

The background of the slide features a complex network diagram. It consists of numerous small, dark grey circular nodes connected by thin, light grey lines. These lines form a web-like structure that fills the entire frame. A large, solid dark teal rectangle is positioned on the right side of the image, partially overlapping the network diagram. The text is centered within this teal rectangle.

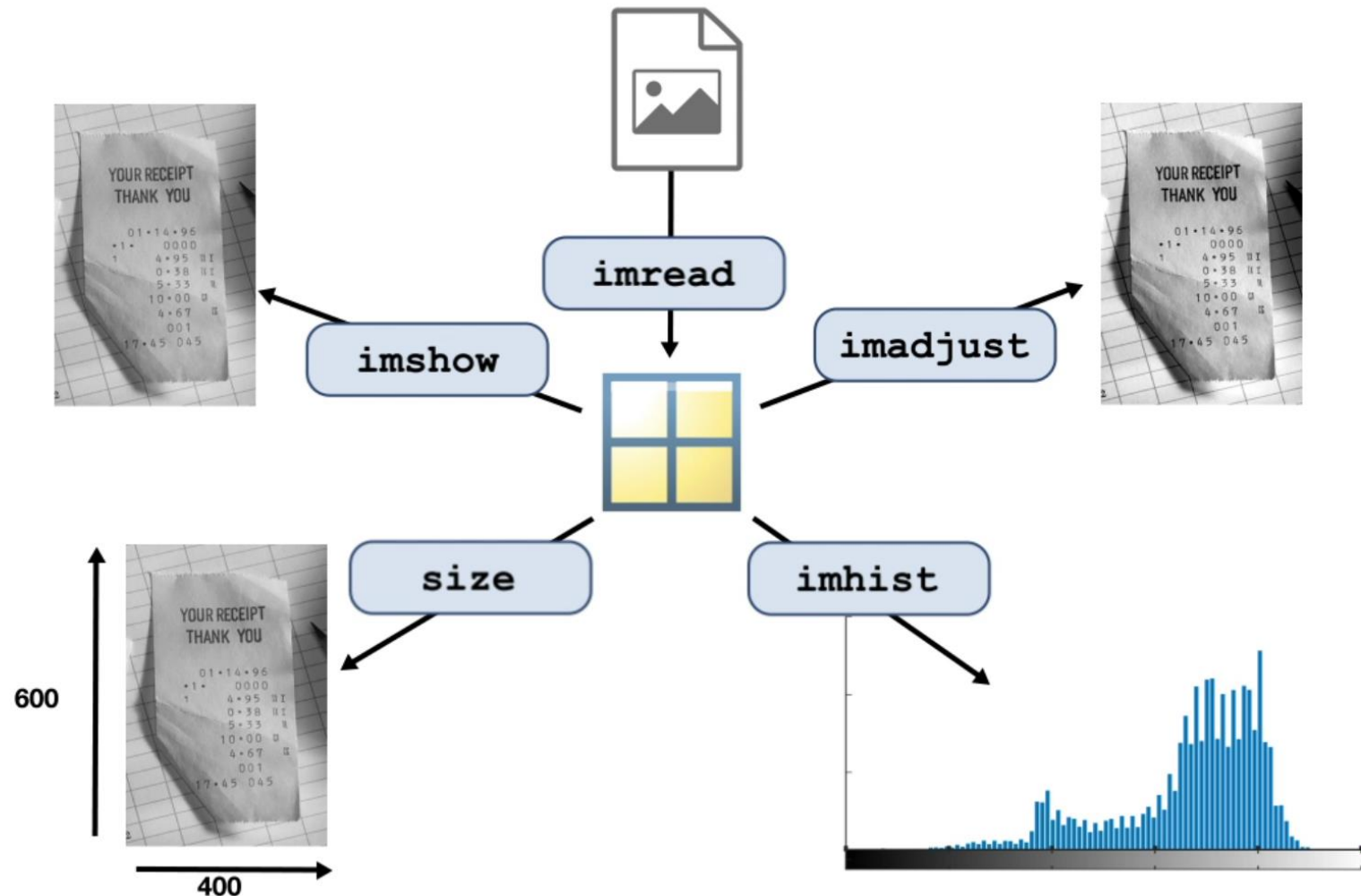
Condition Monitoring of Structures, Machines and Processes

