

Topic: Human Right Issues of Artificial Intelligence (AI) Gaps and Challenges, and Affected Future Legal Development in Various Countries

Legal Implications of Algorithm Use in Decision-Making Processes: Challenges and Solutions

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Abstract. *In this article, researchers attempt to delve deeply into the challenges and solutions associated with the use of algorithms in the legal decision-making process. They explore sensitive issues such as transparency, discrimination, and accountability, while emphasizing how technology can be utilized as a tool to strengthen, rather than undermine, principles of justice. By elucidating the challenges faced and offering perspectives on potential solutions, we hope to make a meaningful contribution to the trajectory of legal development in this digital era. Researchers have found that challenges related to algorithm use encompass privacy, discrimination, accountability, and transparency issues. Therefore, it is crucial for society, regulators, and other stakeholders to comprehend the associated legal implications and seek appropriate remedies. Possible solutions include enhancing transparency in algorithm usage, implementing social impact and ethical evaluations in algorithm development and deployment, and developing a regulatory framework that is more responsive and adaptable to technological advancements. Additionally, there is a need for collaboration between the government and various sectors of society to develop adequate and responsive regulations to technological developments.*

Keywords: *Algorithms; Decision-Making Process; Discrimination; Privacy; Transparency Issues.*

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1. Introduction

In an increasingly advanced digital era, the use of algorithms in the legal decision-making process has become increasingly common, including in various fields such as finance, health and education. Algorithms, as rules or procedures carried out by computers to solve problems or carry out certain tasks, promise high efficiency and accuracy in decision making.

An algorithm is a clearly defined series of steps or instructions to solve a problem or carry out a task. In the context of computing, an algorithm is a logical framework used by computers to process data, solve mathematical problems, or produce decisions based on the information provided. In general, an algorithm can be thought of as a recipe or step-by-step guide that describes how to perform an action or achieve a goal.¹

On the other hand, artificial intelligence (AI) refers to the ability of computers or computer systems to imitate human behavior, such as learning from experience, making decisions, and completing tasks that require human thinking.² AI covers a wide range of techniques and approaches, from machine learning to pattern recognition, natural language processing and robotics. The main goal of AI development is to create systems that can think, learn, and act autonomously, with a level of intelligence that approaches or even exceeds human capabilities. In the context of practical applications, algorithms are often the main components of AI systems. For example, in machine learning, algorithms are used to organize the learning process from data and determine how to make predictions or decisions based on discovered patterns. Therefore, although algorithms and AI are different concepts, they are often closely related and complementary in the development of advanced information technologies.³

In recent years too, algorithms have played an important role in the decision-making process, both in the context of computing and everyday life. In the world of computing, algorithms are used in various applications to support decision making. For example, in the field of artificial intelligence, algorithms are used in machine learning to identify patterns from existing data and make predictions or decisions based on those patterns. In stock trading, algorithms are used to analyze financial markets in real-time and make asset purchase or sale decisions based on price movements and other factors.⁴

¹ Poole, D., Mackworth, A., & Goebel, R. (1998). Computational intelligence: A logical approach. Oxford University Press. p. 242

² Russell, S. J., & Norvig, P. (2016). Artificial intelligence: A modern approach (3rd ed.). Pearson, p. 116.

³ Nilsson, N.J. (1998). Artificial intelligence: A new synthesis. Morgan Kaufmann, p. 35.

⁴ Cormen, T.H., Leiserson, C.E., Rivest, R.L., & Stein, C. (2009). Introduction to Algorithms (3rd ed.). MIT Press. p. 76.

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Outside the world of computing, algorithms are also used in various aspects of daily life to assist decision making. In the banking industry, algorithms are used to analyze credit applicants' financial data and provide credit risk assessments based on factors such as credit history, income, and assets. Algorithms are also used to monitor financial transactions and identify suspicious patterns that may indicate fraudulent or other illegal activity. In addition, algorithms are also used to analyze investment portfolios and provide investment recommendations based on financial goals, risk tolerance and investor preferences.⁵ Then, in the human resources (HR) recruitment industry, algorithms are used to analyze job criteria and candidate profiles or match the most suitable candidates to specific positions, assessing candidate qualifications based on information provided in CVs, cover letters and online assessment tests. Many companies use AI algorithms to make hiring decisions based on data collected about candidates, such as abilities, experience, and other criteria.⁶

