

## The Artificial Intelligence: Implication for The Identification and Protection of Child Victims of Deepfake

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**Abstract.** *Indonesia is the only nation that adheres to the Pancasila ideology, therefore it is natural to uphold human ethics and morals. However, the development of Artificial Intelligence technology has had a significant impact on various aspects of life, including the emergence of deepfake technology. This technology allows realistic manipulation of digital content, including the creation of illegal content such as child pornography. This phenomenon raises serious challenges in law enforcement, especially in Indonesia which is facing increasing cases of digital child exploitation. This research aims to examine legal aspects related to deepfake child pornography in Indonesia, identify challenges to law enforcement, and provide recommendations for strengthening legal regulations and implementation. This research aims to analyze law enforcement and tracking child victims of crimes using artificial intelligence. The analytical data processing in this research uses normative juridical studies, the results of secondary data processing are then analyzed as to how the phenomenon is in today's society. So appropriate analysis is expected to be produced to answer legal challenges facing current developments. The results show that it is essential to regulate a clear legal system regarding the protection and tracking of victims as well as legal ethics that are relevant to a civilized nation. This research presents a cross-disciplinary approach that combines artificial intelligence technology, cyber-criminal law, and child protection ethics, an area that has not been previously studied in an integrated manner in Indonesian legal literature. The focus on children as victims of deepfake content places this issue within the framework of protecting vulnerable groups based on cutting-edge technology.*

**Keywords:** Artificial; Child; Deepfake; Intelligence; Technology.

## 1. Introduction

That independence is the right of all nations, including the right of every citizen to obtain peace and harmony in social life. Society, including children, in the current era, public spaces, even in domestic life or at home, are no longer safe. There are many threats of incest even due to technological advances. The development of artificial intelligence (AI) technology has had a significant impact on various aspects of life, including in the fields of criminal law and child protection. One product of AI that raises serious concerns is deepfake technology, namely the manipulation of images, videos, or audio that appear authentic but are actually the result of digital engineering. When this technology is used to exploit children, including in the form of digital child pornography content, the challenges faced by law enforcement officials and child protection stakeholders become increasingly complex (Chesney & Citron, 2019). Dishonesty is nothing new. The ability to distort reality has now taken a leap with the advent of “deep falsehood” technology. This capability makes it possible to create video and audio of people saying and doing things they never did or said (Chesney & Citron, 2019).

The term deepfake is now boomeranging (Kugler & Pace, 2021). Although deepfakes were initially used for entertainment and digital creativity, the technology has been misused for criminal purposes, including online sexual exploitation of children (Ida Musofiana, Muhammad Rustamaji, 2023). Deepfake cases involving children not only cause deep psychological trauma but also complicate the process of identifying victims, considering that the content can include the faces of children who are not physically involved (WHO, 2021). This is where AI shows the paradox of its role: on the one hand it is an instrument of the perpetrator, but on the other hand it has great potential to help identify and protect victims through facial recognition technology, pattern recognition, and digital forensics.

Cases of digital-based child sexual exploitation are increasing, and victim identification is becoming increasingly difficult when children's faces are faked or manipulated with deepfake technology (Darmawan et al., 2025). This is where the role of AI becomes paradoxical: on the one hand it is a tool for crime, but on the other hand it also has the potential to be an instrument for tracking and identifying victims if developed ethically and legally (Br, 2025).

Ethical challenges arise related to the use of AI technology in processing children's sensitive data and their rights to privacy, as regulated in the Convention on the Rights of the Child as well as national legal instruments such as the Child Protection Law in Indonesia (Nanda, 2021). Legally, there are no regulations that explicitly regulate the use of AI in the context of identifying child victims, especially regarding deepfake content (Prayoga & Tuasikal, 2024). This legal vacuum creates a gray space that can be exploited by cybercriminals. Therefore, this study is important to analyze the implications of using AI in identifying and protecting child

victims of deepfake content, both in terms of legal effectiveness and from an ethical and human rights perspective.

