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ИСПОЛЬЗОВАНИЕ СКУЛЬПТУРЫ КАК ВИЗУАЛЬНОГО КОДА В ГРАФИЧЕСКОМ ДИЗАЙНЕ USING SCULPTURE AS A VISUAL CODE IN GRAPHIC DESIGN

**Лонг Ю., Самутина Н.Н.
Long Y., Samutsina N.N.**

*Витебский государственный технологический университет, Витебск
Vitebsk State Technological University, Vitebsk
(e-mail: samusiya@mail.ru)*

Аннотация: В статье рассматриваются методы цифровой трансформации классической скульптурной формы в элементы современного графического дизайна. Анализируются этапы: 3D-сканирование, редукция геометрии, стилизация под векторный контур, применение алгоритмов генеративного дизайна. На примере серии графических работ демонстрируется синтез традиционного пластического языка и цифровых инструментов.

Abstract: The article discusses the methods of digital transformation of classical sculptural form into elements of modern graphic design. The stages are analyzed: 3D scanning, reduction of geometry, stylization for vector contour, application of generative design algorithms. Using the example of a series of graphic works, the synthesis of traditional plastic language and digital instruments is demonstrated.

Ключевые слова: традиционная скульптура, графический дизайн, цифровая трансформация, культурное наследие, визуальная коммуникация.

Keywords: traditional sculpture, graphic design, digital transformation, cultural heritage, visual communication.

Sculpture, as a three-dimensional art that works with volume, mass and space, and graphic design, as a two-dimensional art that works with composition, contrast and visual hierarchy, are based on the principles of visual composition, such as balance, rhythm, proportion and contrast. Traditional sculpture, as a legacy, a material object with a centuries-old history, is being digitalized and adapted to the language of modern graphic design. This is a vivid example of how innovative technologies serve to preserve, rethink and actualize traditions.

In the digital age, the tools and languages of visual creativity are rapidly changing. Traditional art forms, including sculpture, need new forms of representation. In addition, it is necessary to preserve and update cultural heritage. Digital transformation helps to create unique visual codes, combining tradition and innovation, and allows us to translate cultural heritage in the form of sculpture into a format accessible to graphic design – posters, packaging, animation, thereby prolonging the life of historical forms and allowing more people to look at them.

The purpose of the research is to develop and substantiate a system of methods for the digital transformation of traditional sculptural forms into elements of modern graphic design, ensuring the preservation of the artistic value of the original and its adaptation to the tasks of visual communication of the digital era. Work objectives:

- analyze existing digital technologies and tools used to translate a three-dimensional sculptural form into a planar graphic image;
- to identify and systematize the key formal and semantic characteristics of traditional sculpture, significant for the subsequent transformation into graphic design;
- to conduct experimental testing of the proposed methods using the example of a specific sculptural tradition (Chinese stone sculpture), creating a series of graphic works in various genres of modern design.

As a result of the analysis of literary sources, existing digital transformation practices can be systematized in the following areas::

- digitization and 3D modeling to create high-precision digital copies for further graphic processing, including using artificial intelligence;
- stylization for planar graphics, to translate a three-dimensional sculpture into a vector contour, color plane or pattern;
- hybrid techniques such as digital collage, gradient grids, stone texture simulation to create event posters and brand identity;
- neural network generation and gamification for obtaining new images based on ancient plastics, creating animated posters.
- replication to create souvenirs and packaging based on 3D models while maintaining visual authenticity.

At the same time, cultural recognition, visual expressiveness and functionality should be preserved and technologically reproducible on different media for different purposes.

Chinese stone plastic covers both the deep historical traditions of artistic carving and modern technologies for the production of artificial decorative materials. The main directions of Chinese stone sculpture are traditional carving (jade, marble, onyx), artificial stone, polyurethane stone of artificial stone and plastic panels.

For graphic design, we must first consider a sample of traditional Chinese plastic, for example, a sculpture of a customized granite lion guardian (Fig.1, a). Next, either a 3D scan of the sculpture or its digital adaptation by a neural network is performed (fig.1, b).

Further, only external silhouettes and key internal lines are extracted from the 3D model, such as the main folds of the body and coat, features and facial expressions of the muzzle. It is executed in monochrome graphics, with a minimalistic linear pattern. Next, the stone plastic is divided into color bands (fig. 2). Then a neural network transformation is performed. In this case, the image can maximally repeat the image of a traditional sculpture (fig.2, a) or be graphically adapted and stylized as a ready-made illustration for the poster of an exhibition of Chinese art (fig.2, b). You can offer an imitation of the technique of silkscreen printing, woodcutting, gilding or enamel, for which you need to add a style to the fabric for it.

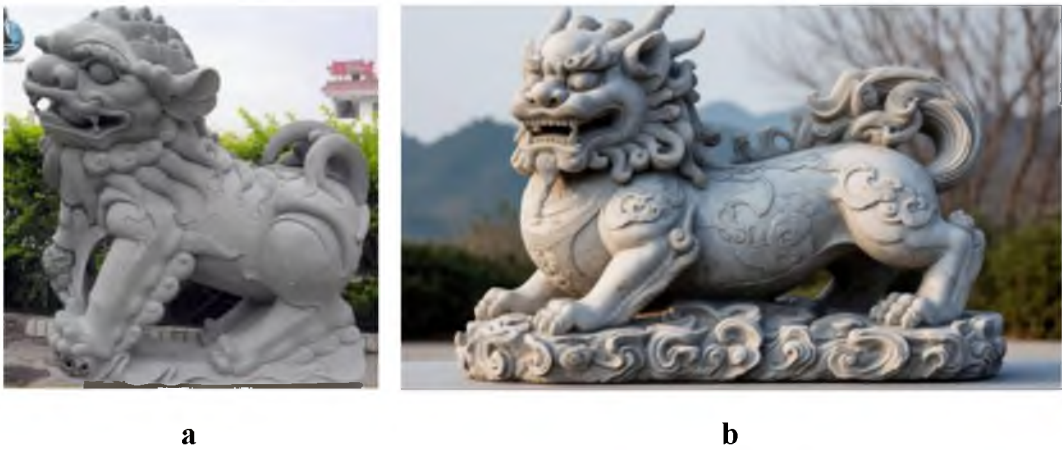


Fig.1. The customized granite lion guardian (a) and its digital adaptation of photography by a neural network (b)



Fig.2. Executed poster views in neural network graphics (a-b)

The application of the obtained elements in graphic design can be represented in the form of the following stages:

- preparation of the museum/exhibition identity. To do this, a logo is created in the form of a stylized outline of a customized guardian lion. The brandbook uses a pattern of stone reliefs;

- creation of a poster of a cultural event, for which a poster is made in the technique of vector pop art with a statue divided, for example, into 4 contrasting colors.

- souvenir packaging is being thought out, for example, a tea box with a stone-like texture and a gold embossed outline of a stone lion;

- motion design 2D animation is being created, for example, as a stone statue comes to life, the lines «slide» off it, turning into flying birds (a metaphor for digitization);

- a website is being created with a hero, a vector illustration generated from a 3D scan.

As a result of the work, it was established that the digital transformation of traditional sculpture is not just digitization, but a cultural and aesthetic synthesis, in which the voluminous heritage passes into the plane of graphic design. The experience of adapting Chinese stone sculpture of guardian statues shows that the value of sculpture is preserved not by copying the form, but by transmitting its semantic core, balance, rhythm, symbolism and texture. In this way, transformation becomes a dialogue between the past and the present, material and virtual, traditions and innovations, allowing cultural heritage to be preserved and popularized.

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