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AI Policy and Regulations of Singapore

Comprehensive Report

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Content

Introduction

Singapore has positioned itself as a leader in artificial intelligence (AI) adoption and governance in the Asia-Pacific region and globally. As a small city-state with limited natural resources, Singapore has strategically invested in technological advancement to drive economic growth and maintain competitive advantage. The country's approach to AI has evolved from viewing it as an opportunity to considering it a necessity for continued prosperity and relevance as a nation. Since launching its first National AI Strategy in 2019, Singapore has established approximately 150 research and development teams and 900 startups exploring AI innovations. This comprehensive report examines Singapore's legal regulations, government action plans, intellectual property frameworks, investments, and judicial decisions related to AI from 2020 to 2025, providing insights into how Singapore is navigating the rapidly evolving AI landscape while balancing innovation with responsible governance.

1. Recent Legal Regulations (2020-2025)

Singapore currently has no dedicated AI regulation. Unlike the European Union with its Artificial Intelligence Act, Singapore has chosen not to enact specific legislation governing the general use of AI. Instead, the country relies on sectoral guidance from ministries, authorities, and commissions, along with existing technology-agnostic and voluntary guidelines to form the legal and regulatory framework around AI and Generative AI. The Singapore government's position, as outlined in the National Artificial Intelligence Strategy 2.0 (NAIS 2.0), is to retain agility in its regulatory approaches, updating frameworks as needed while accounting for the global nature of AI.

Despite the absence of specific AI legislation, Singapore has enacted laws related to particular applications of AI technology and has established several regulatory frameworks that impact AI development and deployment. The Computer Misuse Act 1993 (CMA) is one such law, aimed at criminalizing unauthorized access or modification of computer material and other computer crimes. This technologically agnostic legislation potentially covers a wide range of cyber-related crimes involving AI, including phishing facilitated by AI. Under Section 3 of the CMA, unauthorized access to computer data is an offense punishable by fines of up to S$5,000, imprisonment for up to two years, or both for first-time offenders.

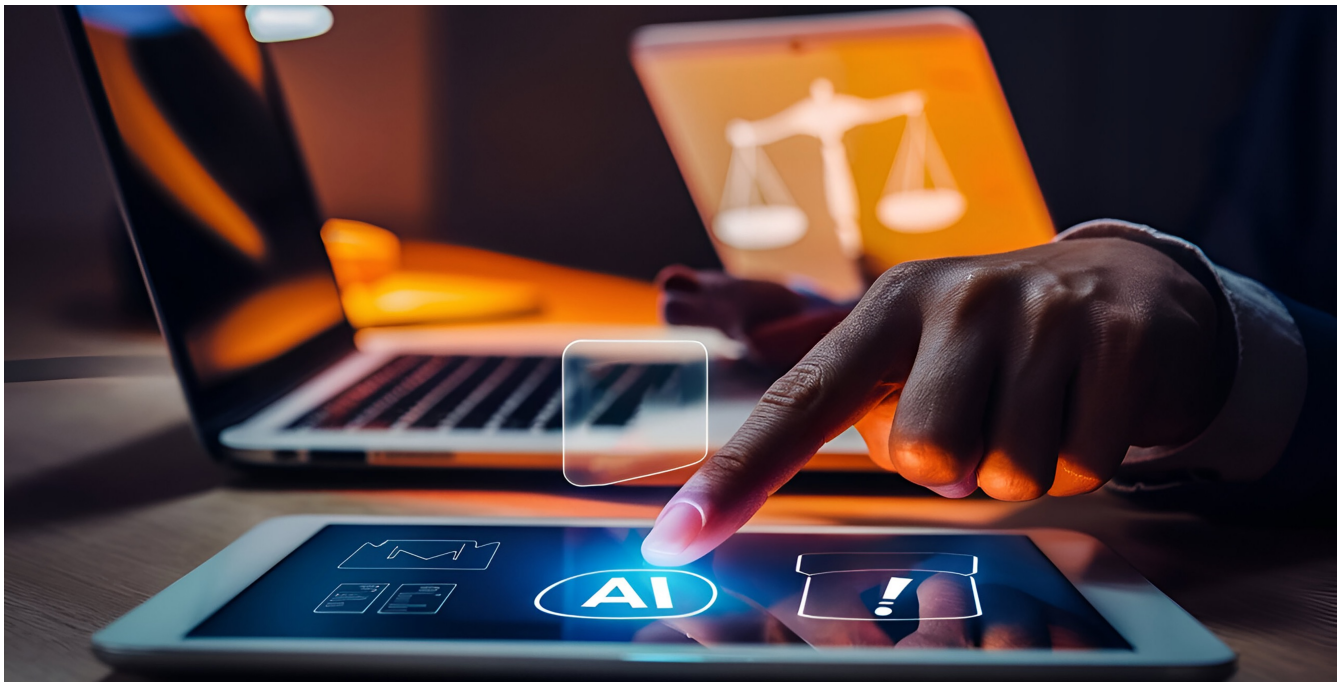
The Online Criminal Harms Act 2023 (OCHA) enables authorities to address online criminal activities. OCHA allows the Singapore government to issue directions to online service providers to stop accounts from communicating in Singapore and to block access to websites suspected of being used for scams or malicious cyber activities. The act also establishes a framework to strengthen partnerships with online services to counter scams and malicious cyber activities, including those facilitated by deepfakes.