Tutorial

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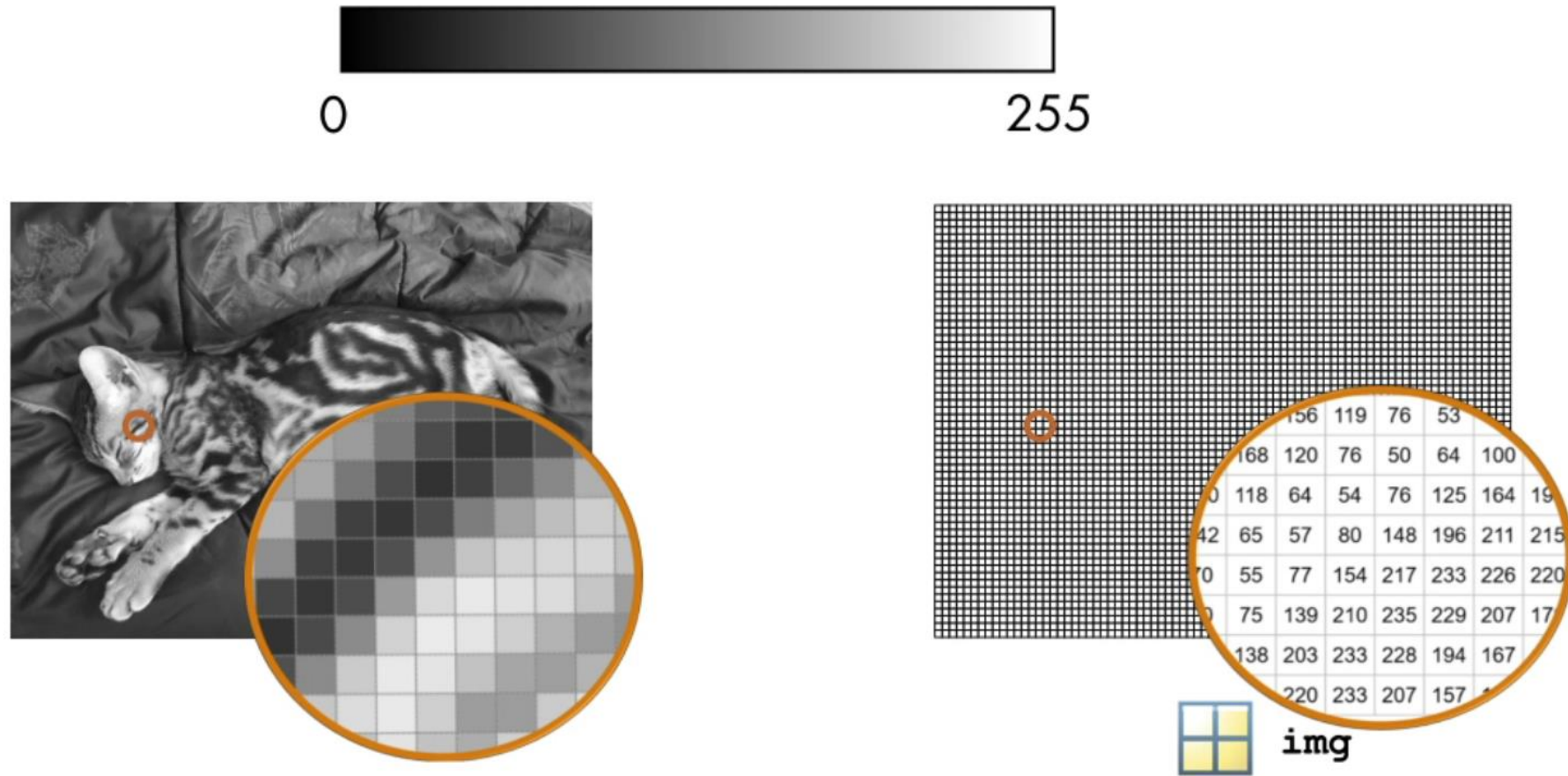
MATLAB:
DATA
PROCESSING:
IMAGES

