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The Main Impact and Response of Artificial Intelligence in Taiwanese Society

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Abstract

Since the neural network was proposed in 1950 and developed into an expert system, the calculation of logical reasoning has been realized, and the hardware progress of algorithms led by Moore's Law has made a large number of data processing possible, and even the algorithm breakthrough brought by deep learning has also promoted the continuous development of integrated circuits. At this point, artificial intelligence can be described as in full swing, under this unstoppable trend of digitalization, it is expected that the development of artificial intelligence will have a certain degree of impact and impact on all countries in the world.

The technical characteristics of artificial intelligence are data-led rather than rule-led, attach importance to the effectiveness of statistics rather than normative effectiveness, and the processing of unstructured data, especially in words and images, which makes social science-related research need to be reflected and faced with new thinking. In addition, algorithms, computing power, and data are prerequisites for the success of deep learning, but deep learning has bottlenecks at the algorithm, computing power, and data levels. In response to The Baohong's suggestion, existing AI models lack common sense, so they may not be able to understand the concept of entities, fail to identify key influencing factors, and may lack ethics and may also leak personal privacy.

In recent years, Taiwan's government has vigorously advocated and enterprises continue to develop in the direction of artificial intelligence, and the development of artificial intelligence has also caused varying degrees of impact on all levels of society. In the foreseeable future of artificial intelligence, everyone expects the technological unconscious to know itself to some extent better than itself. In order to cope with the social problems that may arise from the development of artificial intelligence, it is the expectation of all parties to propose appropriate strategies in advance to make it develop positively.

This paper analyzes the main connotations of the four levels of ethics, law, economy and politics that Taiwan society is most vulnerable to the impact of artificial intelligence, and puts forward personal views, hoping to use this to attract more people's attention to the relevant impacts and impacts, and further think about coping strategies.

Keywords: artificial intelligence, technical features, unstructured, reflection, impact

1. Preface

The algorithm breakthrough brought by artificial intelligence in deep learning not only promotes the continuous development of integrated circuits, but also promotes the development of smart medical care. Under this unstoppable trend of digitalization, it is expected that the development of artificial intelligence will have a certain degree of impact and impact on all countries in the world. In recent years, while Taiwan's digitalization trend has been accelerated while the government has vigorously advocated and enterprises continue to develop in the direction of artificial intelligence, the development of artificial intelligence has also caused different degrees of impact on all levels of society.

The foundation of artificial intelligence technology, including statistics, econometrics, optimization theory, complexity theory, computer science and game theory, etc., all understand artificial intelligence from a larger architecture. /b10> In the development path of artificial intelligence, there are mainly two views, one is a relatively narrow view, called weak AI, basically the current applications, are all such artificial intelligence, such as speech recognition, data labeling and analysis, automatic driving, etc. The second is the broader view, that is, strong AI that can think like humans and all scientists are trying to move towards this goal.

Due to the technical characteristics of artificial intelligence, it is data-led rather than rule-led, attaches importance to the validity of statistics rather than normative effectiveness, and is unstructured data processing, prompting cross-domain researchers to face it with new thinking. In addition, algorithms, computing power, and data are prerequisites for the success of deep learning, but deep learning has bottlenecks and other problems at the algorithm, computing power, and data levels.

In order to cope with the social problems that may arise from the development of artificial intelligence, it is the expectation of all parties to propose appropriate strategies in advance to make it develop positively. How to promote the deepening and expansion of AI research and development achievements, consider in advance its impact on all levels of society, and take actions or measures to reduce risks, so as to achieve reliable AI for the purpose of data and model governance, including personal data protection, party rights protection, confidentiality and information security protection, trustworthy AI inspection, etc.; In addition, relevant units of the Taiwan Government have also entrusted relevant academic units to build a sharing platform to ensure data quality, maintain high-quality data through quality inspection and performance measurement, establish a hierarchical sharing mode of smart and open data, and enhance the R&D efficiency of artificial intelligence through one-stop service.

