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Image Processing Toolbox.
Version 3.2 (R13) 28-Jun-2002

Release information.
  images/Readme - Display information about current and previous versions.

Image display.
  colorbar       - Display colorbar (MATLAB Toolbox).
  getimage       - Get image data from axes.
  image          - Create and display image object (MATLAB Toolbox).
  imagesc        - Scale data and display as image (MATLAB Toolbox).
  immovie        - Make movie from multiframe image.
  imshow         - Display image.
  montage        - Display multiple image frames as rectangular montage.
  movie          - Play recorded movie frames (MATLAB Toolbox).
  subimage       - Display multiple images in single figure.
  truesize       - Adjust display size of image.
  warp           - Display image as texture-mapped surface.

Image file I/O.
  dicominfo      - Read metadata from a DICOM message.
  dicomread      - Read a DICOM image.
  dicomwrite     - Write a DICOM image.
  dicom-dict.txt - Text file containing DICOM data dictionary.
  imfinfo        - Return information about image file (MATLAB Toolbox).
  imread         - Read image file (MATLAB Toolbox).
  imwrite        - Write image file (MATLAB Toolbox).

Image arithmetic.
  imabsdiff      - Compute absolute difference of two images.
  imadd          - Add two images, or add constant to image.
  imcomplement   - Complement image.
  imdivide       - Divide two images, or divide image by constant.
  imlincomb      - Compute linear combination of images.
  immultiply     - Multiply two images, or multiply image by constant.
  imsubtract     - Subtract two images, or subtract constant from image.

Geometric transformations.
  checkerboard   - Create checkerboard image.
  findbounds     - Find output bounds for geometric transformation.
  fliptform      - Flip the input and output roles of a TFORM struct.
  imcrop         - Crop image.
  imresize       - Resize image.
  imrotate       - Rotate image.
  imtransform    - Apply geometric transformation to image.
  makeresampler  - Create resampler structure.
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  maketform      - Create geometric transformation structure (TFORM).
  tformarray     - Apply geometric transformation to N-D array.
  tformfwd       - Apply forward geometric transformation.
  tforminv       - Apply inverse geometric transformation.

Image registration.
  cpstruct2pairs - Convert CPSTRUCT to valid pairs of control points.
  cp2tform       - Infer geometric transformation from control point pairs.
  cpcorr         - Tune control point locations using cross-correlation.
  cpselect       - Control point selection tool.
  normxcorr2     - Normalized two-dimensional cross-correlation.

Pixel values and statistics.
  corr2          - Compute 2-D correlation coefficient.
  imcontour      - Create contour plot of image data.
  imhist         - Display histogram of image data.
  impixel        - Determine pixel color values.
  improfile      - Compute pixel-value cross-sections along line segments.
  mean2          - Compute mean of matrix elements.
  pixval         - Display information about image pixels.
  regionprops    - Measure properties of image regions.
  std2           - Compute standard deviation of matrix elements.

Image analysis.
  edge           - Find edges in intensity image.
  qtdecomp       - Perform quadtree decomposition.
  qtgetblk       - Get block values in quadtree decomposition.
  qtsetblk       - Set block values in quadtree decomposition.

Image enhancement.
  histeq         - Enhance contrast using histogram equalization.
  imadjust       - Adjust image intensity values or colormap.
  imnoise        - Add noise to an image.
  medfilt2       - Perform 2-D median filtering.
  ordfilt2       - Perform 2-D order-statistic filtering.
  stretchlim     - Find limits to contrast stretch an image.
  wiener2        - Perform 2-D adaptive noise-removal filtering.

Linear filtering.
  convmtx2       - Compute 2-D convolution matrix.
  fspecial       - Create predefined filters.
  imfilter       - Filter 2-D and N-D images.

