

# Chapter 7

## Publication list

The thesis contributions led to the following publications.

### Journals

1. Pradhan K., Patra S., “Semantic-aware structure-preserving median morpho-filtering”. *The Visual Computer*, 2023, March 5:1-7, <https://doi.org/10.1007/s00371-023-02796-z>. (**IF-3.0**)
2. Pradhan, K., Patra, S. Reduced parameter sensitive edge-aware semantic image filtering. ( *Under review to ‘Pattern Analysis and Applications* ).
3. Pradhan K, Patra S. A semantic edge-aware parameter efficient image filtering technique. *Computers & Graphics*. 2024 Nov 1;124:104068. (**IF-2.5**)
4. Pradhan K., Patra S. and Bruzzone L., “Extended semantic edge-aware filtering profile for hyperspectral image classification,” in *IEEE Geoscience and Remote Sensing Letters*, [https://doi: 10.1109/LGRS.2024.3387473](https://doi:10.1109/LGRS.2024.3387473). (**IF-4.0**).

## Conference

1. K. Pradhan and S. Patra, "Structure Preserving Semantic Texture Filtering," 2022 IEEE Calcutta Conference (CALCON), Kolkata, India, 2022, pp. 283-287, doi: 10.1109/CALCON56258.2022.10060620.
2. K. Pradhan and S. Patra, "Semantic-Aware Image Filtering for Classification of Hyperspectral Images," 3rd International Conference on Intelligent Vision and Computing (ICIVC 2023) (*Presented*).

# Bibliography

- [1] Aharon, M., Elad, M., and Bruckstein, A. K-svd: An algorithm for designing overcomplete dictionaries for sparse representation. *IEEE Transactions on signal processing*, 54(11):4311–4322, 2006.
- [2] Ahumada Jr, A. J. and Peterson, H. A. Luminance-model-based dct quantization for color image compression. In *Human vision, visual processing, and digital display III*, volume 1666, pages 365–374. SPIE, 1992.
- [3] AlSaeed, D. H., Bouridane, A., ElZaart, A., and Sammouda, R. Two modified otsu image segmentation methods based on lognormal and gamma distribution models. In *International Conference on Information Technology and e-Services*, pages 1–5. IEEE, 2012.
- [4] Angulo, J. Morphological bilateral filtering. *SIAM Journal on Imaging Sciences [electronic only]*, 6, 07 2013.
- [5] Annaby, M. and Nehary, E. Bilateral filters with adaptive generalized kernels generated via riemann-lebesgue theorem. *Journal of Signal Processing Systems*, 93(11):1301–1322, 2021.
- [6] Annavarapu, A. and Borra, S. An adaptive watershed segmentation based medical image denoising using deep convolutional neural networks. *Biomedical Signal Processing and Control*, 93:106119, 2024.
- [7] Arias-Castro, E. and Donoho, D. L. Does median filtering truly preserve

- edges better than linear filtering? *The Annals of Statistics*, 37(3):1172–1206, 2009.
- [8] Aurich, V. and Weule, J. Non-linear gaussian filters performing edge preserving diffusion. In *Mustererkennung 1995 Informatik aktuell*. Springer, Berlin, Heidelberg, pages 538–545, 1995.
- [9] Bai, X., Zhao, Y., Huang, Y., and Luo, S. Normalized joint mutual information measure for image segmentation evaluation with multiple ground-truth images. In *Computer Analysis of Images and Patterns: 14th International Conference, CAIP 2011, Seville, Spain, August 29-31, 2011, Proceedings, Part I*, pages 110–117. Springer, 2011.
- [10] Bao, L., Song, Y., Yang, Q., Yuan, H., and Wang, G. Tree filtering: Efficient structure-preserving smoothing with a minimum spanning tree. *IEEE Transactions on Image Processing*, 23:555–569, 02 2014.
- [11] Barcelos, I. B., Belém, F. D. C., João, L. D. M., Falcão, A. X., and JF, G. S. Improving color homogeneity measure in superpixel segmentation assessment. In *2022 35th SIBGRAPI Conference on Graphics, Patterns and Images (SIBGRAPI)*, volume 1, pages 79–84. IEEE, 2022.
- [12] Barman, B. and Patra, S. A novel technique to detect a suboptimal threshold of neighborhood rough sets for hyperspectral band selection. *Soft Computing*, 23(24):13709–13719, 2019.
- [13] Ben Said, A., Hadjidj, R., and Fougou, S. Total variation for image denoising based on a novel smart edge detector: An application to medical images. *Journal of Mathematical Imaging and Vision*, 61(1):106–121, 2019.
- [14] Benediktsson, J. A., Palmason, J. A., and Sveinsson, J. R. Classification of hyperspectral data from urban areas based on extended morphological profiles. *IEEE Transactions on Geoscience and Remote Sensing*, 43(3):480–491, 2005.