Furthermore, in the justice system, algorithms have also begun to be widely used. For example, to assist judges in determining the appropriate sentence in certain cases, based on factors such as the crime, the perpetrator's track record, and applicable legal guidelines. Algorithms are also used to carry out probation supervision, such as monitoring the behavior of individuals placed under probation supervision and providing warnings or recommendations for action if there are indications of violations of probation conditions. In developed countries, algorithms are also starting to be widely used to select the most suitable jury panel for a case based on participant characteristics and other relevant factors.⁷

The application of algorithms in these areas helps improve efficiency, accuracy, and consistency in decision-making, but also raises challenges related to fairness, privacy, and accountability that need to be considered and addressed judiciously. Algorithms can lead to unintentional bias, discrimination, and human rights violations if not managed properly.⁸

One of the main challenges in using algorithms is related to fairness in decision making. Algorithms are often programmed using historical data that reflects existing inequalities and biases in society. This can cause algorithms to provide unfair or discriminatory decisions against certain groups. For example, in the context of courts, algorithms used to determine

⁵ Hand, D. J., Henley, W. E., & Yang, G. (1996). The use of classification trees for bio-medical diagnosis. *Statistics in Medicine*, 15(4), p. 361-377.

⁶ Landers, R.N., & Schmidt, G.B. (2016). Future trends in preemployment testing. *Personnel Psychology*, 69(1), p. 61-80.

⁷ Rudin, C., & Ustun, B. (2019). Learning for Decision Making. In *The Oxford Handbook of AI Ethics* Oxford University Press, pp. 265-284.

⁸ Angwin, J., Larson, J., Mattu, S., & Kirchner, L. (2016). Machine bias. *ProPublica*. p. 23

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sentences can reinforce existing racial or economic inequalities, thereby exacerbating systemic injustices.⁹

Another concern related to the use of algorithms is the lack of transparency and accountability. Many algorithms are complex and difficult for humans to understand, making it difficult to know how decisions are made and what factors influence those decisions. This hinders individuals' ability to challenge unfair or discriminatory decisions, as well as reducing the accountability of service providers or decision makers who use such algorithms.¹⁰

Algorithms that do not consider the principles of fairness and equality in the decision-making process can produce decisions that are not sensitive to individual needs and rights. For example, algorithms in the justice system that hand out harsher sentences to minority groups can reinforce inequality and violate human rights. A study conducted by Buolamwini and Gebru (2018) showed that facial recognition algorithms from several large technology companies had lower accuracy rates for dark-skinned individuals and women compared to white and male individuals. This shows the potential for bias in the algorithm which could cause indirect discrimination against certain groups.¹¹ To deal with this impact, it is necessary to have legal responsibility in algorithm-based decision making. This responsibility needs to involve various aspects, including compliance with applicable regulations, protection of individual rights, and accountability for the resulting decisions.

Organizations that use algorithms in their decision-making processes are responsible for ensuring that they comply with relevant rules and regulations, such as data protection, anti-discrimination and human rights regulations. In addition, organizations must also ensure that the algorithm does not have a negative impact on certain individuals or groups, such as privacy violations or discrimination.

The importance of legal responsibility in algorithm-based decision making has been recognized by many countries and regulatory agencies. For example, the European Union has implemented the General Data Protection Regulation which regulates the use of personal data and provides rights to individuals regarding the protection of their data. In the United States, the Federal Trade Commission is responsible for enforcing laws related to unfair or misleading business practices, including in the context of the use of algorithms. Algorithm-based decision

⁹ Barocas, S., & Selbst, A. D. (2016). Big data's disparate impact. *California Law Review*, 104(3), p. 671-732.

¹⁰ Zarsky, T. Z. (2016). The trouble with algorithmic decisions: An analytical road map to examine efficiency and fairness in automated and opaque decision making. *Science, Technology, & Human Values*, 41(1), 118 -132.

¹¹ Buolamwini, J., & Gebru, T. (2018). Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification. *Conference on Fairness, Accountability and Transparency*. p. 55.

