Inspiring Excellence

Paper Review

"Usage of Deep Learning and Blockchain in Compilation and Copyright Protection of Digital Music"

Course Title: Distributed Computer Systems and High Performance Computing

Course Code: CSE449

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Submitted To

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1 Summary

This paper introduces two novel models, driven by the need for more efficient and effective algorithmic music composition techniques: a DCGANs model for Soprano and Alto arrangement, boasting an impressive accuracy exceeding 80%, and a MICA model for complex melody arrangement, achieving remarkable harmony and fidelity. Furthermore, it provides a novel solution to digital music copyright protection via a blockchain-based system that demonstrates high throughput and accurate concurrent operations.

1.1 Motivation/purpose/aims/hypothesis

The study attempts to solve the shortcomings of existing algorithmic music creation methods and to create a secure and dependable solution for digital music copyright protection.

1.2 Contribution

- Introduces a DCGANs model for precise Soprano and Alto voicing.
- A MICA paradigm for high-quality complicated melody arranging is proposed.
- Creates a high-performance digital music copyright protection system based on blockchain technology.

1.3 Methodology

The paper employs the following approaches:

- Uses DCGANs and MICA models to generate music.
- The IPBFT algorithm is used to achieve consensus in the blockchain system.
- Evaluates performance using simulations and JMeter testing.

1.4 Conclusion

The proposed DCGANs and MICA models provide promising solutions for algorithmic music composition, while the blockchain-based copyright protection system shows great promise.

2 Limitations

2.1 First Limitation/Critique

The study depends heavily on simulation-based evaluation, emphasizing the importance of real-world implementation in assessing the success of music composition models and the copyright protection system.

2.2 Second Limitation/Critique

The study lacks a full explanation of potential weaknesses and security concerns inside the blockchain system, which necessitates additional research and development to assure its resilience and trustworthiness.

3 Synthesis

The proposed concepts and methodology have enormous potential for use in a wide range of fields, including music production, education, and copyright protection. Future study should focus on improving security measures, making real-world implementation easier, and researching potential applications in other creative industries such as music therapy and game development.

These new ideas can greatly contribute to the evolution of music technology and open a variety of exciting future possibilities by overcoming restrictions and consistently pushing the frontiers of study.