Simultaneous image fusion and denoising by using fractional-order gradient information - DTU Orbit (05/05/2019)

Simultaneous image fusion and denoising by using fractional-order gradient information
Image fusion and denoising are significant in image processing because of the availability of multi-sensor and the presence of the noise. The first-order and second-order gradient information have been effectively applied to deal with fusing the noise-free source images. In this paper, we utilize the fractional-order derivatives to represent image features, and propose two new convex variational models for fusing noisy source images. Furthermore, we apply an alternating direction method of multiplier (ADMM) to solve the minimization problems in the proposed models. Numerical experiments show that the proposed methods outperform the conventional total variation methods for simultaneously fusing and denoising.

General information
Publication status: Published
Organisations: Scientific Computing, Department of Applied Mathematics and Computer Science, University of Electronic Science and Technology of China
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Pages: 212-227
Publication date: 1 May 2019
Peer-reviewed: Yes

Publication information
Journal: Journal of Computational and Applied Mathematics
Volume: 351
ISSN (Print): 0377-0427
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
Original language: English
Keywords: Alternating direction method of multiplier, Fractional-order derivative, Image fusion and denoising, Inverse problem, Structure tensor
DOIs:
10.1016/j.cam.2018.11.012
Source: Scopus
Source-ID: 85057584874
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review