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making must also take into account the principles of ethics and justice. The study by Selbst and Barocas (2018) highlights the importance of considering the ethical implications of the use of algorithms in decision making, including their impact on individual rights and society as a whole. By paying attention to various aspects of legal responsibility, organizations can minimize legal risks and maintain integrity in the use of algorithms in decision making.¹²

However, managing AI algorithms is not easy. The challenges in enforcing laws related to decisions produced by algorithms are various. First, algorithms are often complex and difficult to understand for individuals without sufficient technical background. This makes it difficult to determine how algorithms make decisions and whether those decisions comply with applicable law.¹³

Second, the lack of transparency in the decision-making process by algorithms is a challenge in enforcing the law. Many algorithms do not provide visibility or explanation of what factors are considered in making decisions. Without sufficient transparency, it is difficult to determine whether algorithms comply with the principles of fairness, are non-discriminatory, and comply with applicable laws.

Third, a lack of understanding of the legal implications of using algorithms is also a challenge. Current laws and regulations may not fully consider or regulate the use of algorithms in decision making. This can make it difficult for law enforcement agencies to determine whether a decision generated by an algorithm violates the law or not, as well as how to deal with violations that occur.

In short, amidst the digital revolution that has hit various sectors, the use of algorithms in the decision-making process has become a common sight. From determining creditworthiness to setting penalties in the justice system, algorithms are used to facilitate faster and more efficient decisions. However, behind these technological advances, a series of pressing questions arise: what are the legal implications of the use of algorithms in decision processes? What are the challenges faced in dealing with increasingly sophisticated algorithms? And, most importantly, what solutions can we find to safeguard justice and human rights in the era of artificial intelligence?

In this article, researchers will explore in depth the challenges and solutions associated with the use of algorithms in the legal decision process. Researchers will dive into sensitive issues

¹² Selbst, A.D., & Barocas, S. (2018). The Intuitive Appeal of Explainable Machines. *Fordham Law Review*, 87(3), p. 1085-1156.

¹³ Diakopoulos, N. (2016). Accountability in algorithmic decision making. *Communications of the ACM*, p. 56-62.

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such as transparency and accountability, while highlighting how technology can be used as a tool to strengthen, not undermine, principles of justice. By outlining the challenges faced and offering views on possible solutions, researchers hope to make a meaningful contribution to the direction of legal development in this digital era.

2. Research Methods

This research utilizes the Case Study method. Case Study involves the identification and analysis of cases involving the use of algorithms in legal decision-making processes. These case studies can provide in-depth insights into the legal implications that may arise from the use of algorithms in different contexts.

In discussing this topic, researchers conducted a literature review of previous research. This literature review provides a comprehensive overview of the various issues and perspectives related to the use of algorithms in decision processes. By understanding the existing literature, researchers can identify gaps in knowledge and focus on important areas to explore. The literature review is as follows:

1. Barocas, S., & Selbst, A. D. (2016). Big Data's Disparate Impact. This article discusses the disparity impact of the use of algorithms in decision making, particularly in the context of discrimination and disparities that may arise in big data analysis.
2. Diakopoulos, N. (2016). Accountable Algorithmic Decision-Making: A Review and Framework for Development. Diakopoulos discussed a framework for building accountable algorithms for decision making, highlighting the importance of transparency, accountability and fairness.
3. Goodman, B., & Flaxman, S. (2016). European Union Regulations on Algorithmic Decision-Making and a "Right to Explanation". This article discusses European Union regulations relating to the use of algorithms in decision processes, with a focus on the right to explain decisions produced by algorithms.
4. Pasquale, F. (2015). The Black Box Society: The Secret Algorithms That Control Money and Information. Pasquale discusses issues related to privacy, transparency, and accountability that arise from the use of algorithms in various contexts, including banking, insurance, and justice.
5. Zarsky, T. (2016). The Trouble with Algorithmic Decisions: An Analytic Roadmap to Examine Efficiency and Fairness in Automated and Opaque Decision Making. Zarsky provides a critical view of the challenges and risks associated with the use of algorithms in decision making, and offers analytical guidance for evaluating the efficiency and fairness of algorithms.

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6. Burrell, J. (2016). How the Machine 'Thinks': Understanding Opacity in Machine Learning Algorithms. This article discusses the opacity that may occur in machine learning algorithms and its implications for the decisions produced by the algorithm.

In this article, researchers will explore in depth the challenges and solutions related to the use of algorithms in the legal decision process. Researchers will dive into sensitive issues such as transparency, discrimination, and accountability, while highlighting how technology can be used as a tool to strengthen, not undermine, principles of justice.

3. Results and Discussion

3.1. Discussion

Current regulations in Indonesia regarding the use of artificial intelligence or AI algorithms still have a number of limitations that need to be taken into account. First, existing regulations tend not to provide specific details regarding the use of AI algorithms in various fields, such as finance, health or industry. This causes companies and institutions to lack clear guidelines to regulate the use of algorithms effectively and safely.

