Image Filtering and Enhancement

Contrast adjustment, morphological filtering, deblurring, ROI-based processing

Image enhancement is the process of adjusting images so that the results are more suitable for display or further image analysis. For example, you can remove noise, sharpen, or adjust the contrast of an image, making it easier to identify key features.

Image Filtering
Convolution and correlation, predefined and custom filters, nonlinear filtering, edge-preserving filters

Contrast Adjustment
Contrast adjustment, histogram equalization, decorrelation stretching

Morphological Operations
Dilate, erode, reconstruct, and perform other morphological operations

Deblurring
Deconvolution for deblurring

ROI-Based Processing
Define and operate on regions of interest (ROI)

Neighborhood and Block Processing
Define neighborhoods and blocks for filtering and I/O operations

Image Arithmetic
Add, subtract, multiply, and divide images

Featured Examples

Contrast Enhancement Techniques

Comparison of Auto White Balance Algorithms

Low-Light Image Enhancement

Generate HDL Code for Image Sharpening

This example shows how to adjust the contrast of grayscale and color images using three techniques:

Our eyes are very good at judging what is white under different lighting conditions. Digital cameras

This example shows how to use haze removal techniques to enhance the dynamic range of low

This example shows how to use Vision HDL Toolbox™ to implement an FPGA-based module for image