

Creative Choreography Based on Digital Twins, the Voice and Break through of Digital Performance

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Abstract

Performance creative is not only the core content of the performance creation stage, but also a key factor in gaining audience recognition. Performance creative is the artistic language for creators to express their aesthetic experience. Due to the limitation of time and space, the traditional creative process of performance has systemic problems such as low creative efficiency and unsatisfactory creative effect. In order to study and solve these problems, digital performance has opened up a new direction and concept for researchers. As an inter disciplinary subject, digital performance technology combines performance disciplines, psychology, graphics, optical technology, artificial intelligence and brain cognitive science, etc. It provides advanced scientific concepts and cutting-edge technologies for solving scientific problems such as performance creative, performance choreography and performance evaluation. I have every reason to believe that this is a top interdisciplinary subject in the world, and it will certainly attract enough attention from researchers.

Keywords

Digital performance • Technology • Sensor network • Data

Description

In recent years, the cultural industry has become increasingly prosperous, and people's aesthetic of performing arts has continued to increase [1]. The traditional creative process of performance has systemic problems such as low creative efficiency and unsatisfactory creative effect with the limitation of time and space. Specifically, it can be summarized into the following three points:

Firstly, this is mainly manifested in the lack of effective implementation and feedback of creative data. In addition, the live perception data of actors and audience lack effective feedback channels.

Secondly, it is difficult to realize the all-element design of the stage due to the limitation of time and space. The performance creative that integrates multiple elements such as stage design and multimedia interaction lacks a complete and effective implementation. The stage design and performance creative performed on-site are difficult to perfectly reproduce in the alternate training venue, which limits the effective implementation of performance creativity in the space and time dimensions.

Finally, there is no quick and effective method to evaluate the effect of creative performance, which leads to a decline in the ability of creative performance. The evaluation standard of performance creativity is not clear, the evaluation data is diversified, and the evaluation efficiency low. The director lacks an accurate feedback mechanism and evaluation function, and it is difficult

to organize effective secondary ideas. From this point of view, the key reasons for restricting the Performance Creative Choreography (PCC) are the lack of effective decision-making closed loops and the lack of data

feedback capabilities at different stages of the performance.

In order to solve the above problems, the paper "TSN: Performance Creative Choreography Based on Twin Sensor Network" treats PCC as a complex system, and transforms the director experience of creative into computable complex system problems. The digital twin technology has a great advantage in solving the information domain problem of the physical world and the virtual world [2]. With the continuous development of 5G technology, it has promoted the further innovation of smart cities including the digital twin technology of IoT, and digital infrastructure has become the basis for the transformation of traditional industries [3-5].

The paper "TSN" defines a framework for PCC, and includes the following content:

(i) A Twin Sensor Network architecture (TSN) based on digital twin information interaction is proposed, which defines the acquisition method, classification (Creative data, Rehearsal data, Live data) and spatiotemporal features of performance data, and describes the feedback mechanism and symbiosis between performance data in the complex environment.

(ii) A mobile computing method based on Director Semantic Annotation (DSA) is proposed, which establishes the mapping relationship between director experience and performance data for the first time, and reduces the difference of performance data feature distribution under the conditions of experience constraints.

(iii) A Spatial Dynamic Line model (SDL) based on DSA is proposed for dance creative choreography, and a Creative Activation Mechanism (CAM) is established to achieve fast and efficient performance with the TSN architecture.

Conclusion and Future Work

At present, there are many methods for research on performance creative evaluation, such as the method of collecting physiological signals of the human body, and the method of emotional modeling.

Although these studies have achieved preliminary results, the theme of performance creative evaluation is still multidisciplinary, and a large number of more extensive research methods are still needed to establish a systematic research system.

In the paper "TSN", the sensor network is regarded as a key link in solving the complex system problem of PCC, and it is introduced into the information interaction framework of the digital twin. This method is a bold attempt to evaluate performance creative, and provides readers with a brand-new research concept and reference research experience and value.

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