Second, limitations related to privacy protection and data security are serious problems in the use of AI algorithms. Although there are laws regulating the protection of personal data, there are no specific provisions governing how AI algorithms must treat and protect this data. This may lead to the risk of data misuse or privacy breaches. In Indonesia, the law that regulates personal data protection is Law Number 11 of 2008 concerning Electronic Information and Transactions (UU ITE), especially Article 26 concerning Personal Data Protection. However, this regulation is still considered not comprehensive enough to properly handle all aspects of personal data protection. Therefore, currently the Indonesian government is preparing a Personal Data Protection Law that is more comprehensive and in accordance with international data protection standards such as the General Data Protection Regulation (GDPR) in the European Union.

Third, the challenge of determining legal responsibilities related to decisions generated by AI algorithms is also a regulatory limitation that needs to be overcome. Until now, there are no clear provisions regarding who is responsible if problems or losses occur due to decisions taken by AI algorithms. This can give rise to legal uncertainty and difficulties in enforcing laws related to the use of AI algorithms.

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The challenges faced by Indonesia in regulating the use of AI algorithms make it difficult for this country to create related regulations. Especially when it comes to setting appropriate standards and frameworks. This is caused by the complexity and dynamics of AI technology which continues to develop rapidly. Existing standards and frameworks may no longer be relevant or sufficient to address new challenges that arise as technology develops.

Uncertainty in setting standards can also be caused by a lack of clarity about the social, economic and ethical impacts of AI use. The use of AI algorithms can have far-reaching and complex consequences, including implications for employment, privacy, justice, and security. Therefore, setting standards that take into account these various aspects requires deep understanding and extensive discussions among stakeholders.

In addition, the complexity of setting standards is also influenced by the intrinsic characteristics of the AI technology itself. AI algorithms are often very complex systems and difficult to understand, even for experts. This makes it difficult to develop standards that can be applied consistently and effectively across different contexts of use.

To overcome these difficulties, collaboration between government, industry, academia and civil society is needed in developing appropriate standards and frameworks for the use of AI algorithms. Open and participatory discussions can help identify challenges and opportunities related to the use of AI, and formulate solutions that are adequate and acceptable to all parties. In addition, there needs to be a commitment to continuously monitor and evaluate the standards that have been set so that they remain relevant and effective as AI technology develops.

Algorithms themselves have great potential to influence the decision process because of their ability to analyze data quickly, discover hidden patterns, and produce recommendations or decisions based on the information provided. On the other hand, algorithms can increase objectivity, efficiency and consistency in decision making if managed properly. Algorithms can help identify patterns that may not be detected by humans, as well as reduce reliance on subjective decisions or based solely on intuition.

However, in regulating the use of algorithms for decision making, it is necessary to pay attention to several things, including transparency, accountability and fairness. Transparency in the algorithmic decision-making process is important to ensure that affected individuals can understand how the decision was arrived at. Accountability is also needed so that there is clear responsibility if problems or losses occur due to algorithm decisions. Additionally, efforts

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must be made to ensure that algorithms do not cause or exacerbate existing injustices or discrimination in society.

This means that there needs to be effective regulation to consider various aspects of AI algorithms and accommodate the interests of all stakeholders, including users, consumers and society as a whole. Comprehensive, evidence-based regulation can help ensure that algorithms are used responsibly and provide maximum benefit to society.

To overcome these limitations, efforts are needed to develop more comprehensive and relevant regulations so that they can clearly regulate the use of AI algorithms. These regulations must pay attention to aspects such as data protection, privacy, security and legal responsibility, as well as following technological developments and international best practices. In this way, Indonesia can exploit the positive potential of using AI algorithms while minimizing the risks and negative impacts.

3.2. Solutions to Overcome Challenges

In this section, several solutions will be presented to overcome the challenges of using algorithms in the legal decision-making process, including; increasing transparency in the use of algorithms, implementing social and ethical impact evaluations in the development and implementation of algorithms, and developing a regulatory framework that is more responsive and adaptive to technological developments.

1. Increase transparency in the use of algorithms

Increasing transparency in the use of algorithms is an important step to ensure that decisions produced by algorithms can be understood, verified and accounted for by the stakeholders involved. Here are some strategies to increase that transparency:

a. Information Disclosure

Organizations that use algorithms must disclose information about how the algorithm operates, including the type of data used, factors considered, and the logic behind decision making. This will provide a better understanding of how algorithms influence the decision process.

