

Three-dimensional reconstruction and visual simulation of landscape lighting based on Unity3D

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Abstract

The work description of virtual reality technology is superior to static reference pictures and videos, which can improve the predictability of decision makers and become a powerful performance tool for urban lighting design. The urban scene is constructed by Unity 3D, and the intelligent lamp pole and Rhododendron landscape lawn lamp are taken as the research objects. On the basis of maximizing the application effect of lamps with the HTC VIVE virtual headset, the city and lamps are digitally mapped 1:1. After applying the model material self-luminous, setting the type of light source and the position of the light source point, setting the transparency mixing, adding glow, and changing the light effect, a highly restored lamp and lamp simulation model are formed. The research results show that this method provides a convenient research method for the three-dimensional reconstruction and visual simulation of urban landscape lamps. It can make decision makers have a clear understanding of the application effect, application quantity and interval of lamps. Immersive observation experience can make the design scheme more honest and reliable. The efficient simulation of lighting lamps will play an important role in the dynamic development of smart cities in the future.

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