- [15] Berkovich, H., Malah, D., and Barzohar, M. Non-local means denoising using a content-based search region and dissimilarity kernel. In *8th International Symposium on Image and Signal Processing and Analysis (ISPA)*, pages 10–15. IEEE, 2013.
- [16] Bhardwaj, K., Patra, S., and Bruzzone, L. Threshold-free attribute profile for classification of hyperspectral images. *IEEE Transactions on Geoscience and Remote Sensing*, 57(10):7731–7742, 2019.
- [17] Black, M. J., Sapiro, G., Marimont, D. H., and Heeger, D. Robust anisotropic diffusion. *IEEE Transactions on Image Processing*, 7(3):421–432, March 1998. ISSN 1941-0042.
- [18] Bovik, A., Huang, T., and Munson, D. A generalization of median filtering using linear combinations of order statistics. *IEEE Transactions on Acoustics, Speech, and Signal Processing*, 31(6):1342–1350, 1983.
- [19] Buades, A., Coll, B., and Morel, J. . A non-local algorithm for image denoising. In *2005 IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'05)*, volume 2, pages 60–65 vol. 2, June 2005.
- [20] Buades, A., Coll, B., and Morel, J. Image denoising methods. a new nonlocal principle. *SIAM Review*, 52(1):113–147, 2010.
- [21] Buades, A., Coll, B., and Morel, J.-M. Non-local means denoising. *Image Processing On Line*, 1:208–212, 2011.
- [22] Cai, B., Xing, X., and Xu, X. Edge/structure preserving smoothing via relativity-of-gaussian. In *International Conference on Image Processing (ICIP)*, pages 250–254. IEEE, 2017.
- [23] Cavallaro, G., Falco, N., Dalla Mura, M., and Benediktsson, J. A. Automatic attribute profiles. *IEEE transactions on image processing*, 26(4):1859–1872, 2017.

- [24] Chambolle, A. An algorithm for total variation minimization and applications. *Journal of Mathematical Imaging and Vision*, 20(1):89–97, 2004. ISSN 1573-7683.
- [25] Chan, L. and Fu, G. Structure-preserving image smoothing with semantic cues. *The Visual Computer*, 36:2017–2027, 2022.
- [26] Chan, R., Rottmann, M., and Gottschalk, H. Entropy maximization and meta classification for out-of-distribution detection in semantic segmentation. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 5128–5137, 2021.
- [27] Chaudhury, K. Acceleration of the shiftable  $o(1)$  algorithm for bilateral filtering and nonlocal means. *IEEE Transactions on Image Processing*, 22, 03 2012.
- [28] Chaudhury, K. N., Sage, D., and Unser, M. Fast  $o(1)$  bilateral filtering using trigonometric range kernels. *IEEE Transactions on Image Processing*, 20(12):3376–3382, Dec 2011. ISSN 1941-0042.
- [29] Chen, G., Xie, W., and Zhao, Y. Wavelet-based denoising: A brief review. In *2013 fourth international conference on intelligent control and information processing (ICICIP)*, pages 570–574. IEEE, 2013.
- [30] Chen, Y., Zhu, L., Ghamisi, P., Jia, X., Li, G., and Tang, L. Hyperspectral images classification with gabor filtering and convolutional neural network. *IEEE Geoscience and Remote Sensing Letters*, 14(12):2355–2359, 2017.
- [31] Cheng, C., Peng, J., and Cui, W. A two-stage convolutional sparse coding network for hyperspectral image classification. *IEEE Geoscience and Remote Sensing Letters*, 20:1–5, 2023.
- [32] Cho, H., Lee, H., Kang, H., and Lee, S. Bilateral texture filtering. *ACM Transactions on Graphics (TOG)*, 33(4):1–8, 2014.

