

Disclaimer:

This MATLAB code is experimental and for non-commercial use only. No warranty is provided or implied.

Purpose:

For reproducing the results for bilateral filters, which includes grid-subsampled PMF derivation, EFM and L-moment fitting, and fast image filtering (multicore processing and vectorization).

File description:

ori_color_images/*.png: Twelve standard color images

utility/*.m : Basic tools

utility_csm/*.m : Tools for CSM fitting and bilateral filtering

utility_merge/*.m : Tools for merging bins

utility_lmoment/*.m : Tools for L-moments

test_default_configuration.m: Top simulation Matlab code

GPMF_EFM_yaro_bf_recursive_filtering.m: Main function for EFM fitting [1]

GPMF_LM_yaro_bf_recursive_filtering.m: Main function for L-moment fitting [1]

yaro_bf_recursive_filtering.m: Main function for direct EM+ fitting [2]

GPMF_EFM_yyaro_bf_recursive_filtering/: Output data directory (to be generated)

GPMF_LM_yaro_bf_recursive_filtering/: Output data directory (to be generated)

yaro_bf_recursive_filtering/: Output data directory (to be generated)

Usage:

The default configuration of the recursive scheme can be performed by running test_default_configuration.m using MATLAB. Parallel Computing Toolbox is required to enable the multi-core acceleration.

Related papers:

- [1] C.-T. Huang, "Fast Distribution Fitting for Parameter Estimation of Range-Weighted Neighborhood Filters," *submitted to IEEE Signal Processing Letters*.
 - [2] C.-T. Huang, "Bayesian Inference for Neighborhood Filters with Application in Denoising," *IEEE Trans. Image Processing*, vol. 24, no. 11, pp. 4299-4311, Nov. 2015.
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For any question, please contact the author via chaotsung@ee.nthu.edu.tw.

We thank you for your interest in this work.

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