Image Processing: Important Commands



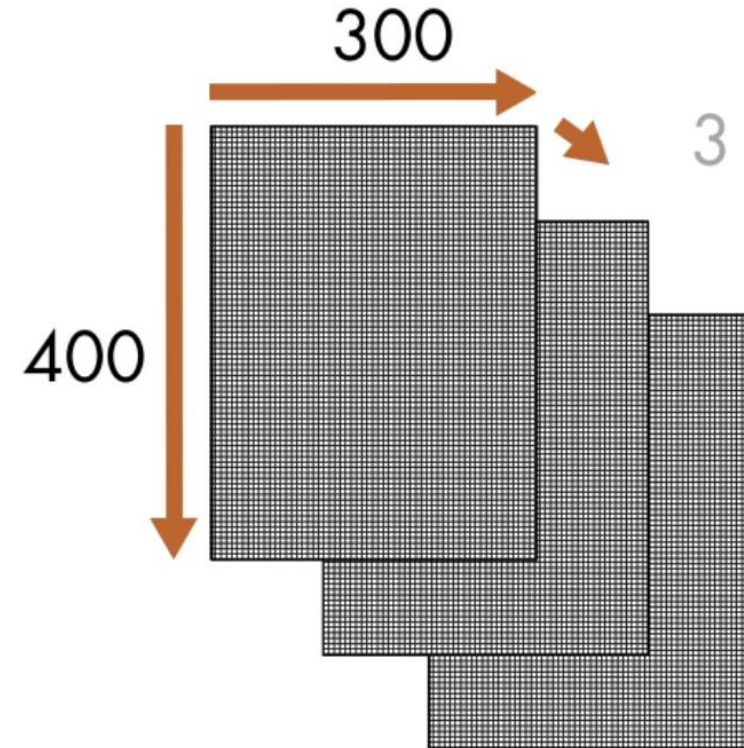
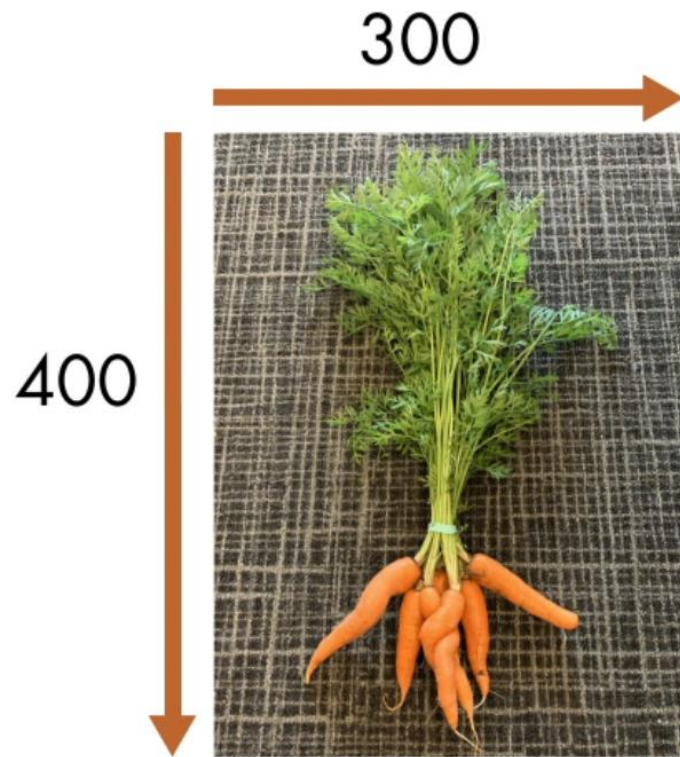
Source: MatLab, Onramp

