

easyIMAGE:

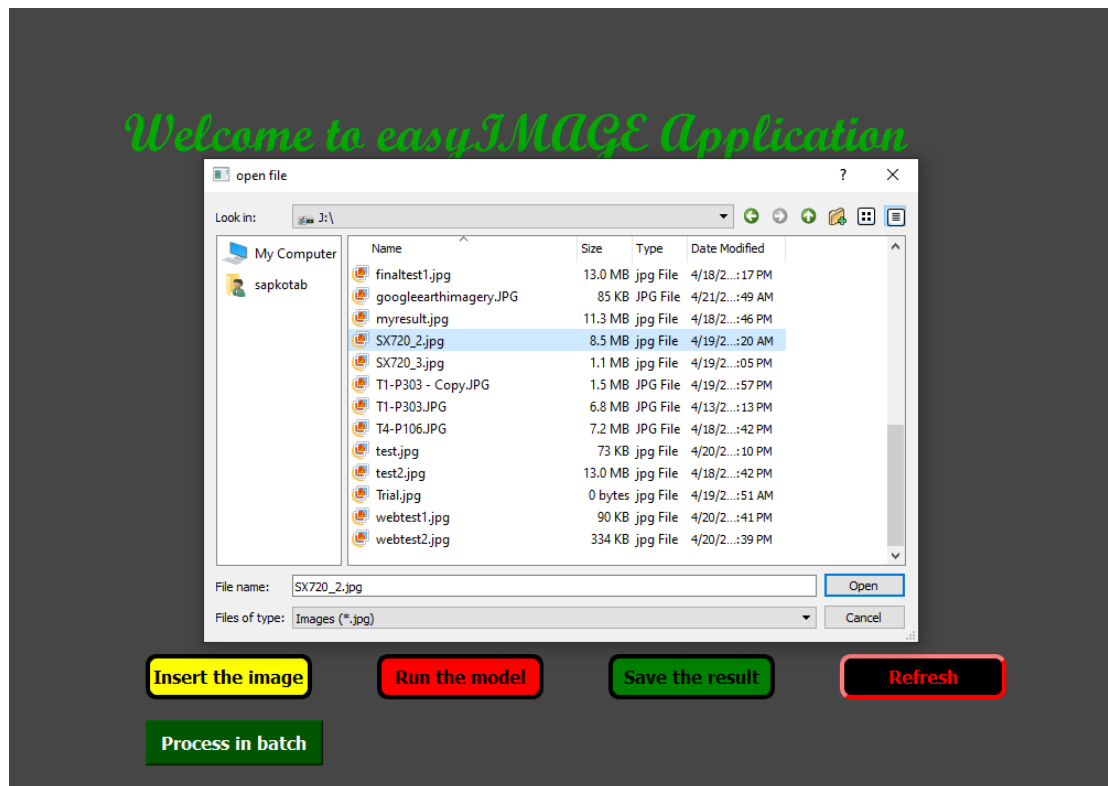
This app is developed to assist the plant science researchers for various image processing tasks. The app is currently able to perform binary segmentation on images and works best when used from classifying green pixels from non-green pixels. It also calculates the percentage of the green pixels in the image automatically. In addition, the app can process the images in batch in user-defined configurations.

1. Analysing a single image

Step 1: Double click the “easyImage.exe” and the app window will load. Please give a minute or so for the app window to show up, depending upon your system specs.