From the foregoing, this paper analyzes the main connotations of the four levels of ethics, law, economy and politics that Taiwan society is most vulnerable to the impact of artificial intelligence, and puts forward personal views, hoping to use this to attract more people to pay attention to the relevant impacts and impacts, and further think about coping strategies.

2. The Impact and Response of Artificial Intelligence to Ethics

2.1 The Impact of Artificial Intelligence on Ethics Regarding

The impact of artificial intelligence on ethics, there are several aspects.

2.1.1 On the Impact of Prejudice

Today, AI mostly uses supervised learning. That is, it will infer patterns based on the training data provided by the engineer, and then apply the rules to unknown data. The principle of this algorithm is that the AI learns on its own, which at first glance seems to be very efficient. However, once the data provided is not

comprehensive enough, or engineers fail to avoid discrimination, the results derived by AI can easily be biased.

Even if you find ways to provide diverse data to AI, invisible discrimination in human culture will also breed biased AI. Computer scientist Joanna Bryson and colleagues found that even if they did not specifically indicate correlation on the training materials provided (mainly text), the AI automatically determined that white names were associated with positive words such as love and smile, while names of people of color were associated with negative words such as cancer and failure, which were obviously affected by the intentional or unintentional discrimination that humans present in the text[1].

2.1.2 Initiative and Existential Threats

From the 2019 book Human *Compatible: AI and the Problem of Control*, published by AI guru Stuart Russell. The main root of the problem is that the artificial intelligence system only focuses on the set goal, and once it finds a strategy that can achieve the goal, it will follow this strategy desperately, such as an autonomous driving vehicle that may kill people on the road, but still drive to the destination; Or ask artificial intelligence to reduce carbon emissions, but find that the most efficient way is to exterminate humans, etc.

Nick Bostrom, a leading expert at the University of Oxford, said that if the artificial intelligence system of the future has values that are inconsistent with human values, then the imagination of malicious robot overlords may become a reality[2].

2.1.3 Addictive Algorithmic Threats

People are increasingly interacting with machines to complete everyday tasks, which involves issues of transparency and behavioral implications. Human attention and patience are limited, but the emotional energy of machines is not. While it may be beneficial for certain areas, such as customer service, the unlimited capabilities of machines can contribute to human emotional addiction to robots. In addition to these human-like robots, many apps are designed to use algorithms to make users addicted, such as Tinder's design to tie users to the AI-powered app for longer.

2.1.4 Threats of Misinformation and Forgery

By using AI to process images, videos and audio files into the original media and sound files, and changing the original intention of others, often with malicious intent. Unlike old photo and video editing techniques, deep fakes are designed to be easily mastered and used by people with little technical ability.

According to experts such as former NATO Secretary General Nina Shick, tampering with images and videos through deep fake could have a disastrous impact on the global order, such as Donald Trump's lip-synced video declaring nuclear war. During the last U.S. presidential election, Russia used fake news to hack and use similar techniques. This kind of information warfare is becoming commonplace, and it exists not only to change facts, but also to forcefully change certain opinions and attitudes.

2.2 The Response of Artificial Intelligence to Ethical Impact

In the face of the above-mentioned impact, perhaps we can think about countermeasures through the review of AI ethical principles. The internationally renowned AI ethical guidelines are respectively developed by the Institute of Electrical and Electronics Engineers; IEEE), the World Commission on the Ethics of Scientific Knowledge and Technology; COMEST) and the European Commission's High-Level Expert Group on Artificial Intelligence; AI HLEG).