Images in MatLab: Black and White Images



Source: MatLab, Onramp

Images in MatLab: RGB Images



Source: MatLab, Onramp

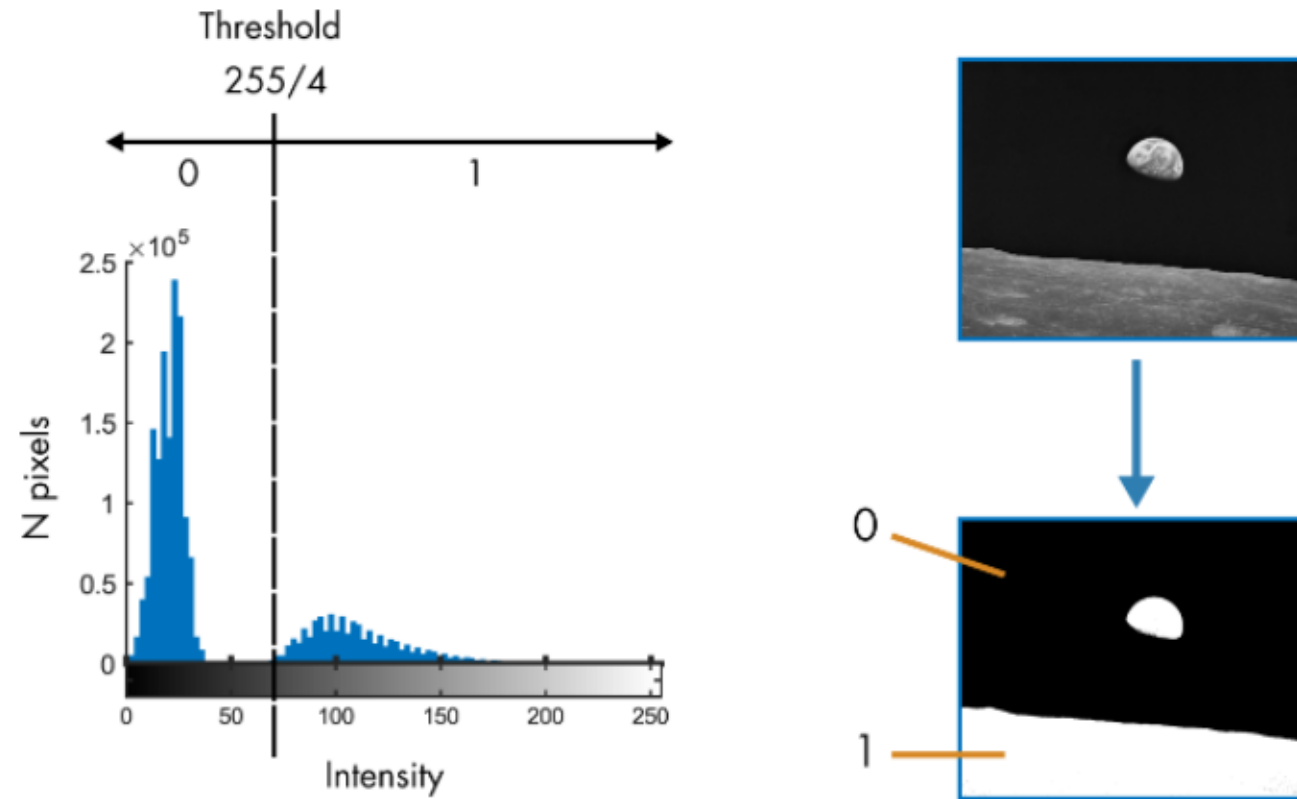
Exercise 13: Determine Area of Milling Head

- Import and display the images Head_New and Head_Wear using the commands `imread()` and `imshow()/imshowpair()`.
- Convert the images to gray-scale using the `im2gray()` command.

Intensity Thresholding

You can create a binary black and white image from a grayscale image by *thresholding* its intensity values. Values below the cutoff are assigned the value 0, while those above are assigned the value 1.

In the example below, a grayscale image was segmented using a threshold of $1/4$ the maximum possible intensity of 255.



Exercise 13

- Define a threshold for the picture of the new milling head to distinguish between pixels belonging to the surface area of the milling head and background. The whole picture corresponds to an area of approx. 35 mm².
- Determine a appropriate threshold for the picture of the used milling head to determine the area affected by wear.