Features Extraction Phase

Introduction

Markers extraction in image processing involves analyzing contour-based and texture-based features to gain insights into object shapes and patterns. Contours represent the boundaries of objects, and various markers like perimeter, area, centroid, aspect ratio, and solidity describe their shape, size, and compactness. Radial distance and convexity help detect shape symmetry and deviations from convex forms, while compactness evaluates the roundness of an object.

In texture analysis, first-order markers, such as mean, variance, and skewness, focus on pixel intensity statistics, whereas second-order markers like GLCM (Gray-Level Co-occurrence Matrix) and GLRLM (Gray-Level Run-Length Matrix) account for spatial relationships between pixels, revealing patterns and repetitions in textures.

These markers are vital for applications such as object recognition, shape matching, and segmentation, providing both geometric and textural information essential for comprehensive image analysis.
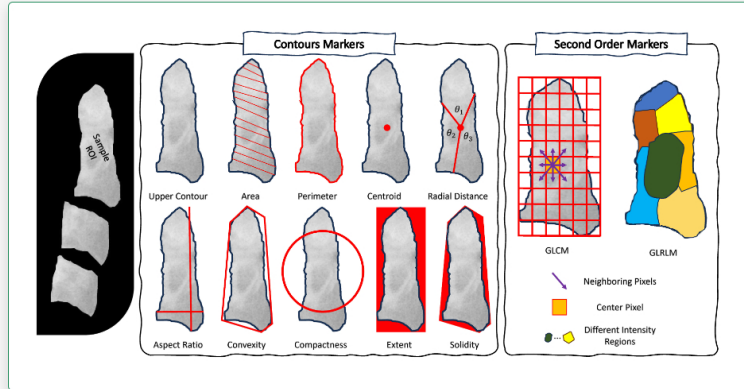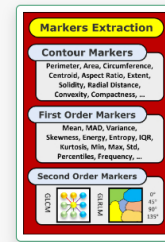
Pickle File:

Select Pickle File

Filename:

Enter a filename for the extracted features

Select Distances (Checkboxes):

- ☑ 10% Distance
- ☑ 20% Distance
- ☑ 25% Distance
- ☑ 30% Distance
- ☑ 40% Distance
- ☑ 50% Distance
- ☑ 60% Distance
- ☑ 70% Distance
- ☑ 75% Distance
- ☑ 80% Distance
- ☑ 90% Distance
- ☑ 100% Distance

Data Augmentation Techniques (Checkboxes):

- ☐ Random Rotation
  Rotate the input by an angle selected randomly from the uniform distribution.
  Rotation angle limit is 90 degrees.
  For more information, visit *Click*.
- ☐ Horizontal Flipping
  Randomly flips the image horizontally.
- ☐ Vertical Flipping
  Randomly flips the image vertically.
- ☐ Random Zoom
  Randomly zooms the image in and out.
- ☐ Random Shift
  Randomly shifts the image horizontally and vertically.
- ☐ Random Brightness Contrast
  Randomly changes the brightness and contrast of the image.
  Brightness limit (minimum and maximum) is (-0.2, 0.2).
  For more information, visit *Click*.
- ☐ Random Tone Curve
  Randomly change the relationship between bright and dark areas of the image by manipulating its tone curve.
  Scale is 0.1.
  For more information, visit *Click*.
- ☐ Random Gamma
  Applies random gamma correction to the input image.
  Gamma limit (lower and upper bounds for gamma adjustment) is (80, 120).
  For more information, visit *Click*.

Apply Features Extraction