

# Application of Virtual Reality Technology in Visual Optimization of Graphic Advertising Vision

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**Keywords:** Virtual reality, Print advertising, Visual optimization, Expression.

**Abstract:** In today's form, graphic advertising visual design is an important medium form in modern design. And with the rapid development of information technology, virtual reality technology has been applied as a derivative in many fields. Graphical visual optimization has been more perfectly presented after the introduction of virtual reality technology. Based on the concept of virtual reality technology, this paper makes a deep discussion on the representation and value of virtual reality technology in visual advertising visual optimization. It is expected that virtual reality technology can be applied to advertising visual optimization in a wider range.

## 1. Research background

### 1.1 Literature review

In recent years, print advertising design has developed rapidly. Coupled with the advancement of modern information technology, viewers have a higher level of requirements for the presentation of print ads. Therefore, the optimization of visual aspects of print ads is constantly being introduced, and the emergence of virtual reality technology has increased the weight of visual optimization, which has attracted wide attention of scholars. Fu Jianming and Bao Yan obtained the complete information of the 3D animation scene, and proposed the graphic design method of the 3D animation scene according to the virtual reality technology. The method obtains the depth coordinates of the candidate mesh nodes of the animated scene image through the mesh nodes, and then obtains the 3D point cloud of the animated scene image through smooth noise processing. Finally, the 3D mesh features in the virtual scene are accurately obtained according to the original animated scene image features. Registration point. This method can reconstruct the accuracy of the animated scene and has strong stability and real-time performance (Fu and Bao, 2017). Huang Ruozhao believes that virtual display technology can help traditional print ads break through the two-dimensional space constraints, and play a positive role in improving advertising narrative methods and innovative print advertising ideas (Huang, 2016). Zhao Minting and Chen Bangqin believe that virtual reality technology can help print advertising marketing to a new level through immersive experience (Zhao and Chen, 2018). Xiao Yi and others used virtual reality technology to set up advertisements for sports venues. This system can calculate and package the background billboards according to different sponsors, and then display the simulation results in three-dimensional roaming, which greatly increases the exposure of the advertisements (Xiao et al, 2011).

### 1.2 Research purpose

The development of social economy has promoted technological progress in the level of information technology. The virtual reality technology derived from the development of information technology is an advanced subject technology integrating artificial intelligence, computer graphics, multimedia, and multi-sensor. At the same time, the immersive sensory experience of virtual reality technology itself provides a convenient way to explore the micro and macro world. Therefore, applying virtual reality technology to the optimization of print advertising visuals can provide an operable platform for the adjustment of lines, colors, structures, and the like at any time. Graphic advertising designers can also add their own design concepts to the advertising design to stimulate

new creative ideas. Although, nowadays, the application of virtual reality technology to the optimization of print advertising is not mature, but the advancement of society promotes the rapid development of information technology, which will inevitably increase the influence of virtual reality technology on the visual optimization of print advertising.

## 2. Analysis of related concepts of virtual reality technology

### 2.1 Virtual reality technology concept

Virtual reality technology is a new technology derived from computer technology. The purpose of virtual reality technology is to present an immersive experience to the audience through the simulation of the actual landscape. Such immersiveness is caused by human senses such as sight, touch, and hearing, and human-computer interaction causes changes in the real-time virtual environment. Virtual reality technology combines multi-source information, combined with artificial intelligence technology, network technology, multi-sensor technology, computer graphics, etc., to present subsystems of different scales and levels in three-dimensional dynamic images (Wang, 2012). Therefore, in the computer technology system, virtual reality technology is a kind of comprehensive high-tech information technology. Virtual reality technology integrates various sensing technologies and natural skills on the basis of real-life perception and simulation to form a realistic image of the most realistic image.

### 2.2 Virtual reality technology features and classification

In general, virtual reality technology has three basic characteristics of interaction, immersion and conception, as shown in Figure 1. Interaction is the interactive interface of high-tech equipment, through the specified technical methods to enable users to operate and examine the simulated virtual scenes in real time through their own sensory experience. For example, the real-time rendering of the simulated objects by the device will be the most realistic scene. Presented in front of the audience. Immersion is a real-time rendering of images through technology, giving viewers an immersive experience, which is often the result of virtual reality technology creating a bridge experience of the audience's senses. The idea is to let the audience get the most accurate rational cognition in the massive information environment through a series of method and technology to explore the creative thinking of the audience.

There are generally three types of classification methods for virtual reality technology. One refers to the degree to which the audience immerses the virtual landscape. The virtual reality technology is divided into four systems, namely, a desktop virtual reality system, an augmented reality system, a distributed virtual reality system, and an immersive virtual reality system. Secondly, based on the computer software and hardware system, the virtual reality technology can be divided into five types of application systems, namely, immersion system, remote vision system, mixed reality system, virtual world system and augmented virtual reality system. Third, based on the integration of the first two methods, the distributed virtual reality system is further grafted into the immersive virtual reality system.