- [33] Dabov, K., Foi, A., Katkovnik, V., and Egiazarian, K. Image denoising by sparse 3-d transform-domain collaborative filtering. *IEEE Transactions on Image Processing*, 16(8):2080–2095, Aug 2007. ISSN 1941-0042.
- [34] Dabov, K., Foi, A., Katkovnik, V., and Egiazarian, K. Image denoising by sparse 3-d transform-domain collaborative filtering. *IEEE Transactions on image processing*, 16(8):2080–2095, 2007.
- [35] Dalla Mura, M., Benediktsson, J., Waske, B., and Bruzzone, L. Morphological attribute profiles for the analysis of very high resolution images. *IEEE Transactions on Geoscience and Remote Sensing*, 48:3747 – 3762, 11 2010.
- [36] Dalla Mura, M., Benediktsson, J. A., Waske, B., and Bruzzone, L. Morphological attribute profiles for the analysis of very high resolution images. *IEEE Transactions on Geoscience and Remote Sensing*, 48(10):3747–3762, 2010.
- [37] Danda, S., Challa, A., Sagar, B. S. D., and Najman, L. Some theoretical links between shortest path filters and minimum spanning tree filters. *Journal of Mathematical Imaging and Vision*, 61(6):745–762, 2019.
- [38] Dani, R. F. D. L. F., Werman, L. M., et al. Gradient domain high dynamic range compression. In *ACM SIGGRAPH 2002*, 2002.
- [39] Demir, B. and Bruzzone, L. Histogram-based attribute profiles for classification of very high resolution remote sensing images. *IEEE Transactions on Geoscience and Remote Sensing*, 54(4):2096–2107, 2015.
- [40] Diamantas, S. and Alexis, K. Modeling pixel intensities with log-normal distributions for background subtraction. In *International Conference on Imaging Systems and Techniques (IST)*, pages 1–6. IEEE, 2017.
- [41] Ding, Y., Zhang, Z., Zhao, X., Hong, D., Cai, W., Yu, C., Yang, N., and

- Cai, W. Multi-feature fusion: Graph neural network and cnn combining for hyperspectral image classification. *Neurocomputing*, 501:246–257, 2022.
- [42] Elad, M. On the origin of the bilateral filter and ways to improve it. *IEEE Transactions on Image Processing : a publication of the IEEE Signal Processing Society*, 11:1141–51, 02 2002.
- [43] Elad, M. and Aharon, M. Image denoising via sparse and redundant representations over learned dictionaries. *IEEE Transactions on Image processing*, 15(12):3736–3745, 2006.
- [44] Fang, L., Li, S., Kang, X., and Benediktsson, J. A. Spectral–spatial hyperspectral image classification via multiscale adaptive sparse representation. *IEEE Transactions on Geoscience and Remote sensing*, 52(12):7738–7749, 2014.
- [45] Fang, L., Li, S., Kang, X., and Benediktsson, J. A. Spectral–spatial classification of hyperspectral images with a superpixel-based discriminative sparse model. *IEEE Transactions on Geoscience and Remote Sensing*, 53(8):4186–4201, 2015.
- [46] Fang, L., Wang, C., Li, S., and Benediktsson, J. A. Hyperspectral image classification via multiple-feature-based adaptive sparse representation. *IEEE Transactions on Instrumentation and Measurement*, 66(7):1646–1657, 2017.
- [47] Farbman, Z., Fattal, R., Lischinski, D., and Szeliski, R. Edge-preserving decompositions for multi-scale tone and detail manipulation. *ACM Transactions on Graphics (TOG)*, 27(3):1–10, 2008.
- [48] Fattal, R., Lischinski, D., and Werman, M. Gradient domain high dynamic range compression. In *Seminal Graphics Papers: Pushing the Boundaries, Volume 2*, pages 671–678. 2023.



