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Autore	Paulsen Rasmus R
Titolo	Introduction to Medical Image Analysis [[electronic resource] /] / by Rasmus R. Paulsen, Thomas B. Moeslund
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ISBN	3-030-39364-X
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Descrizione fisica	1 online resource (185 pages)
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Soggetti	Optical data processing Signal processing Image processing Speech processing systems Radiology Image Processing and Computer Vision Signal, Image and Speech Processing Imaging / Radiology
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Image Acquisition -- Image Storage and Compression -- Point Processing -- Neighborhood Processing -- Morphology -- BLOB Analysis -- Color Images -- Pixel Classification -- Geometric Transformations -- Image Registration -- Line and Path Detection -- Appendix A: Bits, Bytes and Binary Numbers -- Appendix B: Mathematical Definitions.
Sommario/riassunto	This easy-to-follow textbook presents an engaging introduction to the fascinating world of medical image analysis. Avoiding an overly mathematical treatment, the text focuses on intuitive explanations, illustrating the key algorithms and concepts in a way which will make sense to students from a broad range of different backgrounds. Topics and features: Explains what light is, and how it can be captured by a camera and converted into an image, as well as how images can be compressed and stored Describes basic image manipulation methods for understanding and improving image quality, and a useful

segmentation algorithm Reviews the basic image processing methods for segmenting or enhancing certain features in an image, with a focus on morphology methods for binary images Examines how to detect, describe, and recognize objects in an image, and how the nature of color can be used for segmenting objects Introduces a statistical method to determine what class of object the pixels in an image represent Describes how to change the geometry within an image, how to align two images so that they are as similar as possible, and how to detect lines and paths in images Provides further exercises and other supplementary material at an associated website This concise and accessible textbook will be invaluable to undergraduate students of computer science, engineering, medicine, and any multi-disciplinary courses that combine topics on health with data science. Medical practitioners working with medical imaging devices will also appreciate this easy-to-understand explanation of the technology. Dr. Rasmus R. Paulsen is an Associate Professor in the Department for Applied Mathematics and Computer Science of the Technical University of Denmark. Dr. Thomas B. Moeslund is a Professor and the Head of Media Technology at Aalborg University, Denmark, where he is also the Head of the Visual Analysis of People Laboratory. His other publications include the Springer titles Introduction to Video and Image Processing, Computer Vision in Sports, and Visual Analysis of Humans.

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