

NEURAL NETWORKS IN MODERN DIGITAL PAINTING AND THREE-DIMENSIONAL SPACE

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Art in the modern sense is not just drawing on paper, it is the creation of digital drawings, the creation of paintings, modeling in 3D space, the maximum approximation of the artificial non-existent to the real, and even art created by a neural network.

The art of three-dimensional modeling consists of numerous elements, the combination of which allows you to create a finally visualized product. This includes the imitation of various movements, the use of textures, the visualization of images and the creation of scenes, the totality of which makes up the project. Studying the structure and ways of using projects is extremely useful in conjunction with neural network technologies. Neuroimaging allows you to see how new objects relate to existing objects in the scene.

A neural network is a network or circuit of biological neurons, or, in a modern sense, an artificial neural network, composed of artificial neurons or nodes. Thus, a neural network is an artificial network, used for solving artificial intelligence (AI) problems.

Analysis of structures, forms, properties, textures of various materials and their visualization in 3D space helps in building realistic graphic objects. With the help of neuro editing and orientation of the neural network in space (neuronavigation), new possibilities for creating high-polygonal 3D models, i.e. neurosculpting, are opened up.

Neural network technologies are able to solve the problem of accuracy both in two-dimensional space when creating technical drawings, and creating images with

the overlay of shadows, light, textures to achieve realistic visualization and approach the properties of existing materials.

Optimizing the visualization (rendering) process of both two-dimensional and three-dimensional space scenes is achieved with the help of neural network technologies. All you have to do is to set some image rendering parameters, create the desired composition, and the neural network will avoid errors and improve the quality of project visualization as a whole.

Let's summarize that the use of a neural network will improve or automate such processes as: Visualization of objects; Creation and animation of cameras for visualizing scenes, their settings and the highest resolution; Add depth of field and blur.

Reference:

Kundert-Gibbs J., Larkins M., Derakshani D., Kunzendorf E. (2007) *Mastering Maya 8.5. Wiley Publishing, Inc.*