



Public Consultation on Copyright and Artificial Intelligence (2024)
Submission by Hong Kong Applied Science and Technology Research Institute
("ASTRI")

Introduction

Hong Kong Applied Science and Technology Research Institute ("ASTRI") stands as Hong Kong's leading research and development ("R&D") institute and the largest government-funded R&D centre for applied science and technology. As the pioneering force in the Innovation and Technology ("I&T") sector, ASTRI boasts extensive experience in applied research and technology applications across diverse industries.

At the core of ASTRI's expertise lies Artificial Intelligence ("AI"). Our research team has been actively engaged in a myriad of R&D initiatives focused on Generative AI applications and models. These projects encompass image and video generation, text applications and conversational AI, aimed at furnishing enterprises and government departments with a wide array of technology solutions, including domain-specific knowledge retrieval systems, virtual customer service agents, AI poster generators and more.

Copyright Protection of AI-generated Works

With the swift evolution of technologies, the application scenarios and boundaries of Generative AI are continuously expanding, leading to a rapid surge of AI-generated content ("AIGC"). To protect the interests of copyright and trademark owners, we suggest the Government establish a task force dedicated to exploring and developing innovative tools for protecting and managing the copyrights of AIGC.

AIGC engines are trained on large amounts of datasets, some of which may contain copyrighted material or visible watermarks. To prevent copyright infringements and mitigate the creation of sensitive content, such as visuals of celebrities or logos, authorities could implement a two-stage strategy. The first stage involves the establishment of an undesirable content database with negative text prompts to discourage replication. In the second stage, a feature-based comparator and visible watermark detector could analyse the generated content. If similarities to unwanted items or watermarks are detected, the system alerts the user for review.



In addition, we recommend enhancing copyright traceability through the implementation of invisible watermarking techniques. Traditional methods embed noise-like watermarks for invisibility; however, these approaches are vulnerable to various forms of manipulation, such as rotation, scaling, translation (“RST”) and transcoding. To address these vulnerabilities, ASTRI’s researchers are developing feature modification-based watermarking for images, which enhances content resilience to such attacks. This innovation ensures AIGC remains traceable even after sharing on social media or messaging platforms for reinforcing copyright protection in the digital landscape.

Possible Introduction of Specific Copyright Exception

As aforementioned, training AIGC engines necessitates the use of substantial datasets. This is essential for building robust models capable of generating high-quality content in various formats. However, AI developers encounter considerable challenges in ensuring their datasets do not incorporate material that infringes upon intellectual property rights, thereby complicating adherence to copyright regulations and legal standards.

To address these challenges, it is essential that AI developers engage in meticulous planning and effective data management strategies to mitigate associated risks. Accordingly, we propose the formation of comprehensive guidelines that encompass data governance, security and copyright protection specifically for AI developers and analysts. Such guidelines would provide a structured framework for the ethical use of data, enabling developers to access and utilise data responsibly while minimising the risk of infringement.

We also strongly advocate for the introduction of a new and specific text and data mining exception (“TDM exception”) within the Copyright Ordinance, for the purposes of computational analysis and processing of text, images, data and/or other forms of information. To foster the growth of Generative AI technology and keep pace with global technology developments, it is important to create an open environment for researchers and analysts of specific entities. Implementing the TDM exception will enable researchers to train AI systems and facilitate their research activities, ultimately enhancing Hong Kong’s attractiveness to I&T enterprises and talents, encouraging investment and engagement in AI industries.

Conclusion

In conclusion, we contend that the rapid proliferation of Generative AI necessitates the implementation of robust copyright protection measures. We therefore recommend the government of a dedicated task force for safeguarding copyrights associated with AIGC. To address challenges in data integrity and copyright compliance, a specific TDM exception is recommended within the Copyright Ordinance. This exception will facilitate computational analysis and bolster the growth of AI, fostering an environment conducive to research and innovation. By implementing innovative tools like invisible watermarking and promoting copyright traceability, content protection will be fortified against potential infringements. These strategic measures not only safeguard intellectual property but also foster a dynamic and secure technological landscape in Hong Kong.

We hope our viewpoints will prove valuable and look forward to the opportunity of providing further input throughout the improvement of copyright protection.

Hong Kong Applied Science and Technology Research Institute

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