadly, AI-driven forecasting tools are now used across many scientific disciplines to model natural, physical and social phenomena, including crime. For juvenile justice specifically, the consistent message across this literature is one of cautious optimism: AI can meaningfully assist psychiatrists and other professionals in identifying mental-health risk and reducing reoffending, but only if its use is accompanied by rigorous safeguards for children's rights and by policy frameworks that give this fast-developing area the theoretical grounding it has so far lacked.

### **Techniques to Monitor Delinquent Juveniles Using AI**

AI functions, in this context, as something of a double-edged instrument: the same capabilities that draw juveniles toward delinquent conduct also make it considerably easier for police and judicial authorities to investigate, monitor and, where possible, redirect young offenders away from further offending.

International and domestic legal frameworks require that children in conflict with the law be treated with dignity and respect for their rights, with an emphasis on reform rather than punishment; juvenile justice administration is meant to prioritise rehabilitation and reintegration over punitive measures. Research consistently associates juvenile delinquency with a cluster of social and demographic factors – familial dysfunction, substance dependence and childhood maltreatment among them – and children in conflict with the law tend to display higher levels of aggression than their non-offending peers. Adolescent offenders also frequently show neuropsychological difficulties, including impairments in language, working memory, sustained attention and executive functions such as planning and cognitive flexibility, consistent with research suggesting delayed prefrontal-cortex development in this group. Understanding how these neuropsychological factors interact

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<sup>14</sup>Elvira Cekic, 'The Impact of Artificial Intelligence Tools on Criminal Psychological Profiling' (full publication details to be supplied by the authors).

with wider social influences is important both for reducing school dropout and for designing more effective delinquency-prevention strategies.<sup>15</sup>

Marzia Jalil and A.S.M. Tariq Iqbal's study of AI in juvenile justice, with particular reference to children with Autism Spectrum Disorder in Bangladesh, illustrates how natural language processing and behavioural analysis are increasingly used to detect offending, assess risk and support rehabilitation. Such tools, the authors argue, can help distinguish typical from criminal behaviour so that courts and law-enforcement agencies can make fairer, more evidence-based decisions – while candidly acknowledging that algorithmic bias, privacy protection and the opacity of AI-driven decisions remain unresolved ethical concerns.<sup>16</sup>

Beyond the formal justice system, several private and civil-society organisations use AI tools to support young people at risk of delinquency. In the United States, for instance, criminal-defence advocacy bodies have examined how AI-based surveillance technology affects juvenile clients, underlining that the monitoring capabilities discussed above raise defence-side concerns just as much as they offer law-enforcement benefits.<sup>17</sup>

### **Prevention of Juvenile Delinquency Using AI**

Early detection of at-risk behaviour, paired with a stable and supportive social environment, remains the most effective safeguard against juvenile delinquency. As technology becomes ever more embedded in young people's lives, however, it has become correspondingly difficult to guide or restrain tech-savvy juveniles without the help of technology itself – and AI is increasingly regarded as one of the more promising tools for that purpose. Several specific applications stand out:

- Predictive analysis: monitoring behavioural patterns at school, in coaching environments or within peer groups can flag early warning signs – such as rising aggression or a sudden decline in academic performance – allowing counselling and other remedial measures to begin sooner rather than after an offence has occurred.
- AI-powered behaviour monitoring and mental-health support: chatbots and virtual counsellors, by tracking social-media activity and administering simple screening tools, can pick up signs of stress, depression, anxiety, self-harm or cyberbullying and connect young people with appropriate mental-health support.
- Smart policing and community intervention: predictive tools help law enforcement identify hotspots of youth offending and shift emphasis toward community-oriented policing and preventive outreach rather than purely punitive responses.

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<sup>15</sup>See generally, criminological and neuropsychological literature on risk factors – including familial dysfunction, substance dependence, maltreatment, and executive-function impairment – associated with juvenile offending.

<sup>16</sup>Marzia Jalil and A.S.M. Tariq Iqbal, 'The Role of Artificial Intelligence in Juvenile Justice with Special Reference to Autistic Children: A Study with a Focus on Bangladesh', SSRN, [https://papers.ssrn.com/sol3/cf\\_dev/AbsByAuth.cfm?per\\_id=8482208](https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=8482208).

