Project-1

Relevant Information: In order to classify the rice varieties (Cammeo and Osmancik) used, preliminary processing was applied to the pictures obtained with a computer vision system and a total of 3810 rice grains were obtained. Furthermore, 7 morphological features have been inferred for each grain. A data set has been created for the properties obtained.

Attribute Information:

1. Area: Returns the number of pixels within the boundaries of the rice grain.
2. Perimeter: Calculates the circumference by calculating the distance between pixels around the boundaries of the rice grain.
3. Major Axis Length: The longest line that can be drawn on the rice grain, i.e. the main axis distance, gives.
4. Minor Axis Length: The shortest line that can be drawn on the rice grain, i.e. the small axis distance, gives.
5. Eccentricity: It measures how round the ellipse, which has the same moments as the rice grain, is.
6. Convex Area: Returns the pixel count of the smallest convex shell of the region formed by the rice grain.
7. Extent: Returns the ratio of the region formed by the rice grain to the bounding box pixels
8. Class: Commeo and Osmancik.

Design the ML model by considering the following points:
1. Extract top 10 features.
2. Clean the data.
3. Resample or balance.
4. Determine the most effective and fast algorithm to work on it.
5. Find the ideal hyper-parameters for the algorithm.

Dataset: Rice_Cammeo_Osmancik.xlsx