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DEFOXEL: A NEW TOOL FOR VIRTUAL AESTHETIC SHAPING

Jian Chang Xiaosong Yang Daniel X. Shepherd Jian J. Zhang

The National Centre for Computer Animation
Bournemouth Media School
Bournemouth University
Talbot Campus,
Poole, Dorset BH12 5BB
United Kingdom

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Authors: Jian Chang Xiaosong Yang Daniel X. Shepherd Jian J. Zhang

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Abstract:

Based on the theory of solid mechanics, a group of "*defoxels*" have been defined and used to create three dimensional virtual shapes. A *defoxel* can be viewed as a force (or a source) which is capable to deform objects or meshes accordingly in a nature way. The *defoxel* acts as an abstract notation for distortion in space and a collection of *defoxels* are capable of creating complex deformation patterns, presenting rich variation in terms of curvature and distortion of shapes. The beauty of using this notation is the capability of generating a collection of shaping effects instantly with the same setting of *defoxels* when feeding different shapes to deform. Furthermore, we have implemented an Autodesk|Maya plug-in to assist artists to create art pieces with *defoxels* interactively, leading to the desired demonstrations. With a few examples, the paper envisages the potential of *defoxels* as a shaping tool to reflect tensions and deformations in space.

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The authors' e-mail addresses: {jchang;xyang;dshepherd; jzhang}@bournemouth.ac.uk

Supplementary Notes:

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