The Protection from Online Falsehoods and Manipulation Act 2019 (POFMA) prohibits the communication of false statements of fact in Singapore. This legislation addresses the spread of misinformation, including content created by AI. Under POFMA, the government has broad powers to issue orders against communications found to contravene the act, including stop communication directions and access blocking orders.

In September 2024, the Ministry of Digital Development and Information introduced the Elections (Integrity of Online Advertising) (Amendment) Bill to protect Singaporeans from digitally manipulated content during elections. This bill specifically targets deepfakes that misrepresent candidates by prohibiting the publication of digitally generated or manipulated content that realistically depicts candidates saying or doing things they did not say or do. Significant penalties apply for non-compliance, including fines of up to S$1 million for social media services.

The Personal Data Protection Act 2012 (PDPA) governs the collection, use, and disclosure of personal data by private sector organizations in Singapore. Following comprehensive amendments in 2020 through the Personal Data Protection (Amendment) Act 2020, the PDPA introduced provisions on data breach notifications, expanded the consent framework, and included new exceptions to consent to empower businesses to use data for innovation. The PDPA operates alongside sectoral laws and regulations, such as those issued by the Monetary Authority of Singapore for the financial sector.

Singapore has also published several advisory guidelines and frameworks related to AI. In March 2024, the Personal Data Protection Commission (PDPC) issued the Advisory Guidelines on the use of Personal Data in AI Recommendation and Decision Systems. The Model AI Governance Framework for Generative AI was launched in May 2024 to establish a systematic and balanced approach to addressing generative AI concerns while facilitating innovation. This framework expanded on the existing Model AI Framework initially released in January 2019 and revised in January 2020.



2. Government AI Action Plan

Singapore launched the National Artificial Intelligence Strategy 2.0 (NAIS 2.0) in December 2023, building upon its first strategy from 2019. NAIS 2.0 represents a shift in perspective, considering AI not merely as an opportunity but as a necessity for the country's continued prosperity and relevance. The updated strategy aims to propel Singapore as a leader in AI, using it for public good both locally and globally. Deputy Prime Minister Lawrence Wong announced an investment of more than S$1 billion (approximately US$743 million) over five years into AI compute, talent, and industry development to support NAIS 2.0.

The strategy organizes efforts around three systems—activity drivers, people and communities, and infrastructure and environment—working through 10 enablers. Key enablers include talent development, industry advancement, computing resources, and establishing a trusted environment for AI development. For talent development, Singapore aims to build a skilled AI workforce categorized into Creators (top-tier talent engaged in novel and cutting-edge AI activities), Practitioners (data and machine learning scientists and engineers), and Users (of AI-powered products and services).

