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Nota di contenuto	What is Artificial Intelligence: History and Basic Definitions -- Programming Languages and Tools Used for AI Applications -- Introduction to Traditional Machine Learning -- Machine Learning Methods for Radiomics Analysis -- Natural Language Processing (NLP) -- Deep Learning -- Data Preparation for AI Purposes -- Current Applications of AI in Medical Imaging. .
Sommario/riassunto	This book aims to provide physicians and scientists with the basics of Artificial Intelligence (AI) with a special focus on medical imaging. The contents of the book provide an introduction to the main topics of artificial intelligence currently applied on medical image analysis. The book starts with a chapter explaining the basic terms used in artificial intelligence for novice readers and embarks on a series of chapters each one of which provides the basics on one AI-related topic. The second chapter presents the programming languages and available automated tools that enable the development of AI applications for medical imaging. The third chapter endeavours to analyse the main traditional machine learning techniques, explaining algorithms such as random forests, support vector machines as well as basic neural networks. The applications of those machines on the analysis of radiomics data is expanded in the fourth chapter to allow the understanding of algorithms used to build classifiers for the diagnosis

of disease processes with the use of radiomics. Chapter five provides the basics of natural language processing which has revolutionized the analysis of complex radiological reports and chapter six affords a succinct introduction to convolutional neural networks which have revolutionized medical image analysis enabling automated image-based diagnosis, image enhancement (e.g. denoising), protocolling etc. The penultimate chapter provides an introduction to data preprocessing for use in the aforementioned artificial intelligence applications. The book concludes with a chapter demonstrating AI-based tools already in radiological practice while providing an insight about the foreseeable future. It will be a valuable resource for radiologists, computer scientists and postgraduate students working on medical image analysis.
