Color Segmentation Module

Powerful Tools for Color Segmentation

The Aphelion™ Color Segmentation Toolkit lets the user manage color images by providing advanced tools to segment images and extract objects of interest based on their color intensity. It includes four semi-automatic segmentation techniques: manual color threshold, color distance, region growing, and morphological partitioning. The user first identifies some points or regions of interest, and then the selected algorithm automatically extracts the regions based on the defined color. Fine-tuning tools are available to increase the regions of interest to provide an optimal match of the objects to be detected.

Morphological Partitioning Technique

COLOR TOOLS INCLUDED:

Color Conversion – RGB, HSI, YIQ, YUV, XYZ, Lab, Luv, and LCH color spaces support.

Color Thresholding – Operator based processing of three bands in parallel for RGB and other color spaces. Color intensity is defined by clicking inside the object to be detected. The result is displayed in real-time in the image overlay and can later be adjusted by changing the value of the color distance.

Color Distance Segmentation – The distance between pixels is computed in the true color space. Various distances are available depending on the color space. The threshold is performed based on the radius of the ball in the color space.

Seed-based Region Growing – This image segmentation tool uses an optimized region growing algorithm that operates on seed points placed in regions of interest by the user.

Watershed Morphology – Semi-automatic segmentation using a state-of-the-art watershed morphological operator that processes objects relative to their edges.

Color Measurements – Tools for measurement and display of color-based image data, including statistics, intensity, histogram, and other measurements.

Main Benefits of the Aphelion™ Color Segmentation Toolkit:
- Detect color objects by just clicking on a few pixels inside the objects of interest
- Integrate Aphelion™ color operators into your stand-alone application
- Segment results more accurately by fine-tuning operator parameters
- Increase productivity through use of comprehensive color-related measurements
- Process color images using the intuitive GUI provided
- Automate masking processes using sophisticated techniques for automatic object contouring

Rev: 3.0