- [49] Fredo, D. and Julie, D. Fast bilateral filtering for the display of high-dynamic-range images. In *Proceedings of the 29th Annual Conference on Computer Graphics and Interactive Techniques*, SIGGRAPH '02, page 257–266. Association for Computing Machinery, 2002. ISBN 1581135211.
- [50] Frost, V. S., Stiles, J. A., Shanmugan, K. S., and Holtzman, J. C. A model for radar images and its application to adaptive digital filtering of multiplicative noise. *IEEE Transactions on pattern analysis and machine intelligence*, (2):157–166, 1982.
- [51] Fu, H., Zhang, A., Sun, G., Ren, J., Jia, X., Pan, Z., and Ma, H. A novel band selection and spatial noise reduction method for hyperspectral image classification. *IEEE transactions on geoscience and remote sensing*, 60:1–13, 2022.
- [52] Fu, W., Li, S., Fang, L., Kang, X., and Benediktsson, J. A. Hyperspectral image classification via shape-adaptive joint sparse representation. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 9(2):556–567, 2015.
- [53] Gastal, E. and Oliveira, M. Adaptive manifolds for real-time high-dimensional filtering. *ACM Transactions on Graphics*, 31:33:1–33:13, 07 2012.
- [54] Gastal, E. S. and Oliveira, M. M. Domain transform for edge-aware image and video processing. *ACM Transactions on Graphics (TOG)*, 30(4):1–12, 2011.
- [55] Gavaskar, R. G. and Chaudhury, K. N. Fast adaptive bilateral filtering. *IEEE Transactions on Image Processing*, 28(2):779–790, Feb 2019. ISSN 1941-0042.
- [56] Ghamisi, P., Höfle, B., and Zhu, X. X. Hyperspectral and lidar data fusion using extinction profiles and deep convolutional neural network. *IEEE Jour-*

- nal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(6):3011–3024, 2016.
- [57] Ghamisi, P., Maggiori, E., Li, S., Souza, R., Tarablaka, Y., Moser, G., De Giorgi, A., Fang, L., Chen, Y., Chi, M., et al. New frontiers in spectral-spatial hyperspectral image classification: The latest advances based on mathematical morphology, markov random fields, segmentation, sparse representation, and deep learning. *IEEE Geoscience and Remote Sensing Magazine*, 6(3):10–43, 2018.
- [58] Gonzalez, R. *Digital Image Processing*. Pearson Education, 2009. ISBN 9788131726952. URL [https://books.google.co.in/books?id=a62xQ2r\\_f8wC](https://books.google.co.in/books?id=a62xQ2r_f8wC).
- [59] González-Hidalgo, M., Massanet, S., Mir, A., and Ruiz-Aguilera, D. A fuzzy morphological hit-or-miss transform for grey-level images. *Fuzzy Sets Syst.*, 286(C):30–65, Mar. 2016. ISSN 0165-0114.
- [60] Green, O. Efficient scalable median filtering using histogram-based operations. *IEEE Transactions on Image Processing*, 27(5):2217–2228, 2017.
- [61] Hardie, R. C. and Barner, K. E. Rank conditioned rank selection filters for signal restoration. *IEEE Transactions on Image Processing*, 3(2):192–206, March 1994.
- [62] Hays, J., Leordeanu, M., Efros, A. A., and Liu, Y. Discovering texture regularity as a higher-order correspondence problem. In *European Conference on Computer Vision*, pages 522–535. Springer, 2006.
- [63] He, K., Sun, J., and Tang, X. Guided image filtering. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 35:1397–1409, 06 2013.
- [64] Huang, T., Yang, G., and Tang, G. A fast two-dimensional median filtering algorithm. *IEEE transactions on acoustics, speech, and signal processing*, 27(1):13–18, 1979.

- [65] Ioannis Pitas, A. N. V. *Nonlinear Digital Filters*. 1990.
- [66] Iordache, M.-D., Bioucas-Dias, J. M., and Plaza, A. Sparse unmixing of hyperspectral data. *IEEE Transactions on Geoscience and Remote Sensing*, 49(6):2014–2039, 2011.
- [67] Jain, A. K. In *Fundamentals of Digital Image Processing*, 1989.
- [68] Jang, J. and Jiang, H. Meanshift++: Extremely fast mode-seeking with applications to segmentation and object tracking. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*, pages 4102–4113, 2021.
- [69] Jeon, J., Lee, H., Kang, H., and Lee, S. Scale-aware structure-preserving texture filtering. *Computer Graphics Forum*, 35(7):77–86, Oct. 2016. ISSN 0167-7055.
- [70] Kang, X., Li, S., and Benediktsson, J. A. Spectral–spatial hyperspectral image classification with edge-preserving filtering. *IEEE transactions on geoscience and remote sensing*, 52(5):2666–2677, 2013.
- [71] Kang, X., Xiang, X., Li, S., and Benediktsson, J. A. Pca-based edge-preserving features for hyperspectral image classification. *IEEE Transactions on Geoscience and Remote Sensing*, 55(12):7140–7151, 2017.
- [72] Karacan, L., Erdem, E., and Erdem, A. Structure-preserving image smoothing via region covariances. *ACM Transactions on Graphics (TOG)*, 32(6): 1–11, 2013.
- [73] Karimi, D. and Salcudean, S. E. Reducing the hausdorff distance in medical image segmentation with convolutional neural networks. *IEEE Transactions on medical imaging*, 39(2):499–513, 2019.
- [74] Kervrann, C. and Boulanger, J. Optimal spatial adaptation for patch-based

