

Counting number of teeth from a gear wheel

EXERCISE:

Using morphological functions learnt in the course (dilation, erosion, opening and closing), try to obtain the number of teeth from the gear wheel from the example image.

Auxiliar opencv functions:

- `List<Contour> contours = BinaryImageOps.contour(filtered, ConnectRule.EIGHT, label);`
- `int numBlobs = BinaryImageOps.labelBlobs4(binary, blobs);`

Both can be used to obtain the white regions in the image (or the number), since we are working with binary images, the List will include blobs contour of white pixels.

- `ThresholdImageOps.threshold(image, binary, 23, true);`
- `BinaryImageOps.erode4(binary, output);`
- `BinaryImageOps.erode8(binary, output);`
- `BinaryImageOps.dilate4(binary, output);`
- `BinaryImageOps.dilate8(binary, output);`

[//http://boofcv.org/index.php?title=Example_Watershed_with_Seeds](http://boofcv.org/index.php?title=Example_Watershed_with_Seeds)

Obtaining markers for coffee_grains image automatically

EXERCISE:

Using morphological functions learnt in the course (dilation, erosion, opening and closing), try to obtain automatic markers for coffee_grains image.

Auxiliar opencv functions:

```
std::vector<std::vector<cv::Point> > contours;  
cv::findContours(input_8u_image, contours,  
                 CV_RETR_EXTERNAL,  
                 CV_CHAIN_APPROX_SIMPLE);
```