Rice Seed Classification

Lab 01

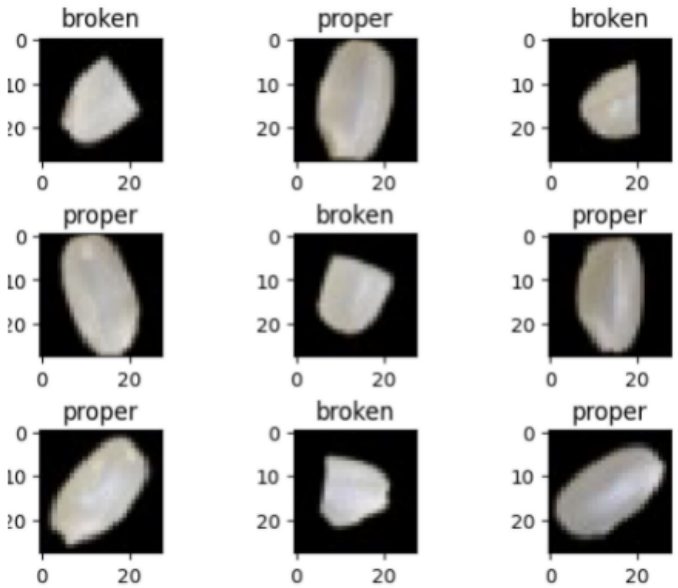
Niranga Mahesh Udumulla[1]

Florida Atlantic University

Biostatistics, Fall 2020

Introduction

In this report consist the classification of the rice seed into two categories using their images.This image set includes Proper Shaped Rice Seed and Broken Rice Seed images and use their area to find out the exact category.



Training

We made a simple classifier to make classification using pytorch.Model is based on cross entropy loss and stochastic gradient decent algorithm used to find out the points which have minimum loss.We have 397 seed images and we take 377 for training and rest of 20 images were used for testing the model.There are few libraries were installed for the analysis.

Important theorem

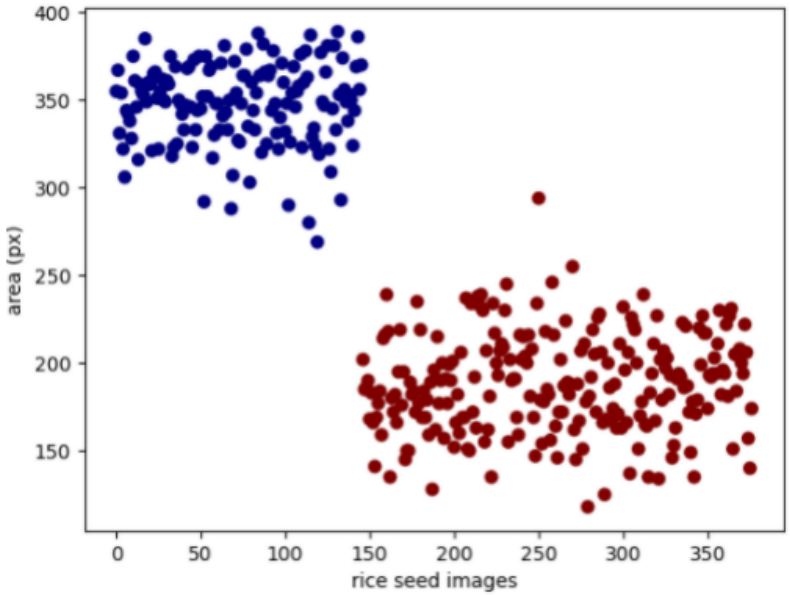
We converted our image set into e binary image which provided a white region for rice area and black color for non rice ares.Then we calculated the area of white region

Remark

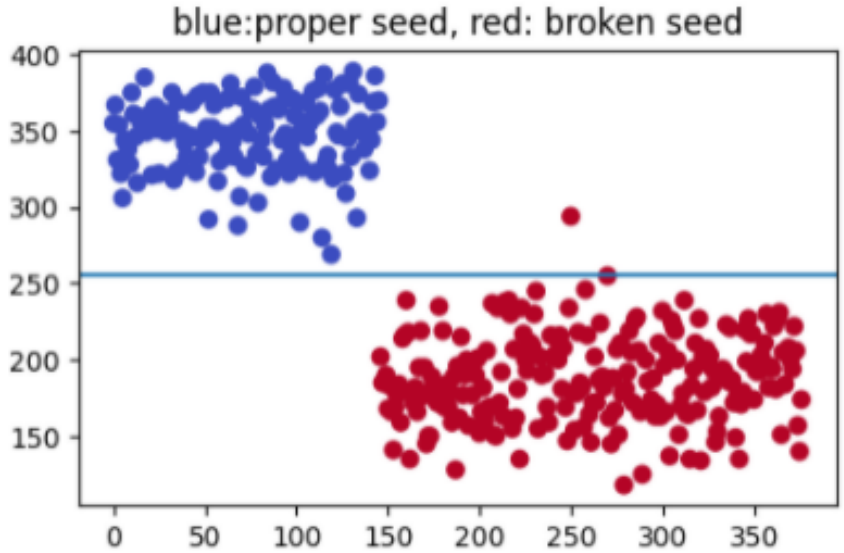
Using that area values,we made a threshold for classification rice area.That could helps to identify the non broken rice seeds in our set.

Threshold

White area region

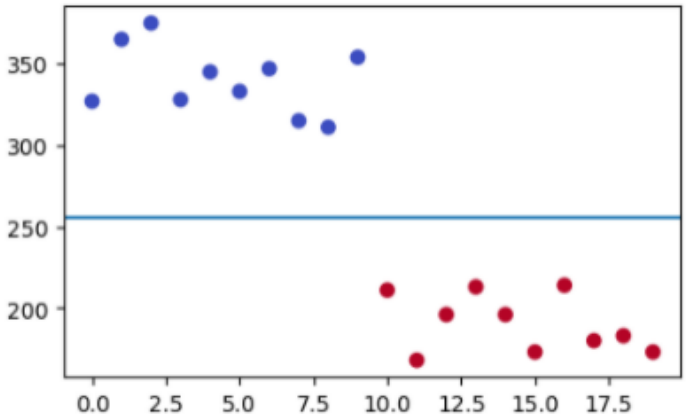


Area Threshold for classification

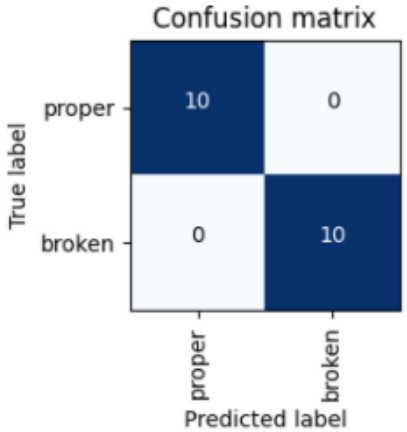


Evaluating The Model

Confusion matrix for testing data



Test classification



Here we can see,our threshold value is perfect for classifying the images.Then we can make a classifier to categories the images and it can be used to identify the seed type using their images.