2.2.1 Responses to the Impact of Prejudice

There is no quick fix to eliminate AI bias, but consultants like McKinsey suggest six potential ways forward for AI practitioners and business and policy leaders to consider:

- Understand where AI can help correct bias and where it can exacerbate it: Organizations will need to be up-to-date (e.g., those examples that have been biased) to understand how and where AI can improve fairness and where AI systems are experiencing difficulties.
- To establish processes to test and mitigate bias in the system: technology tools can highlight potential sources of bias and reveal the most impactful features in the data; Business strategies can be more consciously sampled to audit data and models to improve data collection; Transparency of processes and metrics can also help observers understand the relevant trade-offs.
- Fact-finding potential biases in human decision-making: As AI reveals more about human decision-making, leaders can consider how AI can help by identifying

long-overlooked biases.

- Fully explore how humans and machines can best work together: consider under what circumstances automated decision-making is acceptable and when humans should be continuously involved.
- Invest more in bias research, provide more data for research, and adopt a cross-domain approach: More progress will require cross-domain engagement, including ethicists, social scientists, and experts who best understand each application area of the process.
- Greater diversity in AI: A diverse AI community will be better able to anticipate, detect, and review unfair biases, and better engage with communities that may be affected by bias.

2.2.2 Response to Initiative and Existential Threats

Regarding the initiative and existential threat of AI, we can examine and consider countermeasures from the AI Code of Ethics. In the case of the IEEE Institute, because of its strong technical and application orientation, the proposed code of ethics for AI technology research and development and product operation and user personnel reveals that the purpose of AI research and development is not only to promote human welfare, and the system design is not value-neutral, but should build social ethics and values from the beginning of design, and the main target groups for the application of AI must be taken into account.

In 2017, COMEST published the Report of COMEST on Robotics Ethics, which defined robots as four characteristics: mobility, interaction, communication, and autonomy. Among them, autonomy refers to the ability to 'think' and make decisions based on the external environment without direct external control, so it can be regarded as an ethical norm covering AI. The report also argues that robot ethics is based on the principle of human responsibility covering 7 ethical values or principles such as human dignity, autonomy, privacy, non-harm, responsibility, goodwill, and justice, and explains the action responsibility of AI robots with the concept of distributed actor subjectivity, that is, robots only act on behalf of humans to carry out goals, and humans should still be responsible for AI behavior. However, as AI robots can display more autonomy, it is time to begin to have the identity of certain actors and bear some moral responsibility. The report emphasizes the technology-based ethical framework, that is, how to implement the aforementioned seven ethical values or principles, and the research and development of technology is the key.

In 2019, AI HLEG published the Ethics Guidelines for Trustworthy AI, the preamble of which states that a trustworthy AI architecture should contain three elements: legal, ethical, and sound; Chapter 1 points out that if AI is to be trustworthy, it must be based on four ethical principles supported by the EU Charter of Fundamental Rights and the International Bill of Human Rights: respect for human autonomy, harm prevention, fairness, and clear interpretation. Chapter 2 also points out that in order to achieve AI trustworthiness, the entire life cycle of the system needs to meet seven requirements: human subjectivity and monitoring based on respect for subjectivity, sound and safe technology and privacy based on injury prevention and data management, transparency of systems and business models based on clearly interpretable principles, diversity and inclusion, non-discrimination and fairness, promotion of social well-being and environmental friendliness, and willingness to take responsibility. Finally, Chapter 3 provides criteria for converting trustworthy features into actionable criteria that can be adapted to meet the required forms by research, development, use, and AI supervisors. From the foregoing, it can be seen that the target of the specification focuses on AI stakeholders, which can be called anthropo-centric trustworthiness of AI.

2.2.3 Response to Addictive Algorithmic Threats

Players spend too much time playing games and interacting with apps, and the intellectual power of medicine believes that addiction will cause addiction, so it is necessary to discipline the body to administer correction, and it will also affect the overall health quality. Therefore, from the individual to the population, the biological body has become the object of power governance, and the idea of regulating individual behavior can be applied both to the body that needs discipline and to the population that needs to be regulated[3].

