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<<艺术化绘制的图形学原理与方法>>

图书基本信息

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内容概要

The Algorithms and Principles of Non-photorealistic Graphics Artistic Rendering and Cartoon Animation provides a conceptual framework for and comprehensive and up-to-date coverage of research on non-photorealistic computer graphics including methodologies, algorithnas and software tools dedicated to generating artistic and meaningful images and animations. ’Ibis book mainly discusses how to create art from a blank canvas, how to convert the source images into pictures with the desired visual effects, how to generate artistic renditions from 3D models, how to synthesize expressive pictures from textual, graphical and pictorial data、and how to speed up the production of cartoon animation sequences with temporal coherence. It is intended for researchers and graduate students in the fields of computer graphics, digital media arts, and cartoon animation. Dr. Weidong Geng is a professor at the Department of Digital Media Technology and State Key Laboratory of Computer Aided Design and Computer Graphics, Zhejiang University, China.

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章节摘录

Non-photorealistic computer graphics is a multidisciplinary field in the research community, involving computer arts, computer graphics, computer vision, digital image／video processing and visual cognitive psychology. It aims at the computer generation of images and animations that are made in part " by hand " in appearance, and are characterized by their use of randomness, abstraction, ambiguity, or arbitrariness rather than completeness and adherence to the portrayed objects ' properties. In essence, it mimics the eyes and minds of artists and designers to create, view and depict the graphics world, effectively carrying-out the visual communication between computers and human beings. Coverage and Audience This book mainly focuses on the following five core issues in non-photorealistic computer graphics. (1) How to create the paintings, artworks or sculptures from a digitized blank canvas or a standard shape with the tools simulated by the computer. (2) How to convert a series of reference images into the resultant depiction with the desired visual effect. (3) How to automatically generate the artistic rendition or technical illustrations from the 3D models in terms of the stylized parameters. (4) How to produce the comprehensive and expressive visualizations from a set of graphical and textual information on the basis of the semantic meanings to be conveyed . (5) How to speed up the production of cartoon animation by computer- assisted refinement of traditional pipeline and the exploration of novel approaches.

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