Linear 2-D filter design.
  freqspace      - Determine 2-D frequency response spacing (MATLAB Toolbox).
  freqz2         - Compute 2-D frequency response.
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  fsamp2          - Design 2-D FIR filter using frequency sampling.
  ftrans2         - Design 2-D FIR filter using frequency transformation.
  fwind1          - Design 2-D FIR filter using 1-D window method.
  fwind2          - Design 2-D FIR filter using 2-D window method.

Image deblurring.
  deconvblind     - Deblur image using blind deconvolution.
  deconvlucy      - Deblur image using Lucy-Richardson method.
  deconvreg       - Deblur image using regularized filter.
  deconvwnr       - Deblur image using Wiener filter.
  edgetaper       - Taper edges using point-spread function.
  otf2psf         - Optical transfer function to point-spread function.
  psf2otf         - Point-spread function to optical transfer function.

Image transforms.
  dct2            - 2-D discrete cosine transform.
  dctmtx          - Discrete cosine transform matrix.
  fft2            - 2-D fast Fourier transform (MATLAB Toolbox).
  fftn            - N-D fast Fourier transform (MATLAB Toolbox).
  fftshift        - Reverse quadrants of output of FFT (MATLAB Toolbox).
  idct2           - 2-D inverse discrete cosine transform.
  ifft2           - 2-D inverse fast Fourier transform (MATLAB Toolbox).
  ifftn           - N-D inverse fast Fourier transform (MATLAB Toolbox).
  iradon          - Compute inverse Radon transform.
  phantom         - Generate a head phantom image.
  radon           - Compute Radon transform.

Neighborhood and block processing.
  bestblk         - Choose block size for block processing.
  blkproc         - Implement distinct block processing for image.
  col2im          - Rearrange matrix columns into blocks.
  colfilt         - Columnwise neighborhood operations.
  im2col          - Rearrange image blocks into columns.
  nlfilter        - Perform general sliding-neighborhood operations.

Morphological operations (intensity and binary images).
  conndef         - Default connectivity.
  imbothat        - Perform bottom-hat filtering.
  imclearborder   - Suppress light structures connected to image border.
  imclose         - Close image.
  imdilate        - Dilate image.
  imerode         - Erode image.
  imextendedmax   - Extended-maxima transform.
  imextendedmin   - Extended-minima transform.
  imfill          - Fill image regions and holes.
  imhmax          - H-maxima transform.
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  imhmin          - H-minima transform.
  imimposemin     - Impose minima.
  imopen          - Open image.
  imreconstruct   - Morphological reconstruction.
  imregionalmax   - Regional maxima.
  imregionalmin   - Regional minima.
  imtophat        - Perform tophat filtering.
  watershed       - Watershed transform.

Morphological operations (binary images)
  applylut        - Perform neighborhood operations using lookup tables.
  bwarea          - Compute area of objects in binary image.
  bwareaopen      - Binary area open (remove small objects).
  bwdist          - Compute distance transform of binary image.
  bweuler         - Compute Euler number of binary image.
  bwhitmiss       - Binary hit-miss operation.
  bwlabel         - Label connected components in 2-D binary image.
  bwlabeln        - Label connected components in N-D binary image.
  bwmorph         - Perform morphological operations on binary image.
  bwpack          - Pack binary image.
  bwperim         - Determine perimeter of objects in binary image.
  bwselect        - Select objects in binary image.
  bwulterode      - Ultimate erosion.
  bwunpack        - Unpack binary image.
  makelut         - Construct lookup table for use with applylut.

Structuring element (STREL) creation and manipulation.
  getheight       - Get strel height.
  getneighbors    - Get offset location and height of strel neighbors
  getnhood        - Get strel neighborhood.
  getsequence     - Get sequence of decomposed strels.
  isflat          - Return true for flat strels.
  reflect         - Reflect strel about its center.
  strel           - Create morphological structuring element.
  translate       - Translate strel.

