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Nota di contenuto	Holographic Imaging; Contents; Foreword: Holography; Foreword: Nerd Pride; Guide to Color Plates; Introduction: Why Holographic Imaging?; About This Volume; The Window View Upon Reality; References; Chapter 1: Holograms and Perception; Provoking Spatial Perceptions; Optical Information; Light as Waves and Rays; Capturing the Directions of Rays; Classical Optical Techniques; Holographic Direction Recording; Origins of Holography; Application Areas; Styles of Analysis; References; Chapter 2: Light as Waves; Light; Wave Shapes; Light as Repetitive Waves; Light as Sinusoidal Waves Coherence in WavesE&M Nature of the Waves; Intensity (Irradiance); Conclusions; References; Chapter 3: Waves and Phases; Introduction; Wave Phase; Radius of Curvature; Local Inclination and Divergence of a Complex Wave; Conclusions; Chapter 4: Two-Beam Interference; Introduction; Quantitative Discussion of Interference Contrast; Geometry of Interference Fringes; Simple Interference Patterns; Conclusions; References; Chapter 5: Diffraction; Introduction; Diffraction by Periodic Structures; Single-Slit Diffraction; Use of Lenses; Viewing Diffraction Patterns with the Eye

Styles of Diffraction AnalysisGrating Equation; Spatial Frequency; Grating Example; Off-Axis Grating Equation; Diffraction by a Sinusoidal Grating; Conclusions; References; Chapter 6: Diffraction Efficiency of Gratings; Introduction; Definition of Diffraction Efficiency; Transmission Patterns; Thick Gratings; References; Chapter 7: "Platonic" Holography; Introduction; Object Beam; Reference Beam; Interference Pattern; Holographic Recording Material; Holographic Transmittance Pattern; Illuminating Beam; A Proof of Holography; Other Reconstructed Components; Arbitrary Wavefronts
Diffraction EfficiencyConclusions; References; Chapter 8: Ray-Tracing Analysis of Holography; Introduction; Mathematical Ray-Tracing; Numerical Example; Comparison of Paraxial Hologram and Lens Optics; Three-Dimensional Ray-Tracing; Conclusions; References; Chapter 9: Holographic Lenses and In-Line "Gabor" Holography; Introduction; Transition to Wavefront Curvature; Phase Footprints, Again; In-Line Interference, Again; Transmittance Proof of the Focus Equation; In-Line (Gabor) Holograms; Conclusions; Chapter 10: Off-Axis "Leith & Upatnieks" Holography; Introduction
Implications of Off-Axis HolographyInterference and Diffraction in Off-Axis Holograms; Models for Off-Axis Holograms; Image Magnification; Intermodulation Noise; Conclusions; References; Chapter 11: Non-Laser Illumination of Holograms; Introduction; Problems with Laser Illumination; Sources of Image Blur; Narrow-Band Illumination; Point-Source White Illumination; Image Depth Effects; Other Approaches; Conclusions; References; Chapter 12: Phase Conjugation and Real Image Projection; Real Image Projection Techniques; Phase Conjugation- a Descriptive Approach
Perfect Conjugate Illumination (Examples)

Sommario/riassunto

The only all-inclusive treatment of holography-from fundamental principles to the most advanced concepts While several existing texts cover different aspects of the field of holography, none provides a complete, up-to-date, and accessible view of its popular, scientific, and engineering aspects. Now, from an author team that includes one of the world's pioneers in the field, Holographic Imaging fills this need with a single, comprehensive text that covers the subject from traditional holography to the cutting-edge development of the world's most advanced three-dimensional holographic images,

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Nota di contenuto	Preface -- Contributors -- Part One Gene Expression Analysis and Systems Biology -- 1. Hybrid of Neural Classifi er and Swarm Intelligence in Multiclass Cancer Diagnosis with Gene Expression Signatures (Rui Xu, Georgios C. Anagnostopoulos, and Donald C. Wunsch II) -- 1.1 Introduction -- 1.2 Methods and Systems -- 1.3 Experimental Results -- 1.4 Conclusions -- 2. Classifying Gene Expression Profi les with Evolutionary Computation (Jin-Hyuk Hong and Sung-Bae Cho) -- 2.1 DNA Microarray Data Classifi cation -- 2.2 Evolutionary Approach to the Problem -- 2.3 Gene Selection with Speciated Genetic Algorithm -- 2.4 Cancer Classifi ction Based on Ensemble Genetic Programming -- 2.5 Conclusion -- 3. Finding Clusters in Gene Expression Data Using EvoCluster (Patrick C. H. Ma,

	Relation-Based Query Answering -- 13.8 Evaluation of the Biological Relation Extraction Process -- 13.9 Biological Relation Characterizer -- 13.10 Determining Strengths of Generic Biological Relations -- 13.11 Enhancing GENIA to Fuzzy Relational Ontology -- 13.12 Conclusions and Future Work -- References -- Appendix Feasible Biological Relations -- Index.
Sommario/riassunto	Combining biology, computer science, mathematics, and statistics, the field of bioinformatics has become a hot new discipline with profound impacts on all aspects of biology and industrial application. Now, Computational Intelligence in Bioinformatics offers an introduction to the topic, covering the most relevant and popular CI methods, while also encouraging the implementation of these methods to readers' research.