Specific initiatives under NAIS 2.0 include a new AI Visiting Professorship to attract world-class AI researchers to Singapore, an investment of S$7 million into an AI Accelerated Masters Programme for developing Singaporean AI researchers, and an investment of over $20 million to enhance AI Practitioner training through increased scholarships and overseas internships. The goal is to triple the pool of AI practitioners to 15,000 over five years to support growing AI demand.

For industry advancement, Singapore has launched the Generative AI x Digital Leaders initiative to provide businesses with access to GenAI expertise and resources. This initiative helps digitally mature enterprises develop and implement customized GenAI applications with technical partners to meet their business needs. Additionally, the government has established the GenAI Sandbox for SMEs to make generative AI more accessible to smaller enterprises.

To address computing infrastructure needs, Singapore is investing up to $500 million to secure high-performance compute resources, including Graphics Processing Units (GPUs) and supporting infrastructure. This investment aims to support use cases in sectors such as transport and logistics, healthcare, and financial services, while spurring further innovation and capability building within the AI ecosystem.

Singapore is also enhancing its AI governance frameworks to ensure responsible AI development and deployment. The PDPC has finalized Advisory Guidelines on the use of Personal Data in AI Recommendation and Decision Systems, providing certainty to businesses on how they can use personal data for AI innovation without re-seeking consent. These guidelines also provide consumers with assurance that their personal data is used by AI systems appropriately.

NAIS 2.0 outlines 15 specific actions over the next three to five years, including anchoring new AI centers of excellence, strengthening the AI startup ecosystem, improving public service productivity, updating national AI research and development plans, accelerating enterprise adoption of AI, increasing high-performance computing capacity, and establishing Singapore as a trusted international partner in AI innovation and governance.

3. Intellectual Property & Data Usage

Singapore's approach to intellectual property (IP) in the context of AI has been proactive, with the government implementing measures to facilitate the protection of IP rights in AI technologies. The Intellectual Property Office of Singapore (IPOS) launched the SG IP FAST programme (initially called the SG Patent Fast Track Pilot Programme) in May 2020, allowing patent applications in all fields of technology, including AI, to be granted in as little as six months compared to the typical period of at least two years. This programme will remain in operation until April 30, 2024.

For an invention to be patentable in Singapore, it must satisfy three conditions under Section 13 of the Patents Act 1994: it must be new, involve an inventive step, and be capable of industrial application. In its IP and Artificial Intelligence Information Note, IPOS stated that while mathematical methods (algorithms) per se are not considered inventions, patent applications related to the application of a machine learning method to solve a specific problem that goes beyond the underlying mathematical method could be regarded as an invention. Additionally, the source code of a computer program may be protected by copyright, as Section 13(1)(b) of the Copyright Act 2021 expressly includes "computer program" within the definition of "literary work".

Regarding data protection, Singapore has a comprehensive framework under the Personal Data Protection Act 2012 (PDPA), which governs the collection, use, and disclosure of personal data by private sector organizations. The PDPA establishes a general data protection law applying to all private-sector organizations. In 2020, the PDPA underwent its first comprehensive review since its enactment, with amendments set out in the Personal Data Protection (Amendment) Act 2020. These amendments, which mostly came into effect on February 1, 2021, introduced provisions on data breach notifications, expanded the consent framework, and included new exceptions to consent to empower businesses to use data for innovation.

The PDPA operates on a set of key principles, including transparency, lawful basis for processing, purpose limitation, data minimization, proportionality, retention limitation, and accuracy. Under the PDPA's general data protection framework, there are currently 10 main obligations, with one more obligation (the Data Portability Obligation) to come into force in the future. The "consent obligation" requires organizations to obtain individuals' consent before collecting, using, or disclosing their personal data, unless an exception applies.

For data used in AI training, the Generative AI Framework released in May 2024 emphasizes the importance of ensuring data quality and addressing potentially contentious training data in a pragmatic way. The framework acknowledges that a large corpus of data is needed to train robust and reliable AI models. It recommends that policymakers articulate how existing personal data laws apply to generative AI and foster open dialogue among relevant stakeholders to understand the impact of fast-evolving generative AI technology. The framework also encourages organizations to undertake data quality control measures and adopt general best practices in data governance, including annotating training datasets consistently and accurately and using data analysis tools to facilitate data cleaning.