2.2.4 Response to Misinformation and Forgery Threats

Regarding the misinformation and falsification

caused by AI, it seems that the regulatory and normative mechanism of AI can be started. From the international development, the European Commission announced the Ethics Guidelines For Trustworthy AI in April 2019, emphasizing that artificial intelligence should be a supporting role, respecting human autonomy, avoiding harm, maintaining fairness, being explainable, and being able to be supervised and retrospective decision-making process to avoid black-box decision-making by algorithms; In May 2019, Organization for Economic Cooperation and Development proposed that the principles of AI development should be sustainable for the benefit of people and the planet, respect democracy and the rule of law, human rights and diversity, and take into account the principles of transparency and accountability mechanisms. The Guidance for Regulation of Artificial Intelligence Application released by the White House Office of Science and Technology in January 2020 also emphasizes the measurement of risk and avoidance of harm, fairness and non-discrimination, transparency, emphasis on scientific evidence, and public participation in the legislative process, as the guiding principles for US government agencies to formulate AI-related norms. The United Nations Educational Scientific and Cultural Organization released a draft text of the recommendation on the ethics of artificial intelligence in November 2021, as a common value that member states can follow when formulating AI-related laws and policies. Principles and framework for action.

The internationally important principles and guidance are equally reflected in the public opinion's expectations for AI governance, and a survey of 1,200 people in Taiwan by professors Li Sixian, Liu Xiangyao, Zhang Zhengyun and others at Taiwan Normal University found that Taiwanese people are most concerned about the application of AI to avoid harm, followed by transparency and fairness. The survey also found a clear preference for citizen deliberation and legislature to set strict norms, reflecting concerns about emerging technologies and expectations for transparent governance, and echoing the guidance of international organizations.

3. The Impact and Response of Artificial Intelligence to the Law

3.1 The Impact of Artificial Intelligence on the Law

AI makes automated decisions through machine learning and deep learning algorithmic models, which is where the opportunities and threats of AI lie. False or misleading claims by AI can cause significant damage to the intended beneficiaries of society. The impact of AI on the law is wide-ranging, and the main impact on Taiwanese society is described below.

3.1.1 On the Impact of Social Surveillance

Most consumer devices, from mobile phones to Bluetooth-enabled light bulbs, use artificial intelligence to collect personal data in order to provide better, more personalized services. If the user agrees and the data collection is transparent, then this kind of personalization service is a good function, but if there is no agreement or transparency, this function will bring a bad experience to the user. When we lose our iPhone in a taxi or leave our keys in the middle of the couch cushion, the phone's tracking app can be useful. But sometimes, such as domestic violence survivors who want to hide their whereabouts, tracking personal information seems unsafe.

At a time when health big data and artificial intelligence applications have become a common application trend in medical research and development, the occurrence of new coronary pneumonia (COVID-19) has pushed AI technology to the stage of epidemic prevention, and countries have connected big data to monitor the footprints of confirmed patients or use electronic fences. When digital technology intervenes in public health and healthcare systems, it also raises subsequent human rights and privacy dilemmas[4].

3.1.2 On the Impact of Privacy

Taiwan's Personal Information Law predates the AI era, and the lack of clear definition of de-identification and the lack of independent and dedicated regulatory agencies are the main issues at present. De-identification refers to the use of code, anonymity, partial data or other means that make it impossible to identify a specific individual. However, the definition in the personal information law is not clear, and the concepts of heteronymization, pseudonymised, and delinking are mixed. The lack of a clearly defined standard for de-identification has made it a point of contention[5].

The collection part, including: the collection part, there are difficulties such as prior consent to

data collection, de-identification of data processing, and foresight before data use. In the processing part, there are algorithm black box operations, data bias copy traps, human bias or ignorance. The use of the part may cause difficulties such as differential treatment or discrimination, inability to provide causal explanations, etc.

3.1.3 On the Impact of Data Governance

The more complete the data collection, the more necessary it is to have a set of practices different from the past, and it is necessary to establish a system and concept of data governance; In addition, data quality is also an important link, data collection should avoid deviations or omissions, and when collating information, try to ensure that it does not cause unfairness or serious deviations.