- image denoising. *IEEE Transactions on Image Processing*, 15(10):2866–2878, 2006.
- [75] Kim, B., Ponce, J., and Ham, B. Deformable kernel networks for joint image filtering. *International Journal of Computer Vision*, 129(2):579–600, 2021.
- [76] Kim, Y., Ham, B., Do, M. N., and Sohn, K. Structure-texture image decomposition using deep variational priors. *IEEE Transactions on Image Processing*, 28(6):2692–2704, 2018.
- [77] Kryjak, T., Komorkiewicz, M., and Gorgon, M. Real-time background generation and foreground object segmentation for high-definition colour video stream in fpga device. *Journal of Real-Time Image Processing*, 9:61–77, 2014.
- [78] Kumar, V., Singh, R. S., and Dua, Y. Morphologically dilated convolutional neural network for hyperspectral image classification. *Signal Processing: Image Communication*, 101:116549, 2022.
- [79] Lee, H., Jeon, J., Kim, J., and Lee, S. Structure-texture decomposition of images with interval gradient. In *Computer graphics forum*, volume 36, pages 262–274. Wiley Online Library, 2017.
- [80] Legaz Aparicio, , Verdú-Monedero, R., and Angulo, J. Adaptive morphological filters based on a multiple orientation vector field dependent on image local features. *Journal of Computational and Applied Mathematics*, 330, 06 2017.
- [81] Lehtinen, J. Noise2noise: Learning image restoration without clean data. *arXiv preprint arXiv:1803.04189*, 2018.
- [82] Lei, T., Jia, X., Liu, T., Liu, S., Meng, H., and Nandi, A. K. Adaptive morphological reconstruction for seeded image segmentation. *IEEE Transactions on Image Processing*, 28(11):5510–5523, 2019.

- [83] Lerallut, R., Decencière, E., and Meyer, F. Image filtering using morphological amoebas. *Image and Vision Computing*, 25:395–404, 04 2007.
- [84] Li, W. *Semantic-aware image analysis*. PhD thesis, 2020.
- [85] Likforman-Sulem, L., Darbon, J., and Smith, E. H. B. Enhancement of historical printed document images by combining total variation regularization and non-local means filtering. *Image and vision computing*, 29(5):351–363, 2011.
- [86] Lin, J. Divergence measures based on the shannon entropy. *IEEE Transactions on Information theory*, 37(1):145–151, 1991.
- [87] Lin, T. H., Way, D. L., Shih, Z. C., Tai, W. K., and Chang, C. C. An efficient structure-aware bilateral texture filtering for image smoothing. In *Computer Graphics Forum*, volume 35, pages 57–66. Wiley Online Library, 2016.
- [88] Liu, B. and Lu, X. Pointwise shape-adaptive texture filtering. In *IEEE International Conference on Multimedia and Expo (ICME)*, pages 1–6, 2018.
- [89] Liu, C., Shao, H., Wu, M., Zhou, Y., Shao, Y., and Wang, X. Multi-scale inherent variation features-based texture filtering. *The Visual Computer*, 33(6):769–778, 2017.
- [90] Liu, W., Zhang, P., Chen, X., Shen, C., Huang, X., and Yang, J. Embedding bilateral filter in least squares for efficient edge-preserving image smoothing. *IEEE Transactions on Circuits and Systems for Video Technology*, 30(1):23–35, 2018.
- [91] Liu, W., Zhang, P., Huang, X., Yang, J., Shen, C., and Reid, I. Real-time image smoothing via iterative least squares. *ACM Transactions on Graphics (TOG)*, 39(3):1–24, 2020.