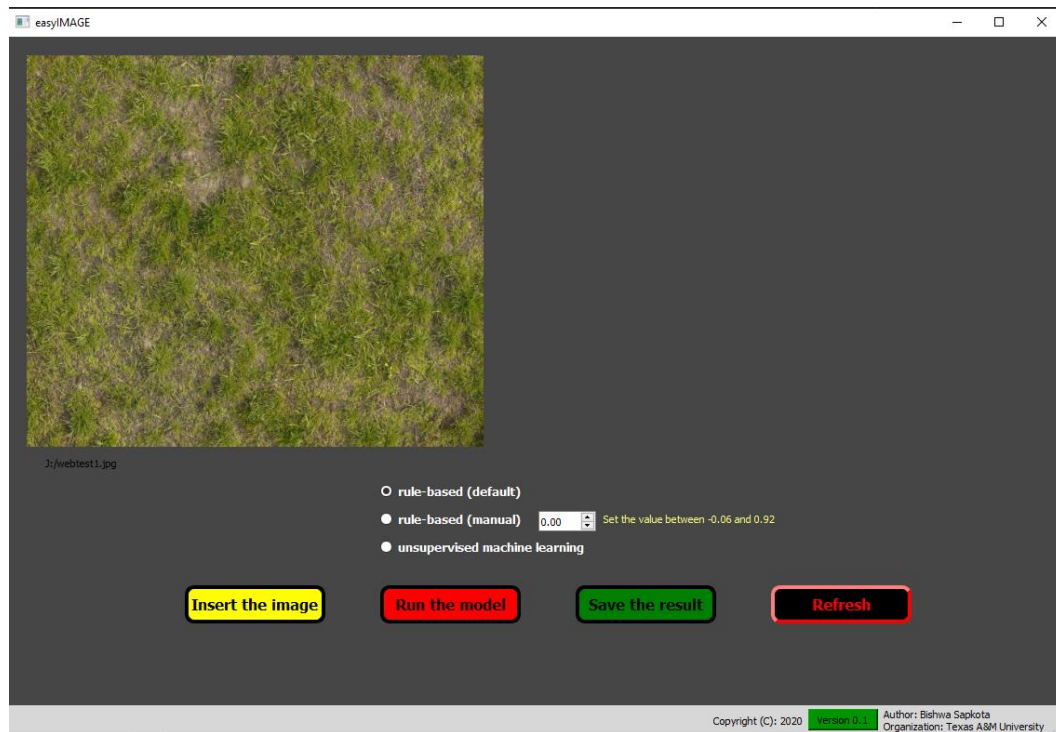
Step 2: Click on the “Insert the image” button. Navigate to the image file you want to analyze, choose it and click Open.



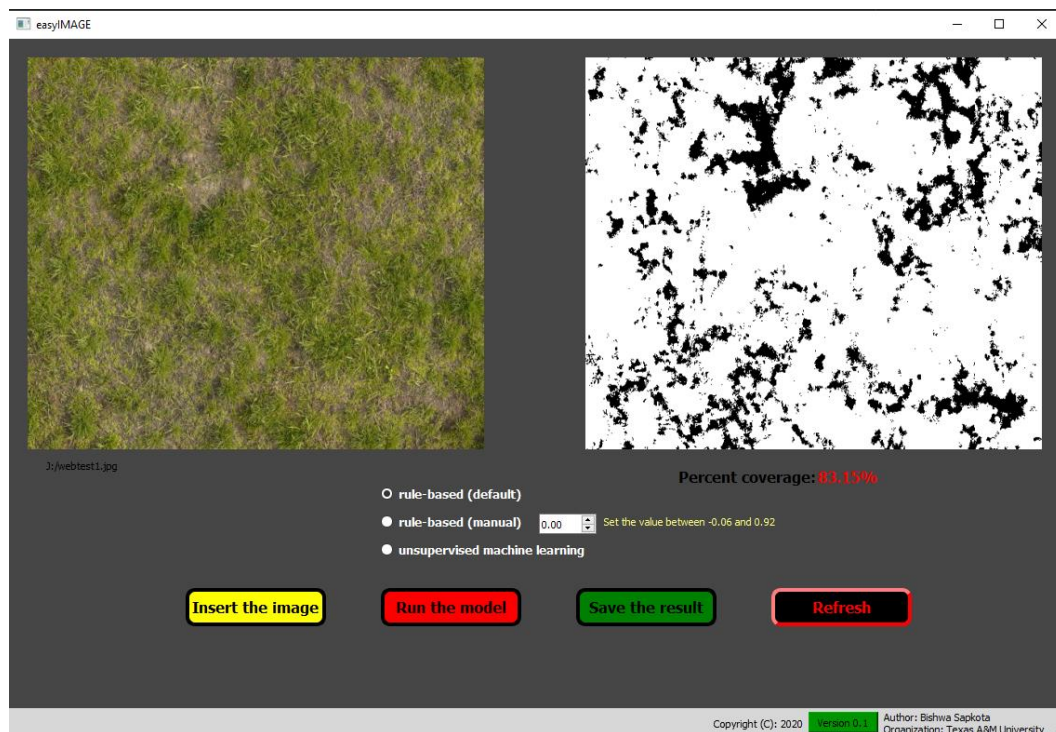
Step 3: The image selected will be displayed in the app window. Next step is to choose the model for the analysis. Currently, the app has three models the user can choose from.

