Image Processing Functions

For:
ISee PC Imaging Software
ISee MAC Imaging Software
ISee SGI Imaging Software

Processing an acquired image or images typically involves the enhancement of features within the image(s) and selecting features within the image(s) for data analysis. ISee’s standard processing functions allows the user to interactively create multiple region of interests (ROIs) with a single image or list of images and provides an almost unlimited combination of contrast enhancement, edge, smoothing and sharpening filters, haze removal filters, and feature extraction parameters in preparation for data analysis. With ISee, original image integrity is always maintained through the uses of internally created image duplicates.

Feature Extraction Routine

Allows the user to view the original image, the image of the accepted features and the image of the features that were rejected.

Haze Removal with 2D FFT Deconvolution Function

Features Accepted

Hazy Image

Haze Removed
### ISee's Standard Image Processing Tools include:

#### Create Single and Multiple ROIs
- Per Image
- Per Stacks of Images

#### Arithmetic Functions
- Addition
- Subtraction
- Multiplication
- Division

#### Logical Functions
- AND
- OR
- XOR
- NOT

#### Geometric Functions
- Rotate
- Scale
- Reflect
- Transpose
- Translate
- Warping

#### Morphological Functions
- Erosion
- Dilation
- Opening
- Closing
- Skeletonization

#### Process Control Functions
- Go
- If
- Loop
- Parallel
- Prompt
- Split
- Sync
- Wait
- Merge

#### Image Filters
- Edge Filters (Sharpening)
  - Sobel
  - Prewitt
  - Roberts
  - Laplacian
- Convolution Filters (Blurring)
  - 3X3
  - 5X5
  - 7X7
- User Definable
- Median Filters (Smoothing)
  - 5X2
  - 3X3
  - 5X5
  - 7X7
- 2D Fourier Spectra Filters
- Amplitude
- Phase
- Power
- 2D FFT Deconvolution Filters (Haze Removal)
- Weiner
- Interactive Constrained
  - Van Crittert Method
  - Gold Method
- Point Spread Function Calculation
  - PSF Image
  - Mathematical
- Nearest Neighbor Deconvolution Filter

#### Feature Extraction Functions
- Intensity Thresholding
- Segmentation
- Open/Close Operators
- Size Threshold
- Shape Parameters
  - N Pixels
  - Total Area
  - Max Rad Angle
  - N Holes
  - Hole %
  - Min/Max Angle
  - Area
  - Perimeter
  - Min/Max Ratio
  - Center X
  - Angle
  - Hole Perimeter
  - Center Y
  - Major Length
  - Total Perimeter
  - Box Width
  - Ppda
  - Minor Length
  - Box Height
  - Roundness
  - Axial Ratio
  - Box Area
  - Mean Radius
  - Variance Radius
  - Min Radius
  - Max Radius
  - Center Box X
  - Hole Area
  - Center Box Y
  - Min Rad Angle

#### Image Intensity Functions
- Adaptive Histogram Equalization
- Contrast Enhancement
- Exponential Intensity Scaling
- Logarithmic Intensity Scaling
- Intensity Masking
- Square Root Intensity Scaling
- Threshold Intensity Scaling

#### Image Conversion Functions
- RGB to HSI
- HSI to RGB
- 12/16-Bit .TIFF to 8-Bit .TIFF
- ISee Image File Format To:
- .bmp
- .cur
- .eps
- .fit
- .gif
- .hdf
- .ico
- .icon
- .jfif
- .mpnt
- .pnm
- .ppm
- .ps
- .ras
- .rawrgb
- .rgbA
- .rla
- .rle
- .rpbm
- .rpm
- .ppnm
- .rppm
- .soft
- .synu
- .tga
- .tif
- .viff
- .x
- .xbm
- .xwd

#### Movie Conversion Functions
- AVI
- MPEG
- QT
- SGiMV