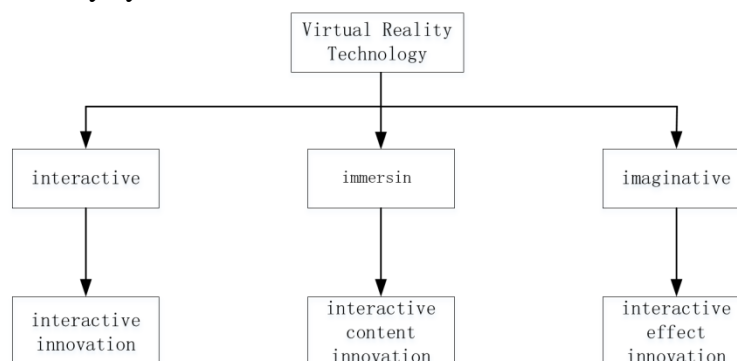


Figure 1. Virtual reality technology features

### **3. The expression of virtual reality technology in visual advertising visual optimization**

Visual communication is the most important way to deliver information to print ads. Therefore, different forms of expression will have the most direct impact on the information and quality of print ads. As a three-dimensional computer presentation form, virtual reality technology can convey the design content to be expressed in the most intuitive way, and enhance the appeal and spread of advertising.

Virtual reality enhances visual metaphorization. Traditional graphic advertising vision emphasizes that the design information expresses the connotation characteristics to the audience, so that the audience can quickly understand the content of the target advertisement. With the emergence of visual metaphorization and virtual reality technology in modern print advertising, print advertising vision has a new form of optimization, and then obtain excellent visual sensory effects. With the help of visual metaphorization of virtual reality technology, print advertising can be more intuitively presented in three-dimensional, enhancing the audience's interest in advertising products and impressions (Yin and Liu, 2016). In the specific visual optimization of print advertising, designers need to integrate the expression concept of works with virtual solid technology, and then fully display the flexibility of virtual reality by utilizing reasonable visual metaphorization characteristics, so as to achieve better expression effect of print advertising.

Virtual reality enhances visual traction. In the visual optimization of print advertising, virtual reality technology can further enhance the visual traction effect. The so-called visual traction is that the advertising designer in the process of creation of the work, in accordance with the required establishment concept, the three-dimensional three-dimensional design of advertising lines, colors and images, to guide the audience to feel the connotation of advertising works. In traditional print advertising works, we strive to be concise and clear. Therefore, the application of various graphic elements does not have reasonable guidance. The audience can only understand the content to be displayed on the surface of the advertisement, but the deeper connotation cannot be deeply understood. With the development of information technology, people have a higher pursuit of the design of print advertising. To a certain extent, this requires advertisers to actively apply existing information technologies, such as virtual reality technology to change the design method, in order to achieve the traction of advertising visual. That is to say, based on the full definition of the design concept, according to the realistic product image, the various design elements can be reasonably matched, and the guiding role of these elements in the advertisement can be exerted, so that the virtual reality technology can be more perfectly presented.

### **4. Value analysis of virtual reality technology in visual optimization of print advertising**

The use of virtual reality technology in print ads has given a new way of displaying their visual feelings. Such a three-dimensional presentation mode is more intuitive and realistic than the original two-dimensional plane presentation form, and the real-time display type is stronger. Moreover, the three-dimensional panoramic virtual reality effect also promotes the panoramic display of the space-time dislocation in the print advertisement. In visual advertising visual optimization, advertising designers usually design corresponding advertising content, color expression, and the like. However, the design of these factors will also be in constant adjustment and change, and if these changes are hand-painted by the advertising designer, it will undoubtedly increase the workload, time-consuming and laborious.

The virtual reality technology is introduced into the visual advertisement visual optimization. On the one hand, the real-time information update technology of virtual reality technology can quickly introduce the designer's design ideas, synchronize in the three-dimensional imaging, and more intuitively understand the optimization effect of the graphic advertisement and enhance the design. Optimized efficiency. On the other hand, the visual advertising visual optimization introduces virtual reality technology, which allows designers to comprehensively examine and display through all-round effect, so as to control the overall thinking from a subtle perspective in the continuous simulation comparison to find more viewers. Welcome to the form of print ads. In general, for the

optimization of the visual advertising vision, through the virtual reality technology, the advertising designer can independently select the color and the way the line is presented, and correct it at any time. The final picture quality can also be changed at any time. By feeling the surrounding vision, choose the most reasonable presentation.

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### **References**

- [1] Fu J.M., Bao Y. (2017). 3D Animation Scene Plane Design Based on Virtual Reality Technology, *Modern Electronic Technology*, 40 (21):59-61.
- [2] Huang R.Z. (2016). The Impact of Virtual Reality Technology on Advertising Communication: A Case Study of the Application of VR Technology in Marketing, *News Front*, 3 (24):66-67.
- [3] Zhao M.T., Chen B.Q. (2018). Application of Virtual Reality Technology in Advertising Communication, *A Vast View on Publishing*, 20 (20):73-75.
- [4] Xiao Y., Zhang F.Y., Chen X.Y. (2011). Development and Application of Simulated System for Setting Background Advertisement of Sports Events, *Journal of Shanghai University of Sport*, 35 (3):20-22.
- [5] Wang Y.Q. (2012). Research on Advertising Image in Media Landscape, *News enthusiasts*, 13 (5):63-64.
- [6] Yin J., Liu Q. (2016). Characteristics of VR Video Advertising, *News and Writing*, 33 (7):58-60.