The deepfake phenomenon has attracted the attention of academics and legal practitioners in recent years, especially regarding threats to privacy, national security, and the integrity of digital information. (Chesney & Citron, 2019) in their article entitled *Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security*, was one of the pioneers in identifying the dangers of deepfakes to individual rights and the legal process. They highlight the need for regulatory updates to respond to misuse of this technology. Another study by (Westerlund, 2019) discusses how AI, including machine learning and facial recognition, can be used in the criminal justice system. However, the research still focuses on the role of AI in the investigative process in general, without paying special attention to child victims or deepfake-based sexual content. Likewise, the article by (McStay, 2020) discusses the ethical aspects of AI in emotion tracking and surveillance but does not address child protection aspects specifically (Kristiyenda et al., 2025).

This research also considers Indonesia's position as a country still in the development stage of its cyber legal framework, which requires synchronization between national instruments and international legal principles, especially in protecting children from digital exploitation (Unicef, 2020). The confluence of theoretical frameworks with AI technologies in criminal profiling catalyzes a transformative shift in the field. This integration deepens analytical rigor and predictive precision and equips law enforcement (Haley & Burrell, 2025). The use of artificial intelligence, namely deepfakes, in the creation and distribution of pornographic content provides a deeper understanding of how legal regulations in Indonesia can be applied to deal with the misuse of this technology, as well as the extent to which existing regulations are able to protect victims from crimes involving deepfake technology (Syahirah et al., 2025).

This article aims to answer the main question: what are the legal and ethical implications of using AI in the process of identifying and protecting child victims of deepfake content? This research presents a cross-disciplinary approach that combines artificial intelligence technology, cyber-criminal law, and child protection ethics, an area that has not been previously studied in an integrated manner in Indonesian legal literature. The focus on children as victims of deepfake content places this issue within the framework of protecting vulnerable groups based on cutting-edge technology.

## **2. Research Methods**

This research uses normative legal methods approach, to answer the main questions regarding the legal (Musofiana, 2015), and ethical implications of using artificial intelligence in the identifying and protecting children as victims of deepfake content. This type of research is normative legal research, with a

doctrinal approach to examine legal norms (Said, 2018) governing the use of artificial intelligence, child protection, as well as legal provisions relevant to digital crimes, especially deepfakes that target children. This research also uses a socio-legal approach to understand the context of the application of legal norms in practice as well as the ethical dimensions that arise as a result of the use of artificial intelligence technology in the criminal justice system. The approach used is a statutory approach to reviewing national and international regulations. A conceptual approach to identify key concepts such as artificial intelligence ethics, child digital victimization, and artificial intelligence-based digital forensics.

Data collection method using documentation studies of investigative reports (Filice et al., 2022), research results from international institutions, as well as media publications regarding incidents of children's deepfake content. Indirect observation of the artificial intelligence system used in the detection and analysis of digital content containing child exploitation. and Data analysis was carried out qualitatively with a descriptive-analytical approach. Normative data (WHO, 2021) is analyzed to identify suitability and legal gaps regarding the phenomenon (Alkhatabi et al., 2024) of using AI in child protection. Meanwhile, empirical data is analyzed to understand the extent to which AI technology is used effectively, ethically, and legally in detecting and addressing child deepfake content. The analytical method used is prescriptive analysis, to provide normative arguments and alternative regulatory solutions.

### **3. Results and Discussion**

#### **3.1. Integration of Cross-Disciplinary Approaches in the Context of Child Protection in the Artificial Intelligence Era**

This research found that the use of AI in the context of law enforcement against crimes based on deepfake content is still fragmentary in legal practice in Indonesia. There is no legal framework that explicitly regulates the use of AI in tracking and identifying child victims. The approach taken so far has been sectoral, where cybercriminal law only takes action against perpetrators without adequate technical instruments to identify victims proactively, especially in cases of deepfake-based visual manipulation.

