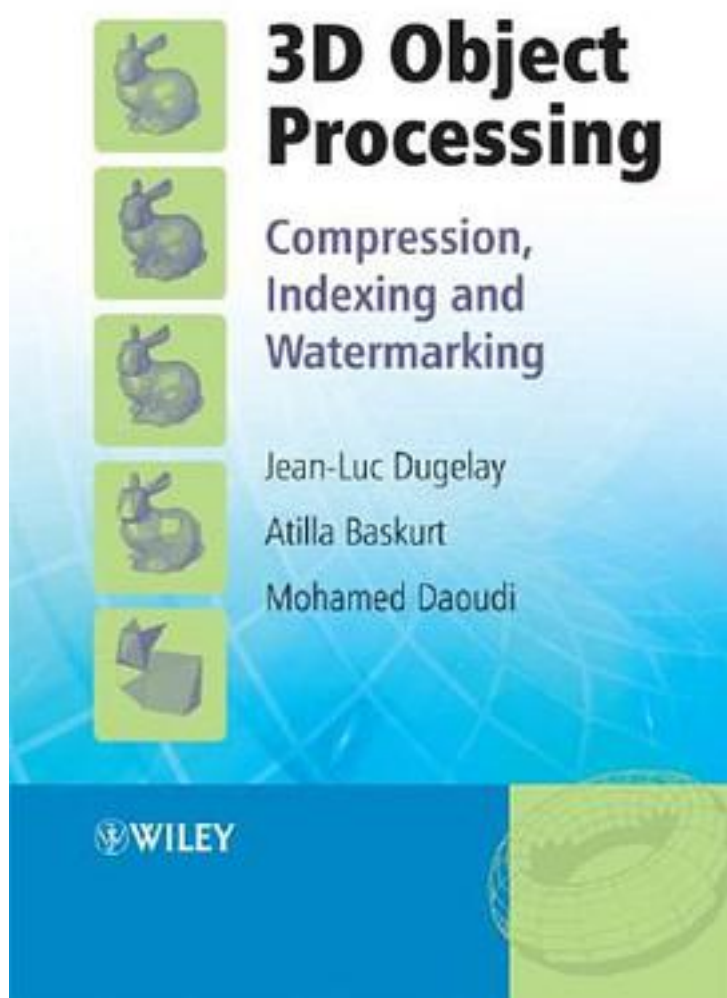


3D Object Processing



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在线阅读本书

The arrival, and continuing evolution, of high quality 3D objects has been made possible by recent progress in 3D scanner acquisition and 3D graphics rendering. With this increasing quality comes a corresponding increase in the size and complexity of the data files and the necessity for advances in compression techniques. Effective indexing to facilitate the retrieval of the 3D data is then required to efficiently store, search and recapture the objects that have been compressed. The application of 3D images in fields such as communications, medicine and the military also calls for copyright protection, or watermarking, to secure the data for transmission. Written by expert contributors, this timely text brings together the three important and complementary topics of compression, retrieval and watermarking techniques for 3D objects. 3D object processing applications are developing rapidly and this book tackles the challenges and opportunities presented, focusing on the secure transmission, sharing and searching of 3D objects on networks, and includes: an introduction to the commonly used 3D representation schemes; the characteristics, advantages and limitations of polygonal meshes, surface based models and volumetric models; 3D compression techniques; the 3D coding and decoding schemes for reducing the size of 3D data to reduce transmission time and minimize distortion; state of the art responses to the intrinsic challenges of building a 3D-model search engine, considering view-based, structural and full-3D approaches; watermarking techniques for ensuring intellectual property protection and content security without altering the visual quality of the 3D object. 3D Object Processing: Compression, Indexing and Watermarking is an invaluable resource for graduate students and researchers working in signal and image processing, computer aided design, animation and imaging systems. Practising engineers who want to expand their knowledge of 3D video objects, including data compression, indexing, security, and copyrighting of information, will also find this book of great use.

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