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b. Auditing and Inspection

Conducting independent audits of algorithms and the data used can help verify the accuracy, fairness, and reliability of algorithms. This audit must be carried out by an independent party who is skilled in analyzing algorithms.

c. Creation of Transparency Tools

Developing tools or platforms that allow users to understand and examine decisions produced by algorithms can increase transparency. An example is a data visualization tool that shows the factors that influence decisions.

d. Training and Education

Educating stakeholders about how algorithms work and their impact on decision making can help increase transparency. This can be done through training, seminars, or other educational materials.

e. Regulations that Strengthen Transparency

Regulations that require organizations to disclose information about their algorithms and decision processes could be an effective step to increase transparency. This includes requirements to explain the algorithm and allow access for external parties to examine it.

2. Apply social and ethical impact evaluation in algorithm development and implementation

The next solution to overcome the challenges of using algorithms in the legal decision-making process is to apply social and ethical impact evaluation in the development and implementation of algorithms. Implementing social and ethical impact evaluations in the development and implementation of algorithms is a crucial step to ensure that the technology is used responsibly and in accordance with moral and social values. Here are some steps you can take in the process:

a. Social Impact Study

Conduct comprehensive social impact studies before and during algorithm development. This involves identifying the potential positive and negative impacts that may arise from the use of algorithms in various social, economic and cultural contexts.

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b. Ethical Assessment

Conduct ethical assessments to identify relevant ethical values and principles that should be considered in the development and implementation of algorithms. This includes considering principles such as fairness, transparency, privacy, and non-discrimination.

c. Consultation with Stakeholders

This activity involves diverse stakeholders, including civil society, academics, and legal practitioners, in the algorithm development process. This helps ensure that multiple perspectives and interests are considered.

d. Testing and Monitoring

Conduct thorough algorithm testing before widespread implementation, and monitor its impact after implementation. This makes it possible to detect and address problems that may arise, as well as make necessary adjustments.

e. Training and Awareness

Provide training to developers, users, and other stakeholders on the social and ethical implications of using algorithms. This helps raise awareness of the issues involved and promote responsible practices.

3. Develop a regulatory framework that is more responsive and adaptive to technological developments

Developing a regulatory framework that is more responsive and adaptive to technological developments is important in facing the challenges that arise from the use of algorithms in decision processes. Here are some steps you can take in this process:

a. Collaboration and Consultation

Involve various stakeholders, including government, academia, industry and civil society, in the regulatory development process. This collaboration helps ensure that the resulting regulations take into account the various perspectives and interests involved.

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b. Continuous Monitoring and Evaluation

Implement a continuous monitoring and evaluation mechanism for existing regulations to identify weaknesses and make necessary changes in accordance with technological developments. This allows regulations to remain relevant and effective over time.

c. Flexible Framework

Develop a flexible and adaptable regulatory framework to accommodate rapid technological changes. This can include a principles-based approach, where regulations are aimed at achieving specific goals without unduly restricting innovation.

d. International Collaboration

Collaborate with other countries to develop regulations that are uniform or at least in line with international best practices. This helps reduce trade barriers and promotes consistency in technology regulation at a global level.

e. Stimulation of Responsible Innovation

Develop incentives and stimuli to encourage responsible innovation and take into account the social, ethical and environmental impacts of new technologies. This can be done through fiscal incentives, subsidies, or research and development programs.

3.3. Case study

The use of AI algorithms has been widely implemented in various countries, including Indonesia. A real example of the use of algorithms in Indonesia itself is present in the banking sector. Currently, many financial institutions, both banks and financial technology (fintech) companies, have adopted artificial intelligence (AI) technology in the credit assessment process. They evaluate a customer's credit history, income, and behavior to determine creditworthiness. The algorithms used are generally updated regularly using new training data. Several Indonesian financial and fintech institutions have utilized AI algorithms for decision making. For example, Bank Jombang, which in 2023, will take innovative steps by integrating artificial intelligence (AI) in credit analysis. This makes Bank Jombang the first BPR to apply AI technology to improve operational efficiency and credit-related decision making.¹⁴

