

Exploring the Use of Non-Fungible Tokens to Protect Copyright in AI-Generated Content: Benefits, Concerns, and Guidelines

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Abstract

Existing AI-generated content (e.g., images) is often criticised for using artworks online without their artists' permission, damaging artists' copyrights. With the development of computation creativity model training and the adoption of blockchain technology, it becomes possible for generative AI to be trained on Non-Fungible Tokens (NFT). Since NFTs are said to protect artists' copyright by making the artworks trackable in the previous decades, such NFT-based generative AI should tackle the copyright issue and benefit the artists. However, such a solution brings other concerns. For example, minting artworks to become NFT demands money and technological knowledge from the artists. That could enlarge the gap in artwork exposure and financial status between various artists where the gap is already significant. Also, additional training of models on NFT data would increase the carbon emission of blockchain networks, which is bad for the sustainability of both environment and the blockchain industry. Lastly, an artist usually cannot remove their NFT to prevent it is used for model training because of the immutability of the blockchain network. Ironically, immutability weakens the artists' control over their own NFT regarding generative AI. This exploratory paper interviewed 20 stakeholders for their attitudes (e.g., artists, generative AI system developers and NFT engineers) towards using NFT to protect copyrights in AI-generated content. The proposed benefits, concerns, and newly emerged issues are discussed and examined. Existing cases of using NFT for AI-generated content copyright protection are also examined. Based on these investigations, prototypes are made and tested to suggest possible ways of implementing an ideal system. In the end, general guidelines are suggested.

Keywords

AI-generated content, Non-Fungible Tokens (NFT), Copyright protection, Blockchain technology, Sustainability