

At the crossroads of innovation and regulation: legal Implications of using AI in game development

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As game development increasingly incorporates artificial intelligence (AI) into its creative and production processes, novel legal challenges emerge. From generative AI tools that produce game assets to adaptive systems responding dynamically to player behavior, the promises of enhanced creativity, efficiency, and personalized experiences come entangled with complex regulatory questions. This extended abstract outlines a series of legal aspects at the intersection of AI and game development, illuminating key areas where established doctrines and frameworks—rooted in human authorship, stable production roles, and traditional notions of liability—may fail to provide clear guidance. This paper places particular emphasis on the implications of artificial intelligence for intellectual property (IP) law, where foundational concepts of authorship and ownership are being tested by AI-generated content.

Intellectual Property (IP) and Authorship

One of the most pressing concerns involves the ownership of AI-generated content (Irvin, S., Taub, W., & Choi, S. J. 2023). Traditional IP law assumes human authorship as the basis for rights allocation. Yet, in an environment where visual art, narrative elements, character designs, and musical scores can be entirely or partially generated by AI models, the legal status of such works remains unsettled (Samuelson, P. 2023). The talk will examine the question: who owns the rights to AI-generated game content, and under what criteria (Hugenholtz, P. B., & Quintais, J. P. 2021)? This ambiguity arises because IP laws traditionally center around human creativity and individual intent. When an AI algorithm autonomously generates content, it becomes challenging to attribute traditional legal constructs such as authorship and originality.

Furthermore, determining whether the user of the AI, the developer of the AI system, or potentially the AI itself (an argument explored though not widely accepted legally) holds the IP rights adds another layer of complexity. There is an ongoing debate about

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the necessity of adapting or revising existing copyright frameworks to accommodate scenarios of human-machine collaboration. Some scholars propose a sui generis protection regime, which would specifically address AI-generated works, clarifying criteria for protection, ownership, and exploitation rights.

There is also an ongoing debate about the adequacy of existing copyright frameworks in accommodating scenarios of human-machine collaboration. Some scholars advocate for reforms that would recognize the role of human input in directing or curating AI outputs, while others call for the introduction of a sui generis protection regime specifically for AI-generated works. Such a framework could establish clearer criteria for ownership, protect investment in innovation, and promote legal certainty.

The role and provenance of training data further compound these challenges. AI models frequently rely on large datasets that include copyrighted works, raising concerns over fair use, licensing, and the potential for infringement. Developers and rightsholders face growing uncertainty regarding the legality of data use in both the development and application phases of generative AI tools.

Additionally, criteria such as the degree of human involvement, the transparency of the generative process, the predictability of outcomes, and the originality of AI outputs may influence rights allocation. These criteria could either strengthen or undermine the justification for granting exclusive rights. As AI tools evolve in complexity and capability, the need for clear, harmonized legal definitions and practical guidelines becomes increasingly urgent.

Ultimately, ensuring that IP regimes remain fit for purpose in an AI-driven creative economy is essential not only to protect creators and innovators but also to support sustainable technological development and cultural diversity in game production.

Data Protection and Privacy

The adaptive nature of AI-driven games frequently relies on sensitive personal data, collected and processed to tailor gameplay experiences (Melhart, D., Togelius, J., & Mikkelsen, B. 2023 and Ramadhan, M. H. R., Isrok, M., Anggraeny, I., Ramadhani, K., & Prasetyo, R. 2024). Compliance with data protection regulations, such as the EU's General Data Protection Regulation (GDPR), poses significant challenges (Wachter, S., & Mittelstadt, B. 2019). Game developers must ensure lawful data collection practices, obtain informed consent, implement robust security safeguards, and remain vigilant against algorithmic bias or discriminatory outcomes (Juliussen, B. A., Rui, J. P., & Johansen, D. 2023). Balancing personalization with privacy rights is crucial to meeting both ethical standards and regulatory obligations.

Liability and Consumer Protection

With AI increasingly dictating in-game behaviors and outcomes, defining liability in the event of malfunctions or harmful outputs has become a significant legal concern (Seah, C. 2023). Product liability and consumer protection laws must evolve to clarify accountability when AI-generated content causes unfair disadvantages, damages user experience, or results in discriminatory or harmful effects (DiMatteo, L. A., Poncibó, C., & Howells, G. 2024). Determining responsibility among developers, publishers, or

third-party AI providers will be essential for maintaining transparency, trust, and compliance in the deployment of AI technologies in games.