¹⁴ Dani Pradana, May 6, 2024, "BPR Pertama Bank Jombang Meutilkan Analisa Kredit dengan AI", Available at website: <https://bankjombang.co.id/branding-bpr-pertama-bank-jombang-meutilkan-analisa-kredit-dengan-artificial-intelligence/>

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Apart from Bank Jombang, Bank Rakyat Indonesia (BRI) has also used AI algorithms in implementing the services they have. Named BRIBRAIN or "BRI Digital Brain Center", this government-owned bank is able to combine AI and analytical capabilities to improve interactions with customers, anti-fraud and risk analysis, credit scoring, and automation for smart services and operations.¹⁵

BRI has an AI recommendation system that has been implemented to select potential customers by considering data such as savings amount, loan history, demographic characteristics and location. With the use of AI algorithms, BRI has succeeded in increasing the conversion rate by 60% and improving the quality of debtor recruitment by 49% by 2023.

Meanwhile, for fintech in Indonesia, almost all of them have implemented AI in their operations. One of them is Akulaku, which has implemented machine learning for 98 percent of risk assessments so that it can provide safe, comfortable and healthy financial services for customers, including companies. The application of machine learning is also carried out to carry out risk analysis and anti-fraud to prevent and minimize manual errors, internal fraud and other errors that occur in conventional financing companies.¹⁶

Almost all banking systems and services in Indonesia have started using AI algorithms to help make operations easier and more efficient. However, the use of algorithms causes various problems in Indonesia. Several times Indonesia has been attacked by data leaks. In Indonesia, data leaks often occur and involve leading companies. In 2022, Indonesia was even dubbed an 'open source country' due to alleged data leaks involving a number of members of the State Intelligence Agency (BIN). The following are several examples of cases that occurred related to data leaks in Indonesia involving the use of AI algorithms.

1. Case of data leak of 91 million Tokopedia users

In 2020, there was a report of a data leak involving Tokopedia, one of the largest e-commerce platforms in Indonesia. Tokopedia was reported to have experienced a hack, in fact the number is estimated at 91 million accounts and 7 million merchant accounts. The perpetrator sells data on the dark web in the form of user ID, email, full name, date of birth, gender, cellphone number and password which is still hashed or encrypted. All are sold for US\$5,000

¹⁵ Andi Wibowo, Apr 25, 2022, "Analisa Kredit dengan Artificial Intelligence", Available at website:

¹⁶ Ani Kurnia, Apr 25, 2022, "Analisa Kredit dengan Artificial Intelligence", Available at website: <https://www.liputan6.com/tekno/read/3883696/akulaku-utilakan-machine-learning-untuk-lawan-fraud?page=2>

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or around Rp. 74 million. In fact, there are 14,999,896 Tokopedia accounts whose data can currently be downloaded.¹⁷

Tokopedia immediately responded to the report and formed an internal investigation team to investigate the claim. After an investigation, Tokopedia stated that there was no evidence to suggest that their security system had been hacked. However, they acknowledged that some user data, such as names and email addresses, may have been illegally accessed by third parties without permission.

2. Ransomware attack on Bank Indonesia

Then in 2021, there was a data leak from Bank Indonesia which amounted to 74GB. The number of hacked BI devices increased to 237 units. The data breach was carried out by the Conti ransomware gang.

3. Data leaks at BPJS Employment

In the first quarter of 2023, there was an alleged data leak of 18.5 million BPJS Employment users. The data was sold on a dark forum for IDR 153 million. In a post on Breach Forums, the online criminal known as Bjorka, who is quite well known in Indonesia, revealed that there had been a data leak of 19.5 million with the title 'BPJS Employment Indonesia 19 Million'. He also distributed 100 thousand data samples which included Population Identification Number (NIK), full name, date of birth, address, telephone number, email address, type of job and company name.

4. Data Theft of 15 Million Indonesian Sharia Bank (BSI) Users

In the second quarter of 2023, there is another suspected data leak involving BSI. Initially, the founder of Ethical Hacker Indonesia, Teguh Aprianto, revealed that BSI was the victim of a cyber attack using extortion or ransomware mode by Lock Bit hackers. The total data allegedly stolen reached 1.5 TB, including 15 million user data and passwords for internal access and BSI services, as well as customer personal information and loan details. Lock Bit gave BSI a 72 hour deadline to pay the ransom, with a deadline of May 15 at 21.09.46 UTC or May 16 2023 at 03.09.56 WIB. If not, the data obtained will be disseminated widely. Negotiations were reportedly unsuccessful. Lock Bit then disseminates the data. Some of the documents that were disseminated include two screenshots showing the words "Index of/Bank BSI/", which

¹⁷ Wahyu, Jun 21, 2022, "Kronologi Full 91 Juta Akun Tokopedia Bocor dan Dijual", Available at website: <https://www.cnnindonesia.com/technology/20200503153210-185-499553/kronologi-full-91-juta-akun-tokopedia-bocor-dan-dijual>

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contain documents with the titles "BSI Official Residence Files", "Akad_19 Apr 2022 Requirement Documents", and TAD BSM ID CARD.