Region-based processing.
  roicolor        - Select region of interest, based on color.
  roifill         - Smoothly interpolate within arbitrary region.
  roifilt2        - Filter a region of interest.
  roipoly         - Select polygonal region of interest.

Colormap manipulation.
  brighten        - Brighten or darken colormap (MATLAB Toolbox).
  cmpermute       - Rearrange colors in colormap.
  cmunique        - Find unique colormap colors and corresponding image.
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  colormap       - Set or get color lookup table (MATLAB Toolbox).
  imapprox       - Approximate indexed image by one with fewer colors.
  rgbplot        - Plot RGB colormap components (MATLAB Toolbox).

Color space conversions.
  hsv2rgb        - Convert HSV values to RGB color space (MATLAB Toolbox).
  ntsc2rgb       - Convert NTSC values to RGB color space.
  rgb2hsv        - Convert RGB values to HSV color space (MATLAB Toolbox).
  rgb2ntsc       - Convert RGB values to NTSC color space.
  rgb2ycbcr      - Convert RGB values to YCBCR color space.
  ycbcr2rgb      - Convert YCBCR values to RGB color space.

Array operations.
  circshift      - Shift array circularly. (MATLAB Toolbox).
  padarray       - Pad array.

Image types and type conversions.
  dither         - Convert image using dithering.
  gray2ind       - Convert intensity image to indexed image.
  grayslice      - Create indexed image from intensity image by thresholding.
  graythresh     - Compute global image threshold using Otsu's method.
  im2bw          - Convert image to binary image by thresholding.
  im2double      - Convert image array to double precision.
  im2java        - Convert image to Java image (MATLAB Toolbox).
  im2uint8       - Convert image array to 8-bit unsigned integers.
  im2uint16      - Convert image array to 16-bit unsigned integers.
  ind2gray       - Convert indexed image to intensity image.
  ind2rgb        - Convert indexed image to RGB image (MATLAB Toolbox).
  isbw           - Return true for binary image.
  isgray         - Return true for intensity image.
  isind          - Return true for indexed image.
  isrgb          - Return true for RGB image.
  label2rgb      - Convert label matrix to RGB image.
  mat2gray       - Convert matrix to intensity image.
  rgb2gray       - Convert RGB image or colormap to grayscale.
  rgb2ind        - Convert RGB image to indexed image.

Toolbox preferences.
  iptgetpref     - Get value of Image Processing Toolbox preference.
  iptsetpref     - Set value of Image Processing Toolbox preference.

Demos.
  dctdemo        - 2-D DCT image compression demo.
  edgedemo       - Edge detection demo.
  firdemo        - 2-D FIR filtering and filter design demo.
  imadjdemo      - Intensity adjustment and histogram equalization demo.
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  landsatdemo    - Landsat color composite demo.
  nrfiltdemo     - Noise reduction filtering demo.
  qtdemo         - Quadtree decomposition demo.
  roidemo        - Region-of-interest processing demo.

Slide shows.
  ipss001        - Region labeling of steel grains.
  ipss002        - Feature-based logic.
  ipss003        - Correction of nonuniform illumination.

Extended-examples.
  ipexindex        - Index of extended examples.
  ipexsegmicro     - Segmentation to detect microstructures.
  ipexsegcell      - Segmentation to detect cells.
  ipexsegwatershed - Watershed segmentation.
  ipexgranulometry - Granulometry of stars.
  ipexdeconvwnr    - Wiener deblurring.
  ipexdeconvreg    - Regularized deblurring.
  ipexdeconvlucy   - Lucy-Richardson deblurring.
  ipexdeconvblind  - Blind deblurring.
  ipextform        - Image transform gallery.
  ipexshear        - Image padding and shearing.
  ipexmri          - 3-D MRI slices.
  ipexconformal    - Conformal mapping.
  ipexnormxcorr2   - Normalized cross-correlation.
  ipexrotate       - Rotation and scale recovery.
  ipexregaerial    - Aerial photo registration.
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