- rule-based (default): This model uses the threshold value of 0.1 to segment out the green pixels. The threshold value is derived based on expertise knowledge. It usually provides fair result.
- rule-based (manual): This model allows user to choose a threshold value ranging between what would be displayed on the right hand side parenthesis. The user can test several values until the best result is achieved.
- unsupervised machine learning: This model learns the pattern in the imagery and automatically derives the threshold to segment the green pixels. The model uses the k-means clustering method to derive the threshold. For more information about k-means works, please click the link below.

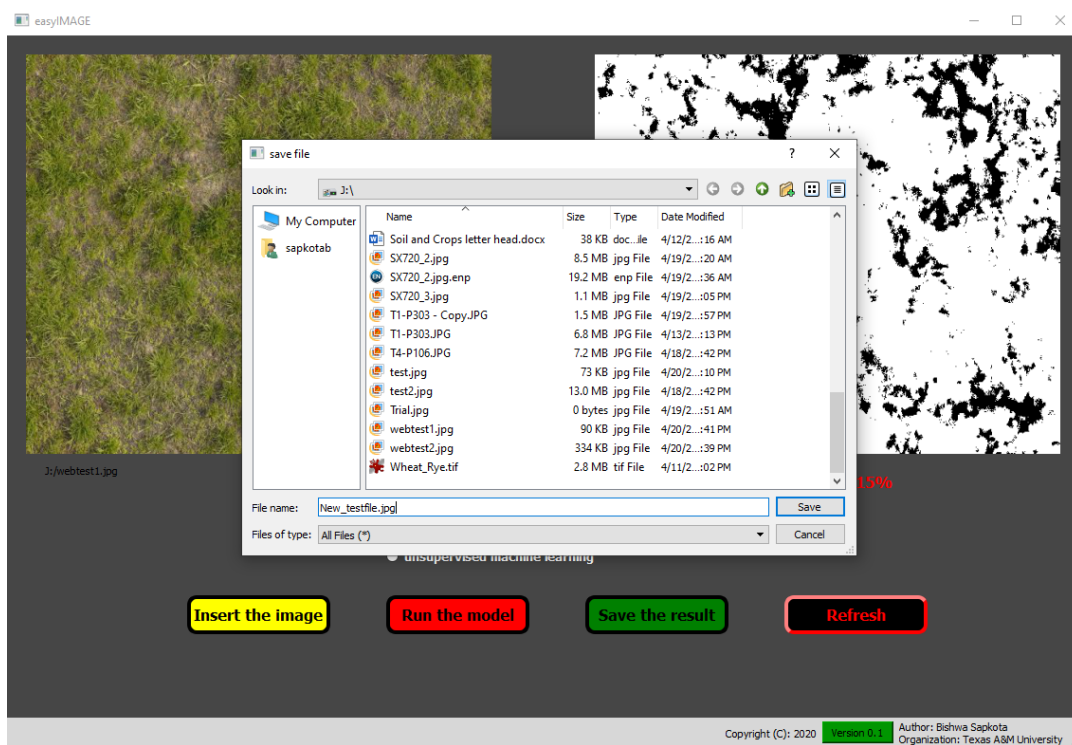
<https://towardsdatascience.com/k-means-clustering-with-scikit-learn-6b47a369a83c>



Step 4: After choosing the model, click on the “Run the model” button to run the analysis. Depending on your image size, the process could take few seconds to few minutes.



