

PREFACE

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This is Part 2 of a two-part edition of the *Singapore Journal of Legal Studies* that features a selection of peer-reviewed papers from the “Intellectual Property and Technology in the 21st Century: Challenges in the Next Decade” conference that was attended by almost 100 leading legal scholars, policymakers and industry experts from around the world in August 2025 in Singapore.

In the first-ever academic collaboration of its kind, the Centre for Technology, Robotics, Artificial Intelligence & the Law (“TRAIL”) and the EW Barker Centre for Law & Business – both located at the Faculty of Law, National University of Singapore – partnered with research centres from Columbia, Oxford and Tsinghua to co-organise a truly transnational two-day conference that discussed how intellectual property (“IP”) laws can better deal with disruptive technology trends. The conference was also supported by partners such as Google, ByteDance, BakerMcKenzie, the Singapore Academy of Law and the Intellectual Property Office of Singapore.

IP laws in the age of artificial intelligence (“AI”) are coming under immense pressure. IP offices around the world are continually engaging in lengthy public consultation on possible reforms, and sometimes reaching unsatisfactory conclusions that maintain the status quo.¹ The far-reaching impact of AI leaves no industry untouched, and it demands a rethink of how businesses innovate and compete. At the same time, it exacerbates the tension with how creators, artists, and designers want to protect their works. At the time of writing, it is not just ChatGPT, Gemini and Claude that are dominating the headlines. DeepSeek from China is poised to challenge the dominance of these well-established generative AI applications.²

In Part 1, we were honoured to present the complete keynote speech of Mr Daren Tang, the Director-General of the World Intellectual Property Organization,³ as well

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¹ Eg, Rebecca O’Kelly-Gillard, “Copyright & AI in the UK: The Debate Rolls On”, *Bird & Bird* <<https://www.twobirds.com/en/insights/2026/uk/copyright-,-a-,-aiin-the-uk-the-debate-rolls-on>> (19 March 2026).

² Luz Ding and Saritha Rai, “DeepSeek Unveils Flagship AI Model a Year After Breakthrough”, *Bloomberg* <<https://www.bloomberg.com/news/articles/2026-04-24/deepseek-unveils-newest-flagship-a-year-after-ai-breakthrough>> (24 April 2026).

³ Daren Tang, “Introduction: Intellectual Property and Technology in the 21st Century” [2026] *Sing JLS* 5.

as four other scholarly papers.⁴ In Part 2, the articles cover the classical triumvirate of IP laws – copyright, patents and trade marks – and how the use of generative AI impacts businesses, creators and decision makers.

While deepfakes and the rampant unauthorised use of copyrighted works for the training of AI applications that eventually produce substitutive output will require particular regulatory responses, legislative intervention is not always needed.

In “The Positive Impact of Technology on Copyright’s Negative Space in the Fashion Industry”, David Tan explores the notion that copyright’s “negative space” is an area in which creation and innovation can thrive without significant protection from copyright law, and contends that the fashion industry is one such paradigmatic example. Fashion creations do not benefit from strong copyright protection due to a number of doctrinal limitations inherent in copyright law, which include the bar against functionality, the idea-expression dichotomy and fair use. The rapid development of technology – especially with the accelerating use of generative artificial intelligence in the creation of artistic works – is resulting in the increasing expansion of this negative space. Copying appears to be *de rigueur* in the fashion industry, and manifests itself on a spectrum that spans permissible referencing to tolerated fast fashion knockoffs to illegal counterfeiting. Whoever comes out on top depends on one’s ability to originate a trend, engender desire, and build customer loyalty, rather than a reliance on strong copyright protection for fashion designs. He notes that: “The seduction of the imitative inauthentic is only a temporary consolation in the quest for the aspirational authentic. The semiotic connotations of the alpha brands as Veblen goods at the apex of the fashion pyramid will continue to set trends and stimulate flocking. ... The imitative would not substitute for the original.”⁵ The article examines how the fashion industry nonetheless will continue to thrive in the next decade, and how designers may harness the myriad technological tools available to them to positively enhance their creations in this negative space.

In their article, “Sufficiency of Disclosure and AI-Related Inventions”, Jia Wang and Mingyue Xu argue that in patent law, the doctrine of sufficiency can be applied in a reproducibility-oriented and exclusion-focused manner without introducing technology-specific legal tests or uniform disclosure mandates. The patent system grants inventors exclusive rights in exchange for public disclosure of their inventions, and sufficiency of disclosure operates as a threshold condition for patent validity, conditioning entitlement to private reward on the provision of public benefit. The authors note that “[t]his disclosure structure reflects a core feature of the patent bargain: exclusive rights are granted only when the invention is disclosed with sufficient clarity to inform others what they specifically cannot do during the term of the patent in the absence of a licence, and hence what they can do after

⁴ Daryl Lim, “The Surprising Virtues of Heterogeneity: Legal Pluralism and the Governance of Generative AI” [2026] Sing JLS 11; Jyh-An Lee & Xuan Sun, “Vocal Identity Under Siege by AI Voice Cloning Technologies” [2026] Sing JLS 46; Tianxiang He, “Three Obstacles to AI-Generated Content Copyrightability” [2026] Sing JLS 77; Yang Chen, “Against Trade Secrets Protection for ‘Semi-Public’ Databases” [2026] Sing JLS 107.

