1.	Record Nr.	UNINA9910841856303321
	Titolo	Basics of Image Processing : The Facts and Challenges of Data Harmonization to Improve Radiomics Reproducibility / / edited by Ángel Alberich-Bayarri, Fuensanta Bellvís-Bataller
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
	ISBN	9783031484469 3031484460
	Edizione	[1st ed. 2023.]
	Descrizione fisica	1 online resource (0 pages)
	Collana	Imaging Informatics for Healthcare Professionals, , 2662-155X
	Disciplina	616.0754
	Soggetti	Radiology Nuclear medicine Bioinformatics Biomedical engineering Data mining Nuclear Medicine Biomedical Engineering and Bioengineering Data Mining and Knowledge Discovery Diagnòstic per la imatge Radiografia mèdica Radiologia mèdica Processament d'imatges Bioinformàtica Llibres electrònics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Era of AI quantitative imaging -- Principles of image formation in the different modalities -- How to extract radiomic features from the image? -- Facts and needs to improve Radiomics reproductibility -- What is harmonization and how does it differ from standardization? -- Harmonization in the image domain -- Harmonization across MRI -- Harmonization in the features domain -- Selection of the optimal

harmonization method(s) for the problem under study -- Conclusions.

Sommario/riassunto	This book, endorsed by EuSoMii, provides clinicians, researchers and scientists a useful handbook to navigate the intricate landscape of data harmonization, as we embark on a journey to improve the reproducibility, robustness and generalizability of multi-centric real-world data radiomic studies. In these pages, the authors delve into the foundational principles of radiomics and its far-reaching implications for precision medicine. They describe the different methodologies used in extracting quantitative features from medical images, the building blocks that enable the transformation of images into actionable predictions. This book sweeps from understanding the basis of harmonization to the implementation of all the knowledge acquired to date, with the aim of conveying the importance of harmonizing medical data and providing a useful guidance to enable its applicability and the future use of advanced radiomics-based models in routine clinical practice. As authors embark on this exploration of data harmonization in radiomics, they hope to ignite discussions, foster new ideas, and inspire researchers, clinicians, and scientists alike to embrace the challenges and opportunities that lie ahead. Together, they elevate radiomics as a reproducible technology and establish it as an indispensable and actionable tool in the quest for improved cancer diagnosis and treatment.