Computer Vision Assignment

Objective 1: Count the number of rice grains in the Image.
Objective 2: Find the number of broken grains in the image.

Sample Image:

You can assume the following in the image:

- The background will always be blue.
- There will be a mix of broken and non-broken rice grains.
- The grains will not overlap but can touch each other.

Data:
Please download the zip file from the below link
http://shorturl.at/zHJ07
The file will contain 2 folders train and test and a submission file.
The train folder contains 12 images with prefix:

- *broken_grain_*: contains only broken grains
- *full_grains_*: contains only full grains (non-broken grains)
- *mixed_grains_*: contains a mix of broken and non-broken grains.

The test folder will have 5 images on which submission needs to be made.

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Suggestions for Solution:

- Feel free to use any image processing techniques, libraries, external data.
- Try OpenCV based techniques.
- Try to solve the cases where grains touching each other.
- Try some neural network based approaches to segmentation and classification

Submission FIle Format:

file_name	total_rice_grain	total_broken_rice_grain
image_1.jpg		
image_2.jpg		
image_3.jpg		
image_4.jpg		
image_5.jpg		

Should be submitted as a CSV file.
At least one of total_rice_grain and total_broken_rice_grain columns should be filled for the submission to be valid.

Submissions Instructions:

- Share the complete code along with the submission file.
- Provide a detailed write-up explaining the work, visualizations of the result, current limitations, and next steps on how to improve the algorithm.
- Share the above-mentioned things in one zip file.
- In case of any opensource code, data, or research paper is used, it should be credited to the author or the source.
- Any hint of plagiarism will lead to rejection.