CLAIMS

1. A method for modeling an element in a metaverse scenario, comprising:

acquiring an image of a to-be-modeled object;

performing edge detection on an object in the image to extract edges of the object in the image;

vectorizing the edges of the object in the image to obtain a vector graphic of the edges of the object in the image; and

editing vector lines in the vector graphic and a closed region defined by the vector lines, to obtain a model of the object in the image,

wherein the editing vector lines in the vector graphic and a closed region defined by the vector lines comprises: changing a thickness or a length of each of the vector lines in the vector graphic.

2. The method according to claim 1, wherein the performing edge detection on an object in the image to extract edges of the object in the image comprises:

acquiring an edge detection model, wherein the edge detection model comprises an edge extraction module and an up-sampling module;

inputting the image to the edge extraction module to gradually extract edge features of the object in the image through a convolutional network in the edge extraction module; and

inputting the edge features of the object in the image to the up-sampling module to up-sample the edge features of the object in the image, and averaging the up-sampled edge features to extract the edges of the object in the image.

3. The method according to claim 1, wherein after the edges of the object in the image are extracted and before the edges of the object in the image are vectorized, the method further comprises:

de-noising the edges of the object in the image to obtain de-noised edges of the object in the image.

4. The method according to claim 3, wherein the de-noising the edges of the object in the

image to obtain de-noised edges of the object in the image comprises:

acquiring a structural line extraction model, wherein the structural line extraction model comprises a preset number of down-sampling modules and a preset number of up-sampling modules, and the down-sampling modules and the up-sampling modules each are followed by a residual neural network module;

inputting the edges of the image to the preset number of down-sampling modules and the respective residual neural network modules following the down-sampling modules sequentially to down-sample the edges of the object in the image, and memorizing features of the down-sampled edges of the object in the image; and

inputting the features of the down-sampled edges of the object in the image to the preset number of up-sampling modules and the respective residual neural network modules following the up-sampling modules sequentially to up-sample the features of the edges of the object in the image, and memorizing the up-sampled features of the edges of the object in the image to obtain the de-noised edges of the object in the image.

5. The method according to claim 3, wherein after the de-noised edges of the object in the image are obtained, the method further comprises:

normalizing the de-noised edges of the object in the image to even the de-noised edges of the object in the image in thickness and color.

6. The method according to claim 5, wherein the normalizing the de-noised edges of the object in the image to even the de-noised edges of the object in the image in thickness and color comprises:

acquiring a pre-trained line-width standardization model, wherein the line-width standardization model comprises at least one of a wide network model and a flexible network model; and

inputting the de-noised edges of the object in the image to the line-width standardization model, to even the de-noised edges of the object in the image in thickness and color.

7. The method according to claim 6, wherein the wide network model has the same network structure as the flexible network model, and the number of convolution cores in the wide network model is different from the number of convolution cores in the flexible network

model; and

a first layer of the wide network model is a convolution kernel of N*N, a last layer of the wide network model is a sigmod function, other layer of the wide network model is a convolution kernel of M*M, and each convolution layer is followed by a normalization function and an activation function, wherein N is greater than M.

8. The method according to any one of claims 1 to 7, wherein the vectorizing the edges of the object in the image comprises:

vectorizing the edges of the object in the image using a preset vectorizing image processing tool, wherein the preset vectorizing image processing tool comprises a Potrace tool and an Imagemagick tool.

9. A computer apparatus, comprising:

a memory; and

a processor configured to execute a computer program stored in the memory to implement the method according to any one of claims 1 to 8.

10. A computer-readable storage medium storing a computer program, wherein the computer program, when being executed by a processor, implements the method according to any one of claims 1 to 8.