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Titolo	Scientific Visualization : Uncertainty, Multifield, Biomedical, and Scalable Visualization // edited by Charles D. Hansen, Min Chen, Christopher R. Johnson, Arie E. Kaufman, Hans Hagen
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Descrizione fisica	1 online resource (397 p.)
Collana	Mathematics and Visualization, , 1612-3786
Disciplina	001.4226
Soggetti	Mathematics Visualization Optical data processing Computer graphics Computer Imaging, Vision, Pattern Recognition and Graphics Computer Graphics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Overview and State-of-the-Art of Uncertainty Visualization -- Uncertainty Visualization and Color Vision Deficiency -- Analysis of Uncertain Scalar Data with Hixels -- On the (Un)Suitability of Strict Feature Definitions for Uncertain Data -- The Haunted Swamps of Heuristics: Uncertainty in Problem Solving -- Visualizing Uncertainty in Predictive Models -- Incorporating Uncertainty in Intrusion Detection to Enhance Decision Making -- Fuzzy Fibers: Uncertainty in dMRI Tractography -- Mathematical Foundations of Uncertain Field Visualization -- Definition of a Multifield -- Categorization -- Fusion of Visual Channels -- Glyph-Based Multifield Visualization -- Derived Fields -- Interactive Visual Exploration and Analysis -- Visual Exploration of Multivariate Volume Data Based on Clustering -- Feature-Based Visualization of Multifields -- Feature Analysis in Multifields -- Future Challenges and Unsolved Problems in Multi-Field Visualization -- Overview of Visualization in Biology and Medicine -- Visualization in Connectomics -- Visualization in Biology and Medicine

-- From Individual to Population: Challenges in Medical Visualization --
The Ultrasound Visualization Pipeline -- Visual Exploration of
Simulated and Measured Blood Flow -- Large-Scale Integration-Based
Vector Field Visualization -- Large Scale Data Analysis -- Cross-Scale,
Multi-Scale, and Multi-Source Data Visualization and Analysis Issues
and Opportunities -- Scalable Devices -- Scalable Representation --
Distributed Post-Processing and Rendering for Large-Scale Scientific
Simulations.

Sommario/riassunto

Based on the seminar that took place in Dagstuhl, Germany in June 2011, this contributed volume studies the four important topics within the scientific visualization field: uncertainty visualization, multifield visualization, biomedical visualization and scalable visualization. • Uncertainty visualization deals with uncertain data from simulations or sampled data, uncertainty due to the mathematical processes operating on the data, and uncertainty in the visual representation, • Multifield visualization addresses the need to depict multiple data at individual locations and the combination of multiple datasets, • Biomedical is a vast field with select subtopics addressed from scanning methodologies to structural applications to biological applications, • Scalability in scientific visualization is critical as data grows and computational devices range from hand-held mobile devices to exascale computational platforms. Scientific Visualization will be useful to practitioners of scientific visualization, students interested in both overview and advanced topics, and those interested in knowing more about the visualization process.