3.2 The Response of Artificial Intelligence to the Legal Impact

3.2.1 Response to Social Surveillance

➢Restrictions on criminal investigations

Singapore, South Korea, Australia and other countries have also raised the issue of how governments should deal with personal data security, and the way they deal with it can also be used as a reference. For example, the Australian government has legislated that only the relevant units of the Ministry of Health can use the tracking information collected, and the police must first apply to the court if they need it. Subsequently, the Singapore government followed suit by passing legislation in February 2022 to delete visitor registration records from related software such as Trace Together after the pandemic ended, and to restrict police access to user information only when investigating serious crimes (e.g., murder, terrorist attacks, etc.) [6].

➢Clarify the attribution of civil legal liability for intelligent robots

In the long term, intelligent robots should be given special legal status (e.g., electronic personality) to clarify the legal rights and obligations of intelligent robots; starting with the establishment of a compulsory insurance system, the liability of AI products will be divided equally, and the funds can be provided by manufacturers, program developers and users.

3.2.2 Response to Privacy

Since Taiwan's current laws leave room for ambiguity, we may refer to the practices of other countries, such as the US Health Care Portability Act (HIPAA), which stipulates the removal of 18 personal identification codes as a benchmark for de-identification; The EU General Data Protection Regulation directly states that pseudonym zed personal data is still personal data. Another party to the dispute is to allow the right of withdrawal, allowing individuals to retain the right to withdraw from the database. Even if health care data does not obtain the prior consent of the public (opt-in), it can still provide an opt-out option after the fact, and the public has the opportunity to decide whether to provide health information for academic research or commercial use. Citing the NHS practice of the NHS as an example, British people have two stages of opting out of the central database (NHS Digital): one is to refuse family doctors to upload their medical information to NHS Digital at the beginning; Second, after the data is uploaded, it can still be rejected when the data is shared with a third party for use[7]. In recent years, the British government has worked hard to communicate with the public, hoping that the public will recognize the common good of data sharing, and also explain the social costs of withdrawal, and encourage people to stay in the database and enjoy the benefits of precision medicine to individuals. If the current situation in Taiwan is even criticized by civil society organizations, according to the Personal Information Law, if it is reuse other than the original purpose of collection, the consent of the person concerned should be obtained. However, the original collection of health insurance information was for the purpose of auditing premiums, not for medical research; Proponents argue that health care databases are valuable health big data, and that it would be in the public interest if they could be linked to provide academic and medical research. From the foregoing, it can be seen that there is still room for controversy and discussion on related issues[8].

In 2022, Taiwan's Constitutional Court issued Judgment No. 13 of 111, the main text of which mentioned that from the overall observation of the Personal Data Protection Law or other relevant laws and regulations, the lack of an independent supervision mechanism for personal data protection, the insufficient protection of personal information privacy, and

the risk of unconstitutionality, the relevant authorities should enact or amend relevant laws and establish relevant legal systems within 3 years from the date of the pronouncement of this judgment to fully protect the people's information privacy rights under Article 22 of the Constitution. The health insurance database is just one example, when AI has become an accelerator under the wave of big data, the comprehensive response should be to regulate the use of data in the AI era, such as the General Data Protection Regulation implemented by the European Union in 2018 (General Data Protection Regulation, GDPR), which is an important indicator of personal data protection in the AI era. The EU has taken the use of AI into account during the legislative formulation stage, and set four principles for personal data protection: purpose-specificity, data minimization, transparency and accountability[9]. Among them, the specific purpose and the minimization of data both require the collection, processing and use of data, which should be within the scope necessary for the specific purpose, that is, only provide absolutely necessary information[10]. However, this clearly conflicts with the nature of the large amount of data that the use of big data depends on.