- [92] Liu, W., Zhang, P., Lei, Y., Huang, X., Yang, J., and Ng, M. K.-P. A generalized framework for edge-preserving and structure-preserving image smoothing. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2021.
- [93] Liu, Y., Lin, W. C., and Hays, J. Near-regular texture analysis and manipulation. *ACM Transactions on Graphics (TOG)*, 23(3):368–376, 2004.
- [94] Liu, Y., Liu, G., Liu, H., and Liu, C. Structure-aware texture filtering based on local histogram operator. *IEEE Access*, 8:43838–43849, 2020.
- [95] Lu, K., You, S., and Barnes, N. Deep texture and structure aware filtering network for image smoothing. In *Proceedings of the European conference on computer vision (ECCV)*, pages 217–233, 2018.
- [96] Maggioni, V., Anagnostou, E., and Reichle, R. The impact of model and rainfall forcing errors on characterizing soil moisture uncertainty in land surface modeling. *Hydrology and Earth System Sciences*, 16:3499–3515, 10 2012.
- [97] Mahmoudi, M. and Sapiro, G. Fast image and video denoising via nonlocal means of similar neighborhoods. *IEEE signal processing letters*, 12(12):839–842, 2005.
- [98] Makitalo, M. and Foi, A. Optimal inversion of the generalized anscombe transformation for poisson-gaussian noise. *IEEE transactions on image processing*, 22(1):91–103, 2012.
- [99] Malladi, R. and Sethlan, J. A. Image processing via level set curvature flow (image enhancement/image smoothing/geometric heat equation). *Lawrence Berkeley Laboratory and Department of Mathematics, University of California, Berkeley, CA 94720*, February 27, 1995.

- [100] Martin, D., Fowlkes, C., Tal, D., and Malik, J. A database of human segmented natural images and its application to evaluating segmentation algorithms and measuring ecological statistics. In *Proc. 8th Int'l Conf. Computer Vision*, volume 2, pages 416–423, July 2001.
- [101] Meyer, F. and Stawiaski, J. Morphology on graphs and minimum spanning trees. pages 161–170, 08 2009.
- [102] Mirzaei, S. Hyperspectral image classification using k-plane clustering and kernel principal component analysis. *Multimedia Tools and Applications*, pages 1–17, 2023.
- [103] Ochotorena, C. N. and Yamashita, Y. Anisotropic guided filtering. *IEEE Transactions on Image Processing*, 29:1397–1412, 2019.
- [104] Paris, S. and Durand, F. A fast approximation of the bilateral filter using a signal processing approach. *International Journal of Computer Vision*, 81: 24–52, 2009.
- [105] Patra, S., Bhardwaj, K., and Bruzzone, L. A spectral-spatial multicriteria active learning technique for hyperspectral image classification. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10(12):5213–5227, 2017.
- [106] Perona, P. and Malik, J. Scale-space and edge detection using anisotropic diffusion. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 12(7):629–639, July 1990. ISSN 1939-3539.
- [107] Porikli, F., Ivanov, Y., and Haga, T. Robust abandoned object detection using dual foregrounds. *EURASIP Journal on Advances in Signal Processing*, 2008(1):197875, 2007.
- [108] Portilla, J., Strela, V., Wainwright, M. J., and Simoncelli, E. P. Image denoising using scale mixtures of gaussians in the wavelet domain. *IEEE Transactions on Image processing*, 12(11):1338–1351, 2003.

- [109] Pradhan, K. and Patra, S. Structure preserving semantic texture filtering. In *2022 IEEE Calcutta Conference (CALCON)*, pages 283–287, 2022. doi: 10.1109/CALCON56258.2022.10060620.
- [110] Pradhan, K. and Patra, S. Structure preserving semantic texture filtering. In *2022 IEEE Calcutta Conference (CALCON)*, pages 283–287. IEEE, 2022.
- [111] Pradhan, K. and Patra, S. Semantic-aware structure-preserving median morpho-filtering. *The Visual Computer*, pages 1–17, 2023.
- [112] Pradhan, K. and Patra, S. A semantic edge-aware parameter efficient image filtering technique. *Computers & Graphics*, 124:104068, 2024.
- [113] Reinhard, E. Parameter estimation for photographic tone reproduction. *Journal of graphics tools*, 7(1):45–51, 2002.
- [114] Rivest, J. F., Soille, P., and Beucher, S. Morphological gradients. *Journal of Electronic Imaging*, 2(4):326–336, 1993.
- [115] Rudin, L. I., Osher, S., and Fatemi, E. Nonlinear total variation based noise removal algorithms. *Physica D: nonlinear phenomena*, 60(1-4):259–268, 1992.
- [116] Rudin, L. I., Osher, S., and Fatemi, E. Nonlinear total variation based noise removal algorithms. *Physica D: nonlinear phenomena*, 60(1-4):259–268, 1992.
- [117] Ruikar, S. D. and Doye, D. D. Wavelet based image denoising technique. *International Journal of Advanced Computer Science and Applications*, 2(3), 2011.
- [118] Saian, P. O. N. Parallel counting sort: A modified of counting sort algorithm. *International Journal of Information Technology and Business*, 1(1):10–15, 2018.