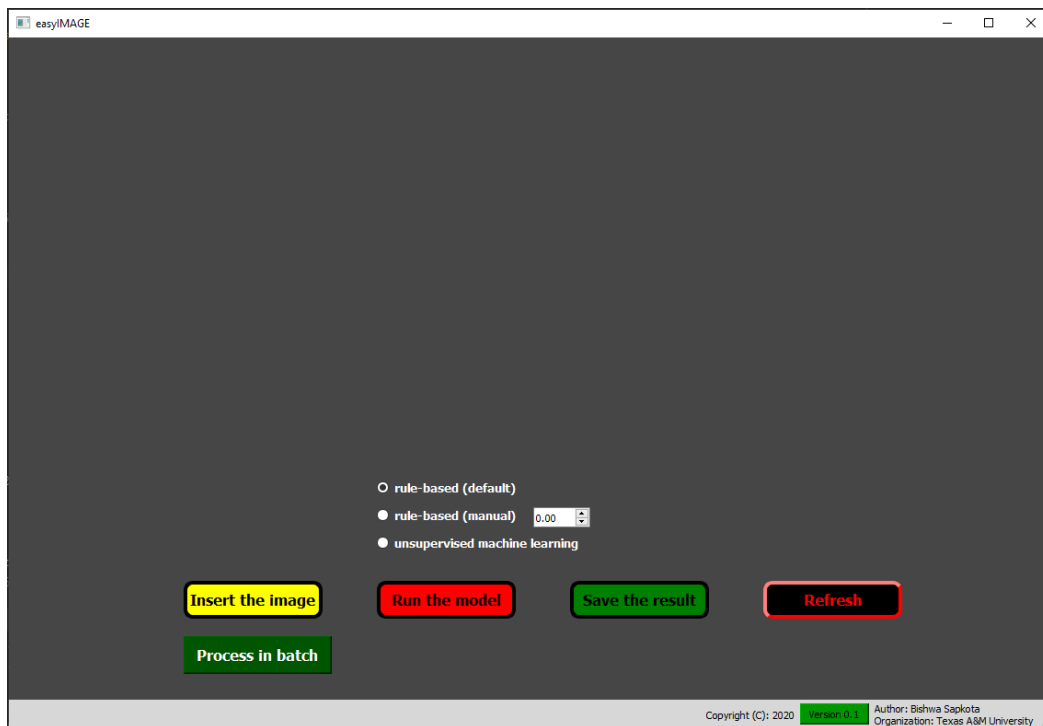
Step 5: The analysed image (result) will be displayed in the app window beside the original image. You can choose to save the file by clicking the button “Save the result”. Navigate to where you want to save the result and give it a name, and click Save.