Also in 2023, Indonesian society was shocked by the name Bjorka who leaked a lot of important state data. Bjorka, is famous for being able to hack important information in Indonesia, and has been in the spotlight since August 2022 regarding a series of data hacks in this country. The act of hacking by hackers is a crime that involves penetrating into another person's personal electronic system without permission, by illegally accessing data. Bjorka has claimed to have accessed several sites and documents owned by the public and the government, including NIK, addresses, telephone numbers, KTP numbers, cellular operator information, Kominfo data, involvement in the Munir murder case, IndiHome customer data, SIM card registration, KPU data, and even secret documents from the President of the Republic of Indonesia.

In response to public anxiety, the State Intelligence Agency (BIN) denied claims that important documents or letters from BIN to the President were leaked, stating that all such documents were protected. From the data hacking incident involving Bjorka, a new regulation emerged which was implemented by the government with approval from the President, namely Law No. 27 of 2022.

Law No.27 of 2022 is a law that regulates personal data protection, aims to ensure that individual rights are guaranteed in terms of protecting their personal data, and also to increase public awareness about the importance of maintaining privacy. This law was passed on October 19 2022 after receiving approval from the DPR and the President. This personal data protection is based on Article 28G paragraph 1 of the 1945 Constitution which states that everyone has the right to protection of their privacy, honor and property, as well as the right to feel safe and protected from threats or fear that violate their human rights.²¹. The purpose of enacting the Personal Data Protection Law is to safeguard and protect individual interests, uphold legal certainty, pay attention to the public interest, ensure benefits for society, prioritize the precautionary principle, achieve a balance between rights and obligations, uphold accountability, and maintain the confidentiality of information. regarding Personal step to protect the privacy and security of individual data if we refer to the case study mentioned. However, when it comes to AI algorithms, which often involve processing data on a large scale to produce predictions and decisions, there are more complex challenges.

Such regulations may provide an important basis for governing how personal data is processed and used, but in the context of AI, there needs to be special attention to algorithms and their use. Regulations should consider requirements for transparency in AI algorithms, ensuring that

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individuals can understand how decisions are made and how their data is processed. Regulations should set standards to ensure that AI algorithms are accurate and free from unintentional or discriminatory bias. In addition, there needs to be regulations that pay attention to the use of sensitive data and strictly regulate its use in the context of AI algorithms. Regulations must also be consistent with existing laws, including existing Personal Data Protection Laws and possibly other relevant laws.

Although the Personal Data Protection Law is a positive step, additional regulations or adjustments are still needed to ensure that the security of data related to AI algorithms is also properly protected. There is still a need for cooperation between government, regulatory institutions, industry and civil society to develop a framework that is comprehensive and responsive to technological developments.

4. Conclusion

The legal implications of using algorithms in the decision process have many challenges. First, existing regulations do not provide specific details regarding the use of AI algorithms in various fields, resulting in a lack of guidance for companies and institutions. Second, limited privacy protection and data security are a serious problem, where existing laws are not specific enough to regulate data protection related to AI algorithms. Third, legal responsibilities related to decisions produced by AI algorithms still have regulatory limitations. The solution that can be provided is to increase transparency in the use of algorithms, implement social and ethical impact evaluations in the development and application of algorithms and develop a regulatory framework that is more responsive and adaptive to technological developments and the need for cooperation between the government and various sectors in society to develop regulations that are adequate and responsive to technological developments. Recommendations: This research provides important recommendations for the public, regulators, and other stakeholders to understand the associated legal implications and seek appropriate solutions. Possible solutions include enhancing transparency in algorithm usage, implementing social impact and ethical evaluations in algorithm development and deployment, and developing a regulatory framework that is more responsive and adaptable to technological advancements. Additionally, collaboration between the government and various sectors of society is necessary to develop adequate and responsive regulations to technological developments.

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