The privacy of medical data is a key factor in the success or failure of AI medical systems, because medical data is stored in the cloud, which may cause privacy leakage such as personal data. In addition, if no other physician is involved in the diagnosis, but the doctor accepts the AI's wrong advice and medical negligence occurs, the question of who is responsible for the medical error is a question of accountability that deserves further discussion[11], that is, who should be responsible if there is a problem. Moreover, it is difficult to identify patients with artificial intelligence algorithms to record patient characteristics[12]. Scholars He Xing also pointed out that the trade-off between "individual rights" and "public interest" is not only a long-standing concern of political philosophers, but also reflects the core of modern public health ethical thinking[13].

3.2.3 Response to Data Governance

In the past, the method of automated information system implementation relies on logic and rules, so the results calculated by each system can be found out through logical judgment and calculation back, on the contrary, in the AI intelligent application system, the operation of AI models, it is difficult for us to clearly know the basis or reason for the model judgment results, in order to avoid data deviations that will cause unfairness and even affect ethical issues, it is necessary to build a trustworthy AI system or product, so it is necessary to manage and standardize the data and data base[14]. Another scholar has suggested using block chain technology to help strengthen the autonomy of participants, but there are still many challenges in its application[15].

4. The Impact and Response of Artificial Intelligence on the Economy

4.1 The Impact of Artificial Intelligence on the Economy

The impact of AI on the economy can be cut from five aspects:

4.1.1 The Impact of the Type of Work

With the development of information automation and algorithms, there is also a certain impact on job categories, not only traditional industries, service industries, but also extended to the financial industry or accountants, lawyers and other specialized occupations, from the grassroots to high-level jobs may be replaced, many new work forms will continue to be invented, such as delivery platform Uber Eats or Food Panda delivery workers, to be able to use the technology platform for consumption and delivery, in the past, such a role did not exist, but due to the development of technology, with the innovation of AI algorithms, these new types and forms of work may be created;

4.1.2 Impact on Productivity

That is, the quantity and quality of production may also be adjusted due to the intervention of artificial intelligence.

4.1.3 Impact of Economic Efficiency

AI algorithms can provide better business models through big data, increase production, and reduce the waste of resources and time.

4.1.4 The Impact of Data Collection

Identify possible patterns through data and give recommendations or action plans, etc.

4.1.5 The Impact of Automation Development

AI algorithms can better deploy automation, which has a certain degree of impact and impact on social development and economy.

4.2 The Response of Artificial Intelligence to

Economic Impacts

At present, the Taiwan government is responding to the strategy of artificial intelligence on the economy, corresponding to the impact of artificial intelligence on the economy, including the following[16].

4.2.1 Response to the Impact of the Type of Work

Assist employees to cope with the transformation, such as promoting the financial industry to raise 0.5~1% net profit after tax for staff training, job transfer and placement.

4.2.2 Response to the Impact of Productivity and Economic Efficiency

Strengthen labor protection measures, in addition to strengthening the labor rights and interests of atypical workers (including labor dispatch, partial working hours, etc.), and provide labor insurance for unspecified employers or self-employed workers.

4.2.3 Data Collection and Response to the Impact of Automation Development

To cultivate digital technology talents, in addition to handling vocational training courses related to artificial intelligence and big data, and promote competency appraisal (such as iPAS) to promote industrial integration.

In addition, in terms of university admissions, an additional 10% of the enrollment quota in the field of information and communication is added. In addition, cross-field cultivation of information and communication talents, and the promotion of the multi-cultivation model of open universities.