The PDPC encourages the use of anonymized data, as far as possible, in AI systems. According to the PDPC's Advisory Guidelines on the PDPA for Selected Topics, data would be considered anonymized if there is no serious possibility that an individual could be re-identified, considering both the data itself and the measures and safeguards implemented by the organization to mitigate the risk of re-identification. Organizations must be mindful that technological advancements may increase the risk of re-identification of previously anonymized datasets. The PDPA criminalizes the unauthorized re-identification of anonymized information, with penalties including fines not exceeding S$5,000, imprisonment for up to two years, or both.

4. AI Outputs & IP Protections

Singapore's legal framework for protecting AI outputs and related intellectual property has evolved to address the unique challenges posed by artificial intelligence. A significant development in this area is the 2021 update to the Singapore Copyright Act, which introduced a computational data analysis (CDA) exception to allow for the use of copyrighted materials in machine learning. This amendment places Singapore among the countries with the most liberal copyright rules regarding AI training globally.

Under the current IP legal framework, several issues arise regarding the protection of AI-generated works. Existing Singapore copyright law recognizes only natural persons as authors of works, though legal persons like companies may own the copyright. The courts have observed that "in cases involving a high degree of automation, there will be no original work produced for the simple reason that there are no identifiable human authors," where authorship is defined as the exercise of independent, original, or creative intellectual efforts.

For AI-generated works, some jurisdictions provide specific protections. Under section 9(3) of the UK's Copyright, Designs and Patents Act (CDPA), the author of a computer-generated work is considered to be the person who made the arrangements necessary for its creation. This means AI output can enjoy copyright protection as computer-generated works even if no human author can be identified. However, Singapore's approach differs, focusing more on the human contribution to the creative process.

Regarding patent protection for AI inventions, Singapore maintains that AI itself lacks legal personality, capacity, or rights and thus cannot own patents under current Singapore patent laws. Section 24(2) of the Patents Act necessitates the identification of the inventor or justification of patent rights acquisition within a patent application, with the inventor defined as "the natural person who came up with the inventive concept". Section 24(1) of the Act grants the inventor a moral right, which is personal and non-transferable, exclusively applicable to natural persons.

For AI-related inventions to satisfy patentability requirements, they must be new, involve an inventive step, and be capable of industrial application. AI-related or AI-generated inventions may fall into the non-patentable mathematical method category if described solely through mathematical processes. An AI method is considered patentable if implemented on a computer to solve a specific problem, such as machine learning for speech or image recognition, and must be functionally limited or causally linked to solving that problem.

There has been substantial debate on whether AI-related and AI-generated inventions can satisfy the requirements of non-obviousness and sufficient disclosure. The requirement of non-obviousness was initially conceived with human inventors in mind, and what may be perceived as non-obvious by a human might appear insignificant to AI given its capabilities. For sufficient disclosure, Sections 25(4) and 25(5)(c) of the Patents Act require clear and complete disclosure, enabling replication by a person skilled in the art. Determining sufficient disclosure for AI-related or AI-generated inventions may be difficult due to the rapidly evolving AI field.

Singapore is well-positioned to embrace the era of artificial intelligence, acknowledging its crucial role in driving the digital economy. Addressing challenges in protecting AI inventions is essential, given the rapid evolution and widespread integration of AI technologies in various sectors of society.

5. AI Investments & Computing Power

Singapore has made substantial financial commitments to accelerate its AI development and computing infrastructure. As announced in the 2024 budget, Singapore will invest more than S$1 billion (approximately US$743 million) over the next five years into AI compute, talent, and industry development. This significant investment aims to strengthen Singapore's position as a global business and innovation hub. The investment strategy includes securing access to advanced chips crucial for AI development and deployment, as well as collaborating with leading companies to establish AI centers of excellence to spur innovation.