Several relevant laws and regulations, such as Law No. 1 of 2024 concerning Information and Electronic Transactions, Law No. 44 of 2008 concerning Pornography, and Law No. 17 of 2016 which are laws that stipulate Government Regulation instead of Law No. 1 of 2016 concerning the Second Amendment to Law No. 23 of 2002 concerning Child Protection, but do not specifically regulate the use of AI in this context. This causes law enforcement officials to face challenges in identifying and taking action against criminals who use deepfake technology to exploit child. This research

emphasizes the need for synergy between three main domains to protect child victims of AI-based sexually charged digital content (Hamamah, 2020):

- a. **AI Technology and Digital Forensics:** The use of AI technology in digital forensics can help in the identification and tracking of child victims in deepfake cases. However, limited access to advanced technology and a lack of technical training for law enforcement officers are significant obstacles (Prayoga & Tuasikal, 2024).
- b. **Criminal Law and Child Protection Law:** Legal protection for child victims of deepfakes still faces challenges (Siibak & Mascheroni, 2021) (Westerlund, 2019), especially in terms of regulatory (Aliyeva et al., 2024) updates that can accommodate technological developments. Synchronization between the Information and Electronic Transactions Law and the Sexual Violence Crime Law is very necessary to provide comprehensive protection (Ida Musofiana, Muhammad Rustamaji, 2023) (Hernawan et al., 2025) (Apriana et al., 2025).
- c. **Data Processing Ethics and Children's Privacy Rights:** The use of artificial intelligence in the identification of child victims (Musofiana et al., 2020) raises ethical questions, especially regarding privacy and protection of personal data. Without a clear ethical framework, the use of artificial intelligence risks violating children's rights and internationally recognized child protection principles (Siibak & Mascheroni, 2021).

These three aspects have never been combined systematically in Indonesian legal analysis, even though deepfake-based crimes are very complex and transdisciplinary. The use of AI to identify child victims in cases of digital exploitation, such as deepfake pornography, poses significant risks to children's privacy and rights (Chisholm, 2014). Artificial intelligence systems often require sensitive personal data, including images, voice recordings, and biometric information of children, to train and operate detection algorithms. Without a clear ethical and regulatory framework, the processing of this data may violate internationally recognized child protection principles (Muhammad Rustamaji et al., 2018).

The media is starting to highlight the risks of false positives, privacy violations, and lack of accountability in the use of artificial intelligence for child protection. Artificial intelligence algorithms that are complex and difficult to monitor are known as "black boxes" that can make it difficult to track if something goes wrong. The media is also starting to highlight the dilemma between security and digital freedom as a trade-off that is not always balanced (idscipub, 2024).

In Indonesia, there is no specific ethical and regulatory framework that regulates the use of artificial intelligence in the context of identifying and protecting child victims of digital exploitation. Even though Law No. 27 of 2022 concerning Personal Data Protection has been passed, its implementation in the context of artificial intelligence and child protection is still unclear (Astuti, 2020). This raises concerns that without adequate regulation, the use of artificial intelligence could violate children's rights (Krasteva & Krastev, 2024) and internationally recognized child protection principles (Sediyono, 2019) .

Artificial intelligence related to personal data has the potential for abuse, especially if children's data is used without valid consent. The use of personal data must be by statutory provisions, and data controllers must ensure that the data is obtained and used legally.

### **3.2. Ethical Challenges in Using Artificial Intelligence to Identify Child Victims**

To ensure that the use of AI in the identification of child victims does not violate their rights, it is necessary to apply strict ethical principles. These principles include:

- a. Transparency, Users and stakeholders must understand how child data is collected, used, and stored by AI systems (Fatkhurrahman & Humsona, 2018).
- b. Accountability, AI developers and operators must be held accountable for decisions made by the system, especially if misidentification occurs (UNICEF et al., 2021).
- c. Non-discrimination: AI systems should be designed to avoid biases that could harm certain groups, including children from certain backgrounds (Blount, 2024).
- d. Privacy protection: Children's data must be strictly protected, and only used for lawful purposes and with appropriate consent (Siibak & Mascheroni, 2021).