⁵ David Tan, “The Positive Impact of Technology on Copyright’s Negative Space in the Fashion Industry” [Sep 2026 Online] Sing JLS at 20–21.

the patent expires.”⁶ The authors contend that AI-related inventions expose a structural mismatch within the sufficiency doctrine. The tension arises most clearly in applied settings, where sufficiency assessed as formal enablement diverges from sufficiency understood as a mechanism for supporting reproducibility and knowledge dissemination. Building on a distinction between Core AI and Applied AI, the article demonstrates that disclosure challenges arise most acutely in the latter category, where claimed technical effects depend on training data, training methods, model configuration or trained model states that may not be inferable from common general knowledge. It is only by differentiating between types of AI-related inventions, identifying performance-critical disclosure elements in applied contexts, and preserving the hierarchical relationship between doctrinal assessment and complementary mechanisms, that sufficiency can continue to function as both a gatekeeping and informational constraint.

Michael Handler in “Artificial Intelligence and Trade Mark Registration: What’s Next for the Human Decision-Maker?” cautions that AI tools that supposedly increase efficiency in the trade mark examination process should be treated with a high degree of caution. AI is increasingly being used by trade mark offices around the world. Specifically, offices are developing and making available AI-based pre-clearance tools that are designed to provide automated assessments of whether an application for registration of a trade mark is likely to face obstacles in examination. As offices around the world continue to invest in these AI tools and consider placing greater reliance on their outputs, Handler points out that some of the problems include the fact that such tools will not be able to replicate what we demand from human assessors applying complex, multi-factorial and subjective legal tests, and that the “data” on which such tools are likely to be trained may include decisions that are flawed or erroneous, or which are based on reasoning that has since been overturned. He concludes that: “While investing in new technologies to assist in the registration process is clearly important, this should not come at the expense of ensuring that examiners, hearing officers and their managers are adequately trained *in the law* on an ongoing basis.”⁷

In “Vicarious Artificial Authorship”, Shyamkrishna Balganesh tackles the challenge that generative AI poses to copyright’s *sine qua non* of authorship. He notes that while courts and policymakers in the US have confronted the challenge, they have routinely done so in a largely pedantic manner, simplistically focusing on the need for “human authorship” without ever explicating the exact role the human needs to play in the creative process. In so doing, they have altogether overlooked an important source of analytical guidance: the work made for hire doctrine. The article demonstrates how the work made for hire doctrine in the US is premised on a theory of authorship that is drawn from the construction of causation in the common law’s doctrine of vicarious liability. Tracing the history of this idea in the common law of employee authorship pre-dating the statutory work made for hire doctrine, it argues that the doctrine embodies a form of vicarious authorship that is predicated

⁶ Jia Wang & Mingyue Xu, “Sufficiency of Disclosure and AI-Related Inventions” [Sep 2026 Online] Sing JLS at 8.

⁷ Michael Handler, “Artificial Intelligence and Trade Mark Registration: What’s Next for the Human Decision-Maker?” [Sep 2026 Online] Sing JLS at 25.

on vicarious causation. He observes: “The scope of employment inquiry therefore operates as an investigation into the extent to which the employer might have been able to predict (and thus expect) the behaviour of the employee at issue that produced the harm/benefit under legal scrutiny, and thus be causally responsible for it.”⁸ Balganesh then innovatively and compellingly extends the idea of vicarious authorship to the outputs of generative AI models, relying on a framework that mimics the manner in which the relationship between principal and agent (*ie*, employer and employee) is seen to be causally related to the production of the work under the work made for hire doctrine.

We have endeavoured to bring you a range of papers that cover a number of different IP rights across the two parts of the special conference feature. I would like to express my sincere appreciation of all the participants of the conference, and convey my heartfelt gratitude to the authors who have spent much time reworking their conference papers and responding to the comments of peer reviewers. Indeed, we live in a world that is rapidly being changed by generative AI and new technologies, and I fervently hope that IP laws are not too far behind in ensuring that the appropriate governance framework is also evolving in tandem.

⁸ Shyamkrishna Balganesh, “Vicarious Artificial Authorship” [Sep 2026 Online] Sing JLS at 29.