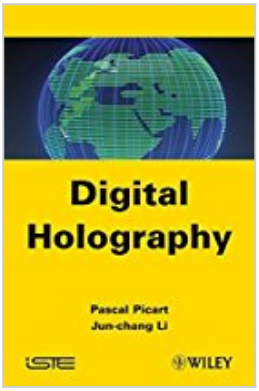

Digital Holography

By Pascal Picart, Jun-chang Li

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This book presents a substantial description of the principles and applications of digital holography.
The first part of the book deals with mathematical basics and the linear filtering theory necessary to approach the topic. The next part describes the fundamentals of diffraction theory and exhaustively details the numerical computation of diffracted fields using FFT algorithms. A thorough presentation of the principles of holography and digital holography, including digital color holography, is proposed in the third part.
A special section is devoted to the algorithms and methods for the numerical reconstruction of holograms. There is also a chapter devoted to digital holographic interferometry with applications in holographic microscopy, quantitative phase contrast imaging, multidimensional deformation investigations, surface shape measurements, fluid mechanics, refractive index investigations, synthetic aperture imaging and information encrypting.
Keys so as to understand the differences between digital holography and speckle interferometry and examples of software for hologram reconstructions are also treated in brief.

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