5. The Impact and Response of Artificial Intelligence to Politics

5.1 The Impact of Artificial Intelligence on Politics

5.1.1 AI Systems Are Easily Fooled

Currently, AI systems are trained in patterns in some areas, and because they can't cover all possibilities, it's easy for systems to get confused when new scenarios arise. This is because AI systems do not yet have the ability to recognize similarities like humans, just as in pattern recognition, when an AI system encounters a different scenario than the data in the training set, it does not judge based on context. The researchers believe that in the process of integrating AI tools into healthcare systems, more understanding of their potential weaknesses is needed. They examined the difficulty of fooling medical imaging analysis software. They found that using adversarial examples can easily trick AI software into misclassifying, an attack that is difficult for humans to detect[17]. If AI systems are easily fooled, it means they are vulnerable to evil forces, such as hostile attacks in machine learning. For example, an algorithm can read fake news from an influential account and promote it based on optimized content factors, rather than checking news sources or ideas as journalists do before publishing.

5.1.2 The Information Is Confused and the True Is Indistinguishable

Technically, the use of AI technology in election prediction has shown its superiority over traditional polls. In many key elections, including the UK's Brexit referendum, AI has made more accurate predictions than experts and opinion agencies. Campaign teams in many countries use the technology provided by big data and AI to manipulate voters to some extent, selectively giving them specific stimuli, usually to manipulate their emotions, fears or hatred[18]. Algorithms pose a great challenge to democratic politics, because democracy originally wants every voter or majority voter, or middle voters, to make independent judgments, but because the source of information is too confusing and the truth is indistinguishable, it is difficult to make independent judgments.

5.2 The Response of Artificial Intelligence to Political Impact

The response of artificial intelligence to political impact can be started from the following directions:

5.2.1 Establish a Special Management Institution for Intelligent Robots

Establish a dedicated management agency for intelligent robots to be responsible for the mandatory registration of specific types of robots (such as drones with identification and tracking systems) or artificial intelligence programs, and to provide professional advice and services from governments and enterprises in technical, ethical and regulatory aspects.

5.2.2 Ensuring Security and Safeguarding Human Domination

For research designers, manufacturers and product consumers of the artificial intelligence industry, establish behavioral norms to ensure the safety of intelligent robots and ensure human domination over robots.

5.2.3 Legislation Regulates Sensitive Technical Data

Legislation regulates intelligent robots and sensitive technical data of artificial intelligence, including robots and human-machine communication networks, to implement the protection of user privacy and prevent potential security vulnerabilities and improper use.

5.2.4 Establish Channels for Public Consultation and Expression of Opinions

Establish public consultation channels to allow citizens and civic groups to fully express their views on legislation on intelligent robots and artificial intelligence.

6. Conclusion

On the development path of artificial intelligence, it is not only technical issues that are important, but also philosophical issues related to morality and ethics.

However, the development of artificial intelligence is based on the road that human beings have traveled, perhaps it can understand human ethics faster, and has the ability to simulate the development of civilization. IIITB researchers are optimistic that machines will be better able than humans to avoid disasters in history and handle future uncertainties better.

This article is a preliminary view, and I hope to use this to inspire more discussions and in-depth discussions. In order to make the focus of this article clearer, the impact and response of artificial intelligence on Taiwanese society are summarized in Table 1.

Table 1. Key points of public thinking on artificial intelligence

The impact of artificial intelligence on Taiwanese society	The Response to the Impact of Artificial Intelligence on Taiwanese Society
●The impact of artificial intelligence on ethics ➢On the impact of prejudice Once the information provided is not comprehensive, or the engineers fail to manage to avoid discrimination, the results derived by AI can easily be biased. ➢Initiative and existential threats Once the information provided is not comprehensive, or the engineers fail to manage to avoid discrimination, the results derived by AI can easily be biased. ➢Addictive algorithmic threats While it may be beneficial in certain areas, such as customer service, the infinite capabilities of machines could create an emotional addiction to robots. ➢Threats of misinformation and forgery By using AI to process images, videos, and audio files from the original media and audio files, alter the intent of others, often with malicious intent. Deep fakes include face swapping, voice imitation, face reenactment, lip syncing, and more.	●The response of artificial intelligence to ethical impact ➢Responses to the impact of prejudice ✓ Understand where AI can help correct bias and where it can exacerbate it ✓ To establish processes to test and mitigate bias in the system ✓ Fact-finding potential biases in human decision-making ✓ Fully explore how humans and machines can best work together ✓ Invest more in bias research, provide more data for research, and adopt a cross-domain approach ✓ Greater diversity in AI ➢Response to initiative and existential threats Regarding the initiative and existential threats of AI, we can examine and think about countermeasures from the AI ethics code. ➢Response to addictive algorithmic threats Addiction needs to be disciplined and the body should be corrected, and the behaviors and thoughts of regulating individuals should be used not only for the body that needs discipline, but also for the population that needs to be adjusted. ➢Response to misinformation and forgery threats