A key component of Singapore's AI investment is the Enterprise Compute Initiative, announced in Budget 2025 with an allocation of S$150 million. This initiative provides eligible enterprises the opportunity to partner with major cloud service providers to plan their AI strategy, access AI tools and computing power, and receive consultancy services. The initiative aims to enable businesses to overcome barriers to AI adoption and focus on execution.

For high-performance computing resources specifically, Singapore is investing up to S$500 million to avail high-performance compute resources, including Graphics Processing Units (GPUs) and supporting infrastructure. This investment aims to support use cases in sectors such as transport and logistics, healthcare, and financial services, while spurring further innovation and capability building within the AI ecosystem. The government recognizes that the AI space is evolving rapidly with constant advancements in chip design and compute delivery, and is therefore taking an agile and multi-faceted approach to availing access to compute.

Singapore's computing infrastructure is already substantial. The country is a regional data center hub with a total capacity exceeding 1.4 gigawatts and has one of the highest concentrations of data centers. Currently, Singapore operates more than 70 data centers with a total capacity of over 378 megawatts, constituting over 7% of the nation's total electricity consumption. According to a report by Cushman and Wakefield, Singapore ranks third globally and first in the Asia Pacific in the data center market, hosting 60% of the region's data centers.

The demand for AI compute in Singapore has grown dramatically. In the third quarter of the 2024 fiscal year, Singapore accounted for around 15% of Nvidia's revenue, translating to about USD 2.7 billion and positioning Singapore as Nvidia's fourth-largest market globally. This marked the first time that Nvidia explicitly disclosed Singapore as a separate consumer market in its financial reports. Despite its small land area, Singapore has been a prolific consumer of chips, spending USD 600 per capita on Nvidia chips in the latest quarter, compared to the US spending of only USD 60 per capita.

To support the growing demand for AI compute, Singapore has established strategic partnerships with major technology companies. Nvidia is collaborating with the Infocomm Media Development Authority (IMDA) to develop SEA-LION, a large language model operable in 11 languages. Nvidia already has a supercomputer in Singapore and is considering building an even larger one and potentially investing in a significant iconic site for AI. Other technology giants, including Microsoft, Amazon, and Google, have also announced large-scale programs dedicated to accelerating AI adoption in Singapore.

Singapore's AI talent development is also receiving significant investment. The government has allocated over $20 million over three years to enhance AI Practitioner training for students, including increased scholarships and overseas internships. The TechSkills Accelerator initiative will be scaled up to support fresh and mid-career professionals transitioning to AI roles. Over the next three years, the IMDA aims to reskill about 18,000 tech professionals in AI and Analytics, with an emphasis on Generative AI, Software Engineering, Cloud, and Mobility.

These investments are positioning Singapore as a leader in AI development. According to the Global AI Index by Tortoise Media, Singapore ranks third in the world in terms of AI investment, innovation, and implementation, behind only the United States and China. This recognition reflects Singapore's strategic importance as a global AI hub, with digital innovation being a key driver of its economy and critical to creating new jobs and business opportunities.

6. Judicial Decisions on AI

The Singapore courts have begun addressing AI-related issues in their decisions and procedural frameworks. A landmark case that touches on algorithmic systems is B2C2 Ltd v Quoine Pte Ltd [2019] 4 SLR 17, where the Singapore International Commercial Court (SICC) had to determine the appropriate application of legal principles to a cryptocurrency exchange where trading was conducted via an algorithmic system rather than direct human action. The SICC found the algorithmic program to be "deterministic" in nature, with "no mind of [its] own," but "[a] mere machine [...] carrying out actions which in another age would have been carried out by a suitably trained human". However, the court recognized that the determination of knowledge in cases where computers replace human actions will likely evolve as disputes arise from such actions, particularly in cases where the computer creates artificial intelligence and can be said to have "a mind of its own". This view was affirmed by the majority of the Court of Appeal on appeal, in Quoine Pte Ltd v B2C2 Ltd [2020] 2 SLR 20.