- [119] Salembier, P., Oliveras, A., and Garrido, L. Antiextensive connected operators for image and sequence processing. *IEEE Transactions on Image Processing*, 7(4):555–570, 1998.
- [120] Sergio, D. P. and Diniz, R. Adaptive filtering: Algorithms and practical implementation, 2002.
- [121] Serra, J. *Image Analysis and Mathematical Morphology*. Academic Press, Inc., USA, 1983. ISBN 0126372403.
- [122] Serra, J. *Image analysis and mathematical morphology*. Academic Press, Inc., 1983.
- [123] Serra, J. and Vincent, L. An overview of morphological filtering. *Circuits, Systems and Signal Processing*, 11:47–108, 1992.
- [124] Smith, S. and Brady, J. Susan—a new approach to low level image processing. *International Journal of Computer Vision* 23, 45–78 (1997), page 45–78, 1997.
- [125] Song, J., Cho, H., Yoon, J., and Yoon, S. M. Structure adaptive total variation minimization-based image decomposition. *IEEE Transactions on Circuits and Systems for Video Technology*, 28(9):2164–2176, 2017.
- [126] Stein, A. and De Beurs, K. Complexity metrics to quantify semantic accuracy in segmented landsat images. *International journal of remote sensing*, 26(14):2937–2951, 2005.
- [127] Su, Z., Luo, X., and Artusi, A. A novel image decomposition approach and its applications. *The Visual Computer*, 29(10):1011–1023, 2013.
- [128] Sun, Y., Schaefer, S., and Wang, W. Image structure retrieval via  $L_0$  minimization. *IEEE transactions on visualization and computer graphics*, 24(7): 2129–2139, 2017.

- [129] Sun, Z., Liu, T., Li, J., Wang, Y., and Gao, X. Patch-based co-occurrence filter with fast adaptive kernel. *Signal Processing*, 185:108089, 2021.
- [130] Tomasi, C. and Manduchi, R. Bilateral filtering for gray and color images. In *6th international conference on computer vision*, pages 839–846. IEEE, 1998.
- [131] Tsai, D.-Y., Matsuyama, E., and Lee, Y. A mutual information-based image quality metric for medical imaging systems. In *Medical Imaging*. IntechOpen, 2011.
- [132] Venkatanath, N., Praneeth, D., Bh, M. C., Channappayya, S. S., and Medasani, S. S. Blind image quality evaluation using perception based features. In *2015 Twenty First National Conference on Communications (NCC)*, pages 1–6. IEEE, 2015.
- [133] Wang, C., Xu, L., and Liu, L. Structure–texture image decomposition via non-convex total generalized variation and convolutional sparse coding. *The Visual Computer*, 2022.
- [134] Wang, D., Yan, W., Zhu, T., Xie, Y., Song, H., and Hu, X. An adaptive correction algorithm for non-uniform illumination panoramic images based on the improved bilateral gamma function. In *2017 International Conference on Digital Image Computing: Techniques and Applications (DICTA)*, pages 1–6, Nov 2017.
- [135] Wang, H., Cao, J., Liu, X., Wang, J., Fan, T., and Hu, J. Least-squares images for edge-preserving smoothing. *Computational Visual Media*, 1(1): 27–35, 2015.
- [136] Wang, Z., Bovik, A. C., Sheikh, H. R., and Simoncelli, E. P. Image quality assessment: from error visibility to structural similarity. *IEEE transactions on image processing*, 13(4):600–612, 2004.