	Regarding the misinformation and forgery caused by AI, it seems that the supervision and regulation mechanism of AI can be started.
●The impact of artificial intelligence on the law ➢On the impact of social surveillance Use artificial intelligence to collect personal data to provide better and more personalized services. This kind of personalization is a great feature if the user agrees and the data collection is transparent, but if there is no agreement or transparency, it will create a bad experience for the user. When digital technology intervenes in the public health and medical health system, it also triggers the subsequent controversy over the dilemma of human rights and privacy. ➢On the impact of privacy In terms of privacy protection, it includes: the collection part, there are difficulties such as prior consent to data collection, de-identification of data processing, and prior prediction of data utilization. ➢On the impact of data governance The more complete the data collection is, the more it is necessary to have a set of methods different from the past, and it is necessary to establish a system and concept of data governance; in addition, the quality of data is also an important link, and data collection should avoid deviations or omissions.	●The response of artificial intelligence to the legal impact ➢Response to social surveillance ✓Restrictions on criminal investigations ✓Clarify the attribution of civil legal liability for intelligent robots ➢Response to privacy We may refer to the practices of other countries. For example, the European Union has taken the application of AI into consideration in the stage of legal formulation, and has set four principles for personal data protection: the principle of specific purpose, the principle of data minimization, the principle of transparency and accountability. ➢Response to data governance It is necessary to build a system or product that can be trusted with AI, and manage and standardize data and data. Other scholars have suggested the use of block chain technology to help strengthen the autonomy of participants, but there are still many application challenges.
●The impact of artificial intelligence on the economy ➢The impact of the type of work Jobs from the basic level to the advanced level are likely to be replaced, and many new types of work will continue to be invented. ➢Impact on productivity The quantity and quality of production may also be adjusted by the intervention of artificial intelligence. ➢Impact of economic efficiency AI algorithms can use big data to provide better business models, increase production, and reduce waste of resources and time. ➢The impact of data collection Use data to discover possible patterns and give recommendations or courses of action. ➢The impact of automation development AI algorithms can better deploy automation.	●The response of artificial intelligence to economic impacts ➢Response to the impact of the type of work Help employees navigate the transition. ➢Response to the impact of productivity and economic efficiency Strengthen labor security measures. ➢Data collection and response to the impact of automation development Handle artificial intelligence, big data and other related vocational training courses, and promote ability appraisal. In terms of university admissions, an additional 10% of the admissions quota in the field of information and communication is added. In addition, cross-field cultivation of information and communication talents, and the promotion of the multi-cultivation model of open universities.

●The impact of artificial intelligence on politics ➢AI systems are easily fooled AI systems are trained on patterns in certain domains, and because they cannot cover all possibilities, the system is easily confused when new scenarios are presented. If AI systems are easily fooled, that also means they are vulnerable to evil forces, such as adversarial attacks in machine learning. ➢The information is confused and the true is indistinguishable Campaign teams in many countries use the technologies provided by big data and AI to manipulate voters to some extent, selectively giving voters specific stimuli, usually by manipulating their emotions, fears or hatred.	●The response of artificial intelligence to political impact ➢The response of artificial intelligence to political impact ➢Ensuring security and safeguarding human domination ➢Legislation regulates sensitive technical data ➢Establish channels for public consultation and expression of opinions

Source: Author's self-made.

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