In Quoine Pte Ltd v B2C2 Ltd [2020] 2 SLR 20, the Court of Appeal recognized the existence of a contractual relationship between buyers and sellers when executing a trade on the digital token exchange represented by a smart contract. The court applied traditional contractual principles of unilateral mistake and breach of contract to this relationship, demonstrating how existing legal frameworks can be adapted to novel technological contexts.

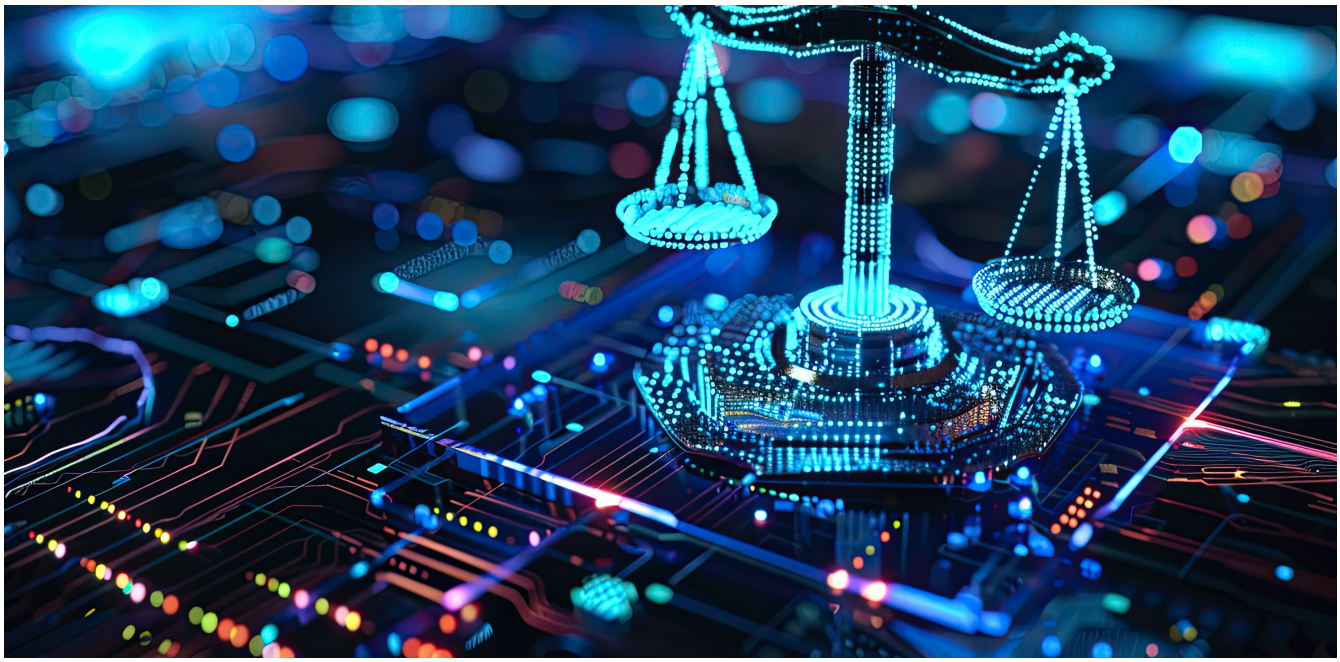
To address the growing use of AI tools in legal proceedings, the Singapore Supreme Court issued Registrar's Circular No. 1 of 2024, which includes a "Guide on the Use of Generative Artificial Intelligence Tools by Court Users". This guide, effective from October 1, 2024, applies to all matters in the Supreme Court and outlines key principles for using these tools in court proceedings. The circular provides a pragmatic yet cautious approach to the use of Generative AI in court. While courts will not require users to declare when generative AI tools have been used, court users should be prepared to provide an explanation of how the AI tool was used and to verify the accuracy of AI-generated content.

Singapore's judiciary is also embracing AI to enhance legal processes. The latest version of LawNet, Singapore's legal research platform, features AI-generated case summaries for more than 15,000 Singapore unreported judgments. This new AI service helps lawyers navigate through Singapore's legal history more efficiently. Courts can use AI to produce case summaries by feeding AI or large language models (LLMs) the material in a case and asking it to generate a summary and explanation, giving users a sense of what the case is about.