Toward Inclusive and Responsible Regulation

Finally, the broader context of DiGRA 2025's theme—"Games at the Crossroads"—invites reflection on how legal frameworks might advance inclusivity and cultural sensitivity. Post- and decolonial critiques highlight the importance of preventing AI-driven development from entrenching hegemonic norms (Mohamed, S., Png, M.-T., & Isaac, W. 2020 and Muldoon, J. 2020). Examining regulatory efforts (e.g., the EU's AI Act), the talk will suggest approaches that balance innovation with ethical and equitable standards, ensuring legal structures serve as a guiding hand rather than a reactive constraint.

By mapping these interconnected legal dimensions—IP, data protection, labor and contracts, liability, and regulatory standards—this presentation aims to offer a structured roadmap of the legal terrain facing AI in game development. In doing so, it seeks to foster dialogue among researchers, practitioners, policymakers, and educators, contributing to an informed, proactive engagement with the pressing regulatory challenges that lie ahead.

References:

- Anderson, Stuart, Winslow Taub, and Sam Jungyun Choi. 2023. "AI Generated Video Games Are Coming: How Do Game Developers Protect Rights in Their IP?" *Harvard Journal of Sports and Entertainment Law*.
- Hugenholtz, P. B., and J. P. Quintais. 2021. "Copyright and Artificial Creation: Does EU Copyright Law Protect AI-Assisted Output?" *IIC - International Review of Intellectual Property and Competition Law*.
- Juliussen, B. A., J. P. Rui, and D. Johansen. 2023. "Developing with Compliance in Mind: Addressing Data Protection Law, Cybersecurity Regulation, and AI Regulation During Software Development." In *Privacy and Identity Management: Sharing in a Digital World*.
- Melhart, D., J. Togelius, and B. Mikkelsen. 2023. "The Ethics of AI in Games." *IEEE Transactions on Affective Computing*.
- Mohamed, Shakir, Marie-Therese Png, and William Isaac. 2020. "Decolonial AI: Decolonial Theory as Sociotechnical Foresight in Artificial Intelligence." *Philosophy and Technology*.
- Moreira, F. 2023. "The Use of AI-Generated Assets and Its Legal Implications." *Nordic Game 23 Conference*.
- Muldoon, James. 2020. "Artificial Intelligence in the Colonial Matrix of Power." *Philosophy and Technology*.
- Plastino, E., and M. Purdy. 2018. "Game Changing Value from Artificial Intelligence: Eight Strategies." *Strategy & Leadership*.

Ramadhan, Muhammad Hilmy Rizqullah, Mohammad Isrok, Isdian Anggraeny, Kyagus Ramadhani, and Robbi Prasetyo. 2024. "Legal Protection of Personal Data in Artificial Intelligence for Legal Protection Viewed from Legal Certainty Aspect." In L4th INCLAR4th International Conference on Law Reform Volume 2024.

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance). Accessed from <https://eur-lex.europa.eu/eli/reg/2016/679/>.

Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying Down Harmonised Rules on Artificial Intelligence and Amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act). Accessed from <https://eurlex.europa.eu/eli/reg/2024/1689/>.

Samuelson, P. 2023. "Generative AI Meets Copyright." Science.

Seah, Cheryl. 2023. "Liability Arising from the Use of Artificial Intelligence." Law Gazette. Accessed from <https://lawgazette.com.sg/feature/liability-arising-from-the-use-of-artificial-intelligence/>.

Tyson, L. D., and J. Zysman. 2022. "Automation, AI & Work." Daedalus.

Wingström, R., J. Hautala, and R. Lundman. 2024. "Redefining Creativity in the Era of AI? Perspectives of Computer Scientists and New Media Artists." Creativity Research Journal.

Wachter, S., and B. Mittelstadt. 2019. "A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI." Columbia Business Law Review.

Zurth, P. 2020. "Artificial Creativity? A Case Against Copyright Protection for AI-Generated Works." UCLA Journal of Law & Technology.

DiMatteo, Larry A., Cristina Poncibó, and Geraint Howells, eds. 2024. The Cambridge Handbook of AI and Consumer Law: Comparative Perspectives. Cambridge: Cambridge University Press.