Implementing these principles is important to ensure that AI technology is used ethically and does not harm the children it is intended to protect. Implementing these principles is important to ensure that AI technology is used ethically and does not harm the children it is intended to protect.

The principle of the best interests of the child is the main normative basis in child protection law in Indonesia, as regulated in Law No. 17 of 2016 concerning Amendments to Child Protection. This principle emphasizes that every decision and action relating to children (Muchlis, 2024) must prioritize the best interests of the child. However, in practice, this principle has not been technically spelled out in policies on the use of artificial intelligence by law



enforcement agencies. There are no operational guidelines that integrate these principles into the design and implementation of artificial intelligence systems for the identification and tracking of child victims in cases of deepfake content.

There is a significant lack of ethical regulations in the use of AI by law enforcement agencies in Indonesia, especially regarding methods AI System Governance and Accountability Standards: There are no national standards governing the governance and accountability of AI systems used to detect child victims. This includes a lack of guidance regarding algorithm transparency, independent auditing, and accountability mechanisms in case of misidentification. Protection of Children's Biometric and Visual Data (Yunani & Imih, 2024), even though Law No. 27 of 2022 concerning Personal Data Protection has been passed, its implementation in the context of protecting children's biometric and visual data is still unclear. Sensitive data such as images and voice recordings of children taken online are vulnerable to misuse without strict regulations. Remediation Procedures for Misidentification (Pasaribu, 2024) by Artificial Intelligence Systems: There are no clear and standardized procedures for remediation if an artificial intelligence system misidentifies a child as a victim (Gultom et al., 2025). This includes the absence of mechanisms for data correction, notification to affected parties, and restoration of violated children's rights.

This vacuum in ethical regulations has serious implications for children's privacy and protection rights (Sediyono, 2019). Without a clear legal and ethical framework, the use of AI risks violating children's rights, including the right to privacy, protection of personal data, and fair treatment (Astuti, 2020). This may also result in public distrust of law enforcement agencies and the AI technology used. A study by the Eastasouth Institute highlights that the rapid development of AI poses significant challenges to digital privacy in Indonesia, and the current legal framework is inadequate to address these issues (Cahyono et al., 2025).

The government needs to develop a national ethics framework that regulates the use of AI in law enforcement, by adopting international principles and adapting them to the Indonesian context. Implementing AI Governance Standards: Governance standards are needed that regulate the transparency, accountability, and auditability of AI systems used by law enforcement agencies.

#### 4. Conclusion

The use of artificial intelligence (AI) in the process of identifying and protecting child victims of deepfake content presents both opportunities and serious challenges in the context of law and ethics. On the one hand, AI has the potential

not only to accelerate victim tracking through sophisticated digital forensic technology, but also on the other hand, the absence of an adequate legal and ethical framework including governance standards, protection of children's biometric data, and remediation procedures in the event of errors makes its use prone to violating the principle of the best interests of the child. Law enforcement in Indonesia is still sectoral and reactive, unable to systematically integrate aspects of technology, child protection law, and digital ethics. Therefore, a policy that is transdisciplinary and based on the principle of children's human rights is needed to ensure that AI technology does not become a new threat to law enforcement and the protection of child victims of digital exploitation.

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Law No. 44 of 2008 concerning Pornography

Law No. 17 of 2016 which are laws that stipulate Government Regulation instead of Law (Perpu) Number 1 of 2016 concerning the Second Amendment to Law No. 23 of 2002 concerning Child Protection

Law No. 27 of 2022 concerning Personal Data Protection

Law No. 1 of 2024 concerning Information and Electronic Transactions