<sup>17</sup>See NACDL Fourth Amendment Center and Georgetown Center on Privacy & Technology, presentation on AI, surveillance technology, and the criminal defense of juvenile clients.

- AI-based gamification for moral reasoning: simulations and games that model the consequences of choices, conflict resolution and ethical decision-making, supported by virtual mentors offering genuine feedback, can steer young people away from risk.
- AI surveillance for online safety: filters and alerts that monitor exposure to harmful content, cyber-grooming and attempts at gang recruitment can help shield juveniles from criminal influence online.

Recent scholarship on the integration of machine-learning tools into juvenile justice systems similarly emphasises the shift these technologies enable – from a reactive posture, responding to offences after they occur, to a proactive one, identifying risk factors and recommending targeted interventions before delinquent behaviour escalates. By analysing patterns in large-scale socio-demographic and behavioural data, such tools can help policymakers design interventions calibrated to the specific risk profile of a given community or cohort.<sup>18</sup>

### **Risks Involved in Using AI as a Tool for the Juvenile Justice System**

AI-driven tools, particularly chatbots that inform children of their legal rights and available support services, hold real potential to improve children's access to justice. At the same time, deploying general-purpose AI within child-justice settings raises serious concerns around safety, security and ethics – including the risk that biased or inaccurate training data could lead a system to disseminate harmful or misleading content to a child user. This raises an important question: whether purpose-built, child-specific AI systems, designed with additional safety features tailored to young users, could meet these needs more responsibly than general-purpose tools.<sup>19</sup>

Any technology deployed within the child-justice system should be designed and developed with children's rights placed at the centre, including genuine opportunities for children's own participation and their voices to be heard in how such systems are designed and used. Children's Rights Impact Assessments should become standard practice to ensure fairness and non-discrimination in the digital environment, and private-sector developers should be bound by the same legal and ethical obligations that apply to state actors in this space. Ultimately, any efficiency gained through AI in child justice must be weighed against the imperative to protect children's rights – through continuous impact assessment, child-centred treatment, ethical governance and respect for children's privacy as digital tools become further embedded in juvenile justice systems.

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<sup>18</sup>See generally, Abhishek and Balamurugan (2024); Chirgaiya and Rajavat (2023); Rawat and Rajavat (2024a); Rawat and Rajavat (2024b); Mishra et al. (2024), on machine-learning applications in juvenile-justice risk prediction (full publication details to be supplied by the authors).

<sup>19</sup>See generally, policy literature on the use of AI chatbots to support children's access to justice and on Children's Rights Impact Assessments (full publication details to be supplied by the authors).

**Suggestions for Optimum Use of AI in the Juvenile Justice System**

- Human-AI collaboration: AI should assist and inform human decision-makers rather than replace them, particularly in decisions that materially affect a child's welfare or legal status.
- Stakeholder partnerships: government, technology companies and community organisations should collaborate to develop ethical frameworks and shared best practices for AI use in this space.
- Continuous learning and validation: AI models deployed in juvenile justice settings should be regularly retrained and validated to preserve accuracy and reliability over time.
- Professional training: justice-sector and support-system professionals should receive structured training on the effective and ethical use of AI tools.
- Further research: the long-term impact of digital tools on child and adolescent neuro-development, including the effects of sustained interaction with AI systems, warrants dedicated study.
- Protection of child rights: institutions deploying AI within justice settings must adopt transparent, child-centred data-governance practices that comply with applicable law and actively embed children's rights safeguards, so that risks to children are identified and addressed before they cause harm.

**Conclusion**

The rapid advancement of AI over the past few years has prompted almost every sector to explore its applications, and its capabilities in data analysis, pattern recognition and automation give it real potential to strengthen mental-health support services more broadly.<sup>20</sup> Within the juvenile justice system specifically, however, that potential must be approached with considerable caution: AI can expose a juvenile in conflict with the law to greater scrutiny while simultaneously eroding the child-rights and privacy protections that the juvenile justice framework exists to uphold. Tools such as facial recognition and social-media monitoring risk placing a juvenile at greater risk of victimisation rather than rescuing them from the cycle of delinquency. Judicious use of AI – bounded by strict confidentiality, independent oversight and accountable, reliable institutions – is what will ultimately determine whether artificial intelligence proves to be an asset or a liability to the juvenile justice system.

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<sup>20</sup>See generally, literature on AI applications in mental-health service provision.