

MATLAB in General:

The following are among the most used functions in MATLAB,

- Help → → → → Most Important
- Zeros(), ones()
- Plot, subplot()
- cos(), sin(), log(), sqrt(), min(), max()
- For, While
- If
- Abs(), angle()
- Converting between types: int8(), double()
- Whos
- Clear all, close all, clc

The Following Notes to be considered carefully,

- Be aware of the dimensions of the variables you are working with.
- Be aware of the type of the variables you are working with.
- Functions in MATLAB have several uses. Check the help menu to know which use you want and how to utilize it.
- Add the directory of your work to MATLAB paths through SET PATH.

MATLAB Image Processing Toolbox:

- Images I/O & Display

Function	Operation
Imread()	Read an image from a file and assign to a variable. (Input)
Imwrite()	Writes a variable to an image and store it to a file on the hard drive. (Output)
Imshow()	Displays and image stored in a variable in the workspace.
Imagesc()	Scales and displays an image.
Imhis()	Displays the histogram of an image



- Image Manipulation

Function	Operation
Histeq()	Enhance contrast through histogram equalization.
Imadjust()	Another way to enhance the contrast.
Im2bw()	Change image to binary.
Rgb2gray()	Converts a colored image to a grey one.
Imresize()	Resize the image
Imnoise()	Add noise to the image
medfilt2	Applying a median filter to the image.
Fspecial()	Create Predefined Filters
Imfilter()	Apply the filter created by fspecial to an image
Fft2()	Compute 2D Fourier transform of an image
Ifft()	Compute the inverse 2D Fourier Transform.
Fftshift()	Shifts the center Frequency.
Freqz2()	2D frequency response of FIR filter.

MATLAB Resources:

- **Mathworks:** Image Processing Toolbox User's Guide. (PDF online).
- **Mathworks:** Getting Started with MATLAB. (PDF Online).
- **Mathworks:** Learning MATLAB. (PDF Online).
- **MATLAB Central:** The official hub for everything MATLAB. (Forum, File Exchange, Blogs, Tutorials...etc)

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