

1. Record Nr.	UNINA9910739462303321
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Titolo	Visual texture : accurate material appearance measurement, representation and modeling / / Michal Haindl, Jiri Filip
Pubbl/distr/stampa	New York, : Springer, 2013
ISBN	9781299197138 1299197132 9781447149026 1447149025
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (xxxi, 284 pages) : illustrations (chiefly color)
Collana	Advances in computer vision and pattern recognition, , 2191-6586
Altri autori (Persone)	FilipJiri
Disciplina	006.3 006.37
Soggetti	Optical pattern recognition Visual texture recognition Visual perception
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 2191-6586."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Motivation -- Representation -- Texture Acquisition -- Static Multispectral Textures -- Dynamic Textures -- Spatially-Varying Bidirectional Reflectance Distribution Functions -- Bidirectional Texture Functions -- Visualization -- Perceptual Validation and Analysis -- Applications -- Conclusions and Open Problems.
Sommario/riassunto	Although the field of texture processing is now well-established, research in this area remains predominantly restricted to texture analysis and simple and approximate static textures. This comprehensive text/reference presents a survey of the state of the art in multidimensional, physically-correct visual texture modeling. Starting from basic principles and building upon the fundamentals to the latest advanced methods, the book brings together research from computer vision, pattern recognition, computer graphics, virtual and augmented reality. The text assumes a graduate-level understanding of statistics and probability theory, and a knowledge of basic computer graphics principles, but is accessible to newcomers to the field. Topics and features: Reviews the entire process of texture synthesis, including

material appearance representation, measurement, analysis, compression, modeling, editing, visualization, and perceptual evaluation Explains the derivation of the most common representations of visual texture, discussing their properties, advantages, and limitations Describes a range of techniques for the measurement of visual texture, including BRDF, SVBRDF, BTF and BSSRDF Investigates the visualization of textural information, from texture mapping and mip-mapping to illumination- and view-dependent data interpolation Examines techniques for perceptual validation and analysis, covering both standard pixel-wise similarity measures and also methods of visual psychophysics Reviews the applications of visual textures, from visual scene analysis in image processing and medical applications, to high-quality visualizations for cultural heritage and the automotive industry Researchers, lecturers, students and practitioners will all find this book an invaluable reference on the rapidly developing new field of texture modeling.