Generative AI is being explored as a tool to enhance access to justice, particularly for self-represented litigants in the Small Claims Tribunal. AI tools can help judges manage and make sense of large volumes of documents and evidence, and facilitate research across vast repositories of legal information. This integration of AI into judicial processes represents a significant step in modernizing Singapore's legal system and potentially improving efficiency and accessibility.

The civil liability regime for AI is still in its nascent stages in Singapore. To date, courts have applied existing legal frameworks (contractual, tortious, equitable, and property law principles) to risk and liability issues concerning AI. Meanwhile, studies on the applicability of Singapore law to AI systems are underway, with the Singapore Academy of Law's Law Reform Committee (LRC) establishing a Subcommittee on Robotics and AI in 2020 to consider and make recommendations on civil liability and other AI-related legal issues. The LRC has published the "Report on the Attribution of Civil Liability for Accidents Involving Autonomous Cars," which proposes and discusses possible frameworks for determining liability based on negligence, strict liability, and no-fault liability in the context of self-driving vehicles.

In 2021, the LRC also published the "Report on Criminal Liability, Robotics and AI Systems," which examines potential risks posed to humans and property by the use of robotics and AI systems, and how Singapore's criminal laws and principles of criminal liability may apply in such situations. These reports indicate Singapore's forward-thinking approach to addressing the complex legal questions arising from AI implementation.



Conclusion

Singapore has established itself as a proactive and strategic player in the global AI landscape through a balanced approach to regulation, investment, and governance.While the country has opted against specific AI legislation, preferring to maintain regulatory agility, it has developed comprehensive frameworks and guidelines to address the challenges and opportunities presented by AI. This approach allows Singapore to adapt quickly to the rapidly evolving AI ecosystem while providing sufficient guidance for responsible AI development and deployment.

The government's commitment to AI advancement is evident in its substantial financial investment of over S$1 billion over five years and specific initiatives targeting talent development, industry adoption, and computing infrastructure. Singapore's National AI Strategy 2.0 represents a mature understanding of AI's role as a necessity rather than merely an opportunity for future economic growth and societal advancement. The strategy's focus on building a robust AI ecosystem through targeted enablers demonstrates a holistic approach to AI development that considers both technological capabilities and human factors.

Singapore's approach to intellectual property and data protection in the context of AI strikes a balance between fostering innovation and protecting individual rights. The introduction of the computational data analysis exception in the 2021 Copyright Act update and the PDPC's guidelines on using personal data in AI systems provide clear frameworks for organizations to navigate the complex interplay between data, AI, and legal protections. Although challenges remain in areas such as copyright protection for fully AI-generated works, Singapore's legal infrastructure continues to evolve to address these emerging issues.

The country's strategic investment in computing infrastructure has positioned it as a regional data center hub with significant AI computing capabilities. Partnerships with major technology companies like Nvidia, Microsoft, and Google further enhance Singapore's position as an attractive destination for AI development and deployment. These investments, combined with initiatives to develop AI talent at all levels, create a robust foundation for Singapore's continued leadership in AI innovation and adoption.

As AI becomes more prevalent in society, Singapore's judiciary has begun addressing AI-related legal questions and incorporating AI tools into legal processes. The pragmatic yet cautious approach to AI use in court proceedings, as outlined in the Supreme Court's recent circular, reflects Singapore's broader philosophy of embracing technological advancement while maintaining appropriate safeguards. The ongoing work of the Law Reform Committee to study the applicability of Singapore law to AI systems demonstrates a forward-looking approach to addressing the complex legal questions that will continue to arise as AI technology evolves.

In summary, Singapore's multifaceted approach to AI—encompassing thoughtful regulation, significant investment, intellectual property protection, and judicial adaptation—positions the country well to capitalize on the opportunities presented by AI while mitigating its risks. By maintaining a balance between innovation and responsible governance, Singapore continues to strengthen its role as a global leader in AI development and implementation, setting an example for other nations navigating the complex AI landscape.

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