Innovative Development of Brand Design in the Era of Artificial Intelligence

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Abstract: With the continuous deepening of artificial intelligence in the field of design, the penetration of computing technology in the design process has provided new inspiration for art design, but it has also made the constraints it faces more complex. At the same time, visual communication design under media convergence also faces the need for highly suitable cross-media conversion and high-efficiency and diversified output; in the environment of brand image enhancement with experience as the main line, brand image also faces the requirements of media, diversification, dynamic and even interactivity. Under the current complex and diverse design problems and requirements, traditional brand visual design methods are difficult to meet, and new technologies, methods and strategies are urgently needed to open up new design models.
***Keywords*:** artificial intelligence; brand design; computational design

1. Introduction

In the context of artificial intelligence, whether it is digital engineering design or creative art design, artificial intelligence has a good synergistic effect [1]. Design brings uncertainty and creative inspiration to artificial intelligence, while artificial intelligence brings new ideas to design. Due to the existence of uncertain factors, the creative inspiration of art design works is more susceptible to uncertainty. Under the assistance of computers, the calculation process has stronger certainty and programming. Therefore, how to parametrically express design ideas and improve the design thinking ability of machines is an important link in promoting the integration of artificial intelligence technology and art design [2].

2. Research on the application of artificial intelligence in brand vision

2.1 Nonlinear design optimization

The traditional visual design method is a linear and irreversible process, and the middle part of the product needs to be manually backed up. However, in the computational design method, the production system is taken as the direct object, making it a nonlinear flow. In this process, whether it is inputting data, adjusting constraints, or even adding or deleting individual parts, it can be done at any time. Because all data is saved in the form of program code, there will be no damage or loss. The non-destructive nonlinear design process can also easily optimize each module[4].

2.2 Parametric accidental generation

Based on the design model of the coding format, all elements in the brand image are processed in a parametric and quantitative way. The parametric and standardized design ideas deconstruct the design scheme, giving designers a richer and more detailed design intervention, while maintaining the stability of the underlying logic.

Based on this point, the program operation rules are used to bring some “uncertainty” to the visual design. The parametric characteristics of numerical coding enable “uncertainty” to be controlled under certain restrictions. In addition, the specific visual performance will also be affected by computer random numbers. This “uncertainty” makes the output content of visual design richer and can more easily complete the transformation of brand imagery between various forms; at the same time, it can also break the shackles of thinking for visual designers, so that they can obtain rich and unexpected visual solutions.

In addition, the benefit of random generation is that it can effectively improve the efficiency of design. The traditional linear design method binds the design results and the design process together, so that the visual product has a unique personality and obvious designer’s imprint at the personal level. Computational visual design transforms from the previous “one-to-one” to “one-to-many”, allowing designers to produce complex and random visual effects in one visual design.

Figure 1. Parametric randomly generated visual patterns

3. "Xiaopei Pet" brand visual design practice

3.1 Brand image generation design

(1) Multi-category expression.

On the basis of the full category development strategy, the single graphic of the brand logo is multi-dimensionally deformed to represent the mainstream pet types on the market and use it as the main image of each category of products. The composition of the pattern is limited to the square frame, and a brand image with a sense of technology is created through a regular square structure.

(2) Multi-form expression.

According to different application scenarios and theme expression needs, algorithm tools are used to achieve dynamic, diversified and personalized generated graphs. The basic idea is: on the basis of maintaining the "curled" line segment structure, the shape of the line segment is designed in multiple dimensions, including surface graphs, line graphs, particle clusters, text frames, image materials, etc., and it is used for the holiday theme expression of web page vision, the personalized customization of mobile terminals, and the visual design exploration of the designer community.

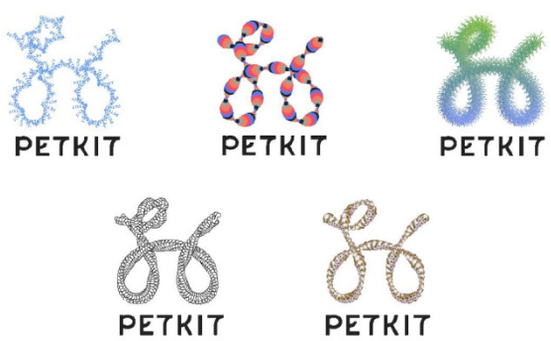

Figure 2. Multi-modal logo design

3.2 Brand promotion interactive design

In the previous survey, it was found that the experience content that customers most expect is to share with their pets. To this end, this project is guided by community co-creation and brand promotion, and uses algorithm tools to visualize pet voices to form personalized "voiceprint" cards. This personalized pattern is based on the trademark pattern. By controlling the pet calls of different attributes, its structural parameters are changed to produce cards that match the pet calls.

This function will be embedded in the "PETKIT" APP. After the user enters his pet's language, he can set his own labels and pictures to express his emotional understanding of the sound. The software also comes with a pet album, which can play the corresponding sound when the owner opens the album. Pet owners can also compare the voice card with the newly generated voice card to better understand the pet's intentions. In addition, this software also provides community sharing and recommendation functions, allowing everyone to communicate and share better.

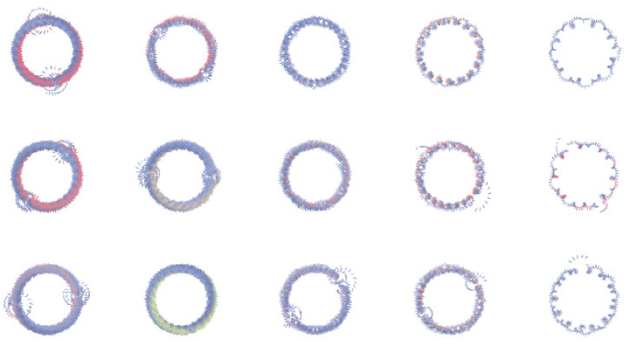

Figure 3. Polymorphic voiceprint

4. The significance of AI painting in brand visual design

In the field of AI painting, copyright issues are a controversial issue, because the acquisition, use, copying, and adaptation of AI painting works hide great risks of infringement. Due to copyright disputes, secondary creation of paintings directly generated by AI drawing engines has become the most common way for users.

Therefore, applying AI drawing works to brand image design, secondary creation of them, and adding the creator's own original performance is an effective way to circumvent copyright issues. AI drawing technology plays a role in assisting designers to think divergently and quickly show creativity in brand visual design creation. On this basis, designers can express and create them in a more diversified and stylized way, thus forming works dominated by the designer's personal creativity, bringing more possibilities to brand visual design, thereby improving the brand's innovative value. Therefore, using AI images for creation is not the end of a creative process, but a new starting point.

5. Summary

With the development of AI painting technology, we should return to the nature of painting, that is, the process of artistic creation is more important than the result of creation. At the same time, in the tide of technological innovation, we should also have an objective understanding of AI painting technology so that it can play a greater role in art creation. On this basis, continuous optimization and innovation of AI painting can not only enrich people's experience and participation in the real world, but also promote strategic innovation of enterprises in business scenarios such as brand visual design, thereby creating more value and possibilities for the development of various fields of society.

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