- [137] Weickert, J. Coherence-enhancing diffusion filtering. *International Journal of Computer Vision*, 31(2):111–127, 1999. ISSN 1573-1405.
- [138] Xu, L., Lu, C., Xu, Y., and Jia, J. Image smoothing via  $L_0$  gradient minimization. *ACM Transactions on Graphics (TOG)*, 30(6):1–12, 2011.
- [139] Xu, L., Yan, Q., Xia, Y., and Jia, J. Structure extraction from texture via relative total variation. *ACM transactions on graphics (TOG)*, 31(6):1–10, 2012.
- [140] Xu, P. and Wang, W. Improved bilateral texture filtering with edge-aware measurement. *IEEE Transactions on Image Processing*, 27(7):3621–3630, July 2018.
- [141] Xu, P. and Wang, W. Structure-aware window optimization for texture filtering. *IEEE Transactions on Image Processing*, 28(9):4354–4363, 2019.
- [142] Xu, Y., Géraud, T., and Najman, L. Connected filtering on tree-based shape-spaces. *IEEE transactions on pattern analysis and machine intelligence*, 38(6):1126–1140, 2015.
- [143] Yang, G. Z., Burger, P., Firmin, D. N., and Underwood, S. Structure adaptive anisotropic image filtering. *Image and Vision Computing*, 14(2):135–145, 1996.
- [144] Yang, J., Wu, C., You, T., Wang, D., Li, Y., Shang, C., and Shen, Q. Hierarchical spatio-spectral fusion for hyperspectral image super resolution via sparse representation and pre-trained deep model. *Knowledge-Based Systems*, 260:110170, 2023.
- [145] Yang, Q. Semantic filtering. In *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, pages 4517–4526, 06 2016.
- [146] Yang, Q., Tan, K., and Ahuja, N. Real-time  $o(1)$  bilateral filtering. In

- 2009 IEEE Conference on Computer Vision and Pattern Recognition*, pages 557–564, June 2009.
- [147] Yang, Y., Hui, H., Zeng, L., Zhao, Y., Zhan, Y., and Yan, T. Edge-preserving image filtering based on soft clustering. *IEEE Transactions on Circuits and Systems for Video Technology*, 32(7):4150–4162, 2021.
- [148] Yao, J., Cao, X., Hong, D., Wu, X., Meng, D., Chanussot, J., and Xu, Z. Semi-active convolutional neural networks for hyperspectral image classification. *IEEE Transactions on Geoscience and Remote Sensing*, 60:1–15, 2022.
- [149] Ye, W. and Ma, K. K. Semantic image content filtering via edge-preserving scale-aware filter. In *IEEE International Conference on Image Processing (ICIP)*, pages 2443–2447, 2017.
- [150] Yin, H., Gong, Y., and Qiu, G. Side window guided filtering. *Signal Processing*, 165:315–330, 2019.
- [151] Yu, C., Gao, C., Wang, J., Yu, G., Shen, C., and Sang, N. Bisenet v2: Bilateral network with guided aggregation for real-time semantic segmentation. *International journal of computer vision*, 129:3051–3068, 2021.
- [152] Yuan, Y., Lin, J., and Wang, Q. Hyperspectral image classification via multitask joint sparse representation and stepwise mrf optimization. *IEEE transactions on cybernetics*, 46(12):2966–2977, 2015.
- [153] Yuhas, R. H., Goetz, A. F., and Boardman, J. W. Discrimination among semi-arid landscape endmembers using the spectral angle mapper (sam) algorithm. In *JPL, Summaries of the Third Annual JPL Airborne Geoscience Workshop. Volume 1: AVIRIS Workshop*, 1992.
- [154] Zhang, B. and Allebach, J. P. Adaptive bilateral filter for sharpness enhancement and noise removal. *IEEE Transactions on Image Processing*, 17(5):664–678, May 2008. ISSN 1941-0042.

- [155] Zhang, G., Wang, J., Zhang, X., Fei, H., and Tu, B. Adaptive total variation-based spectral-spatial feature extraction of hyperspectral image. *Journal of Visual Communication and Image Representation*, 56:150–159, 2018.
- [156] Zhang, H., Xue, J., and Dana, K. Deep ten: Texture encoding network. In *Proceedings of the IEEE conference on computer vision and pattern recognition*, pages 708–717, 2017.
- [157] Zhang, K., Zuo, W., Chen, Y., Meng, D., and Zhang, L. Beyond a gaussian denoiser: Residual learning of deep cnn for image denoising. *IEEE transactions on image processing*, 26(7):3142–3155, 2017.
- [158] Zhao, H., Jiang, L., Jin, X., Du, H., and Li, X. Constant time texture filtering. *The Visual Computer*, 34(1):83–92, 2018.
- [159] Zhou, F., Chen, Q., Liu, B., and Qiu, G. Structure and texture-aware image decomposition via training a neural network. *IEEE Transactions on Image Processing*, 29:3458–3473, 2019.
- [160] Zhu, L., Hu, X., Fu, C. W., Qin, J., and Heng, P. A. Saliency-aware texture smoothing. *IEEE Transactions on Visualization and Computer Graphics*, 26(7):2471–2484, 2018.