Handbook of Medical Image Processing and Analysis. Edition No. 2

Description: The Handbook of Medical Image Processing and Analysis is a comprehensive compilation of concepts and techniques used for processing and analyzing medical images after they have been generated or digitized. The Handbook is organized into six sections that relate to the main functions: enhancement, segmentation, quantification, registration, visualization, and compression, storage and communication.

The second edition is extensively revised and updated throughout, reflecting new technology and research, and includes new chapters on: higher order statistics for tissue segmentation; tumor growth modeling in oncological image analysis; analysis of cell nuclear features in fluorescence microscopy images; imaging and communication in medical and public health informatics; and dynamic mammogram retrieval from web-based image libraries.

For those looking to explore advanced concepts and access essential information, this second edition of Handbook of Medical Image Processing and Analysis is an invaluable resource. It remains the most complete single volume reference for biomedical engineers, researchers, professionals and those working in medical imaging and medical image processing.

Dr. Isaac N. Bankman is the supervisor of a group that specializes on imaging, laser and sensor systems, modeling, algorithms and testing at the Johns Hopkins University Applied Physics Laboratory. He received his BSc degree in Electrical Engineering from Bogazici University, Turkey, in 1977, the MSc degree in Electronics from University of Wales, Britain, in 1979, and a PhD in Biomedical Engineering from the Israel Institute of Technology, Israel, in 1985. He is a member of SPIE.

Includes contributions from internationally renowned authors from leading institutions NEW! 35 of 56 chapters have been revised and updated. Additionally, five new chapters have been added on important topics including Nonlinear 3D Boundary Detection, Adaptive Algorithms for Cancer Cytological Diagnosis, Dynamic Mammogram Retrieval from Web-Based Image Libraries, Imaging and Communication in Health Informatics and Tumor Growth Modeling in Oncological Image Analysis.

Provides a complete collection of algorithms in computer processing of medical images Contains over 60 pages of stunning, four-color images

Quantitative Analysis of Cardiac Function
Image Processing and Analysis in Tagged Cardiac MRI
Analysis of Cell Nuclear Features in Fluorescence Microscopy Images
Image Interpolation and Resampling
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Physical and Biological Bases of Spatial Distortions in PET Images
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Spatial Transformation Models
Validation of Registration Accuracy
Landmark-based Registration Using Features Identified through Differential Geometry
Image Registration Using Chamfer Matching
Within-Modality Registration Using Intensity-Based Cost Functions
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Warping Strategies for Intersubject Registration
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