



## The Mathematics of Medical Imaging: A Beginner's Guide (2nd ed. 2015)

By Timothy G. Feeman

Springer International Publishing AG. Hardback. Book Condition: new. BRAND NEW, The Mathematics of Medical Imaging: A Beginner's Guide (2nd ed. 2015), Timothy G. Feeman, The basic mathematics of computerized tomography, the CT scan, are aptly presented for an audience of undergraduates in mathematics and engineering. Assuming no prior background in advanced mathematical analysis, topics such as the Fourier transform, sampling, and discrete approximation algorithms are introduced from scratch and are developed within the context of medical imaging. A chapter on magnetic resonance imaging focuses on manipulation of the Bloch equation, the system of differential equations that is the foundation of this important technology. Extending the ideas of the acclaimed first edition, new material has been added to render an even more accessible textbook for course usage. This edition includes new discussions of the Radon transform, the Dirac delta function and its role in X-ray imaging, Kaczmarz's method and least squares approximation, spectral filtering, and more. Copious examples and exercises, new computer-based exercises, and additional graphics have been added to further delineate concepts. The use of technology has been revamped throughout with the incorporation of the open source programming environment R to illustrate examples and composition of graphics. All R code...



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