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   Titolo   Novel Diffusion-Based Models for Image Restoration and Interpolation /
                         / by Tudor Barbu

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   Collana   Signals and Communication Technology, , 1860-4862

   Disciplina   006.6
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   Soggetti   Optical data processing
                         Partial differential equations
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                         Image Processing and Computer Vision
                         Partial Differential Equations
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   Lingua di pubblicazione   Inglese

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   Nota di contenuto   Introduction -- Linear PDE-based Image Denoising Schemes --
                         Nonlinear Diffusion-based Image Restoration Models -- Variational and
                         PDE Models for Image Interpolation -- Conclusions.

   Sommario/riassunto   This book covers two essential PDE-based image processing fields:
                         image denoising and image inpainting. It describes the state-of-the-
                         art PDE-based image restoration and interpolation (inpainting)
                         techniques, focusing on the latest advances in PDE-based image
                         processing and analysis, and explores novel techniques involving
                         diffusion-based models and variational schemes. The PDE and
                         variational schemes clearly outperform the conventional approaches in
                         these areas, and can successfully remove image noise and reconstruct
                         missing or highly degraded regions, while preserving the essential
                         features and avoiding unintended effects. The book addresses
                         researchers and graduate students, but is also well suited for
                         professionals in both the mathematics and electrical engineering
                         domains, as it provides rigorous mathematical investigations of the

image processing models described, as well as mathematical treatments for the numerical approximation schemes of these differential models. .