im2uint8

Convert image to 8-bit unsigned integers

Syntax

```
I2 = im2uint8(I)
RGB2 = im2uint8(RGB)
I = im2uint8(BW)
X2 = im2uint8(X,'indexed')
gpuarrayB = im2uint8(gpuarrayA, __ )
```

example

example

Description

`I2 = im2uint8(I)` converts the grayscale image `I` to `uint8`. If the input image is of class `uint8`, the output image is identical to the input image. If the input image is not `uint8`, `im2uint8` returns the equivalent image of class `uint8`, rescaling or offsetting the data as necessary. example

`RGB2 = im2uint8(RGB)` converts the truecolor image `RGB` to `uint8`, rescaling the data if necessary.

`I = im2uint8(BW)` converts the binary image `BW` to a `uint8` grayscale image, changing `1`-valued elements to `255`.

`X2 = im2uint8(X,'indexed')` converts the indexed image `X` to `uint8`, offsetting the data if necessary. Note that it is not always possible to convert an indexed image to `uint8`. If `X` is of class `double`, the maximum value of `X` must be 256 or less. If `X` is of class `uint16`, the maximum value of `X` must be 255 or less.

`gpuarrayB = im2uint8(gpuarrayA, __ )` performs the conversion on a GPU. The input image, `gpuarrayA`, can be a grayscale, truecolor, binary, or indexed gpuArray image. The output image is a gpuArray. This syntax requires the Parallel Computing Toolbox™. example

Code Generation support: Yes.

MATLAB Function Block support: Yes.

Examples

collapse all

Convert uint16 Array to uint8 Array

Create an array of class `uint16`.

Open This Example

```
I = reshape(uint16(linspace(0,65535,25)),[5 5])
```

```
I =

      0  13653  27306  40959  54613
   2731  16384  30037  43690  57343
   5461  19114  32768  46421  60074
   8192  21845  35498  49151  62804
  10923  24576  38229  51882  65535
```

Convert the array to class `uint8` .

```
I2 = im2uint8(I)
```

```
I2 =

    0   53  106  159  213
   11   64  117  170  223
   21   74  128  181  234
   32   85  138  191  244
   43   96  149  202  255
```

Convert uint16 Array to uint8 on a GPU

Create array of class `uint16`.

```
I1 = gpuArray(reshape(uint16(linspace(0,65535,25)),[5 5]))
```

Convert array to `uint8`.

```
I2 = im2uint8(I1);
```

Input Arguments

collapse all

`I` — Input grayscale image
real, nonsparse, numeric array

Input grayscale image, specified as a real, nonsparse, numeric array.

Example: `I = imread('cameraman.tif');`

Data Types: `single` | `double` | `int16` | `uint8`

`RGB` — Input trueolor image
real, nonsparse, numeric array

Truecolor image, specified as a real, nonsparse, numeric array.

Example: `RGB = imread('peppers.png');`

Data Types: `single` | `double` | `int16` | `uint8`

`BW` — Binary image
real, nonsparse, logical array

Binary image, specified as a real, nonsparse, logical array.

Example: `BW = imread('text.png');`

Data Types: `logical`

`X` — Indexed image
real, nonsparse, numeric array

Indexed image, specified as a real, nonsparse, numeric array.

Example: `[X,map] = imread('trees.tif');`

Data Types: `double` | `uint8` | `uint16`

`gpuarrayA` — Input image
gpuArray

Input image, specified as a gpuArray.

Example: `I = gpuArray(imread('cameraman.tif'));`

Output Arguments

collapse all

`I2` — Grayscale image
`uint8` array

Grayscale image, returned as a `uint8` array.

`RGB2` — Truecolor image
numeric array

Truecolor image, returned as a `uint8` array.

`X2` — Output indexed image
numeric array

Output indexed image, returned as a `uint8` numeric array.

`gpuarrayB` — Output image
gpuArray

Output image, returned as a gpuArray.

More About

collapse all

Code Generation

This function supports the generation of C code using MATLAB® Coder™. Note that if you choose the generic `MATLAB Host Computer` target platform, the function generates code that uses a precompiled, platform-specific shared library. Use of a shared library preserves performance optimizations but limits the target platforms for which code can be generated. For more information, see Understanding Code Generation with Image Processing Toolbox.

MATLAB Function Block

You can use this function in the MATLAB Function Block in Simulink.

See Also

`gpuArray` | `im2double` | `im2int16` | `im2single` | `im2uint16` | `uint8`

Introduced before R2006a