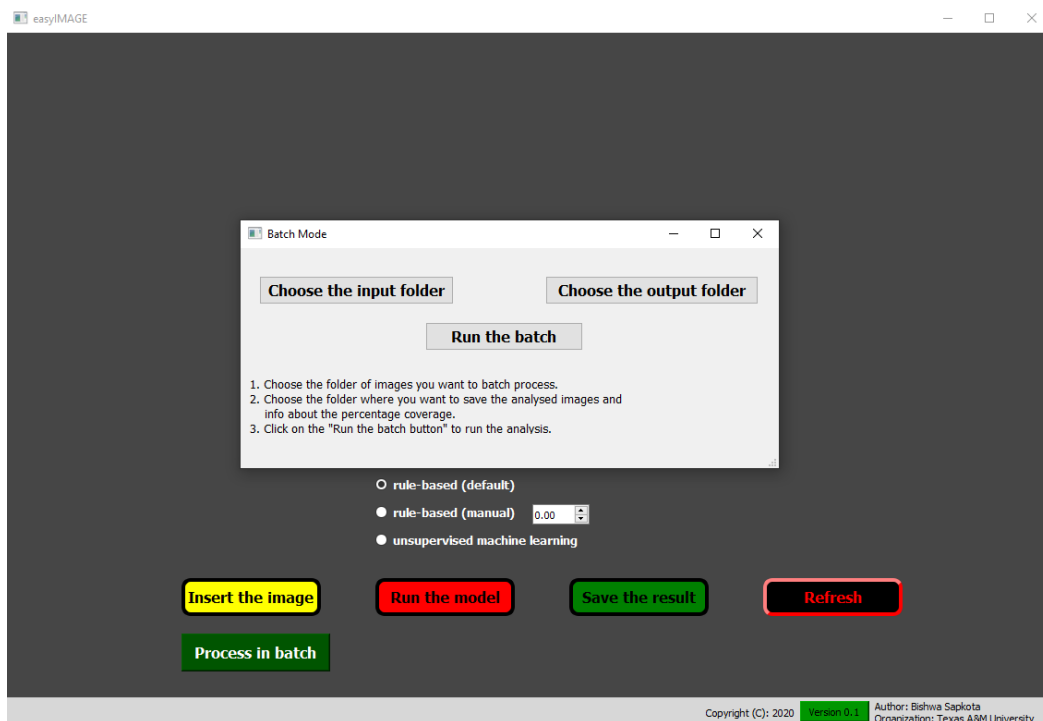
2. Analysing in batch

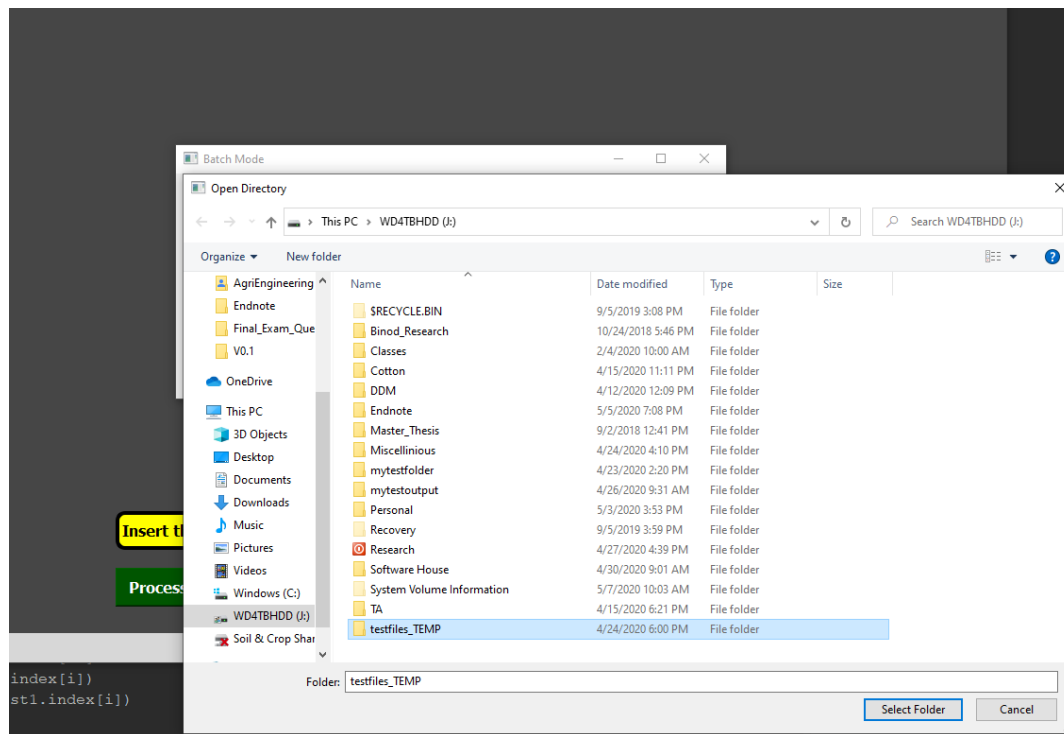
After you have figured out what model provides you the best result, you can apply the same model process images in a batch mode.

Step 1: Click on the “Refresh” button if you previously analysed an image and are still in the app window. The “Process in batch” button appears. Make sure the model you want to batch process the images with is chosen. Click on the “Process the batch” button. Following dialog box opens



Step 2: Click on the “Choose the input folder” to load the batch of images. The input folder should contain just the images.





Step 3: Click on the “Choose the output folder” to select the folder where you want to save the files.

Step 4. Click on the “Run the batch” to run the model.