Corrosion / Rust Detection in image

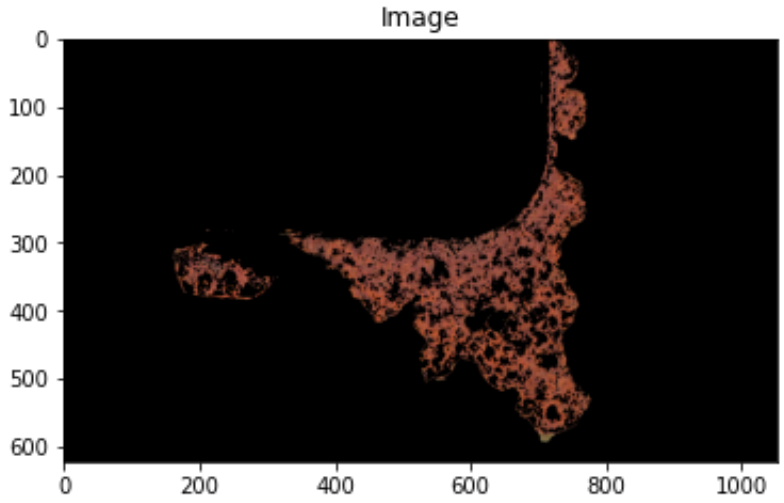
This algorithm is finding the rust pixel in an image then classify into category (Poor, Average, Good and Invaild)
Tools used open source:-

- Python
- OpenCV
- Models can be used SVG or Logistics Regression

Results of this model are as follows:

Original Image

Rust Image

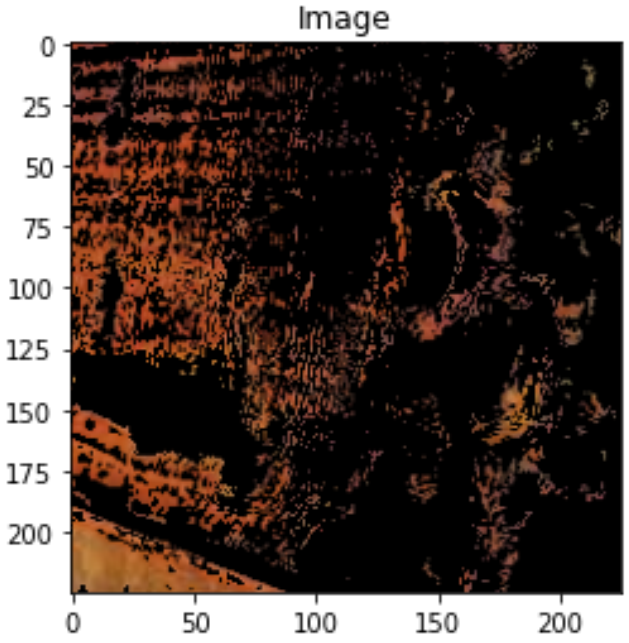


Result
Rust pixels: 157656
Total pixels: 1963032
Percentage of rust: 8.03%

Medium Risk -> Classification – Average

Original Image

Rust Image

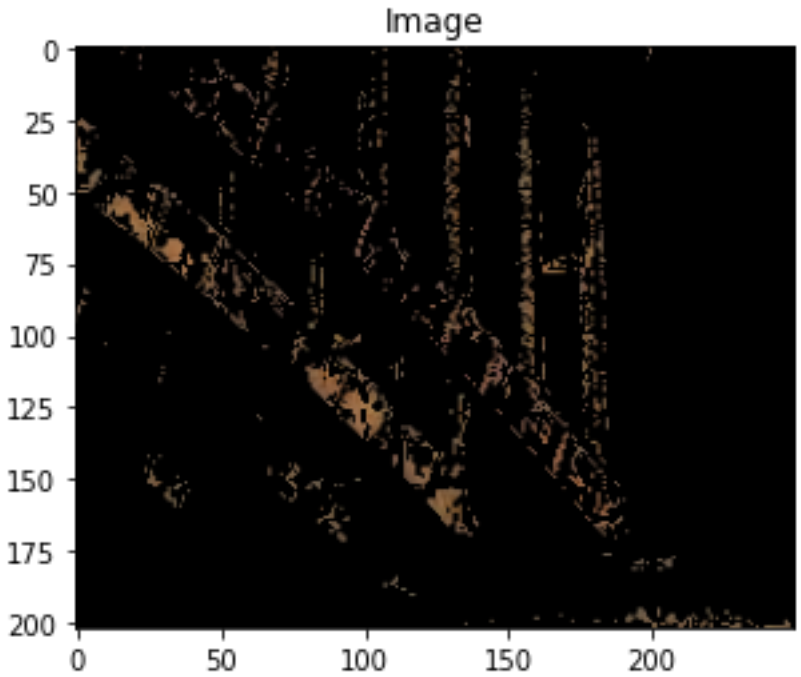


Result

Rust pixels: 33252
Total pixels: 151875
Percentage of rust: 21.89%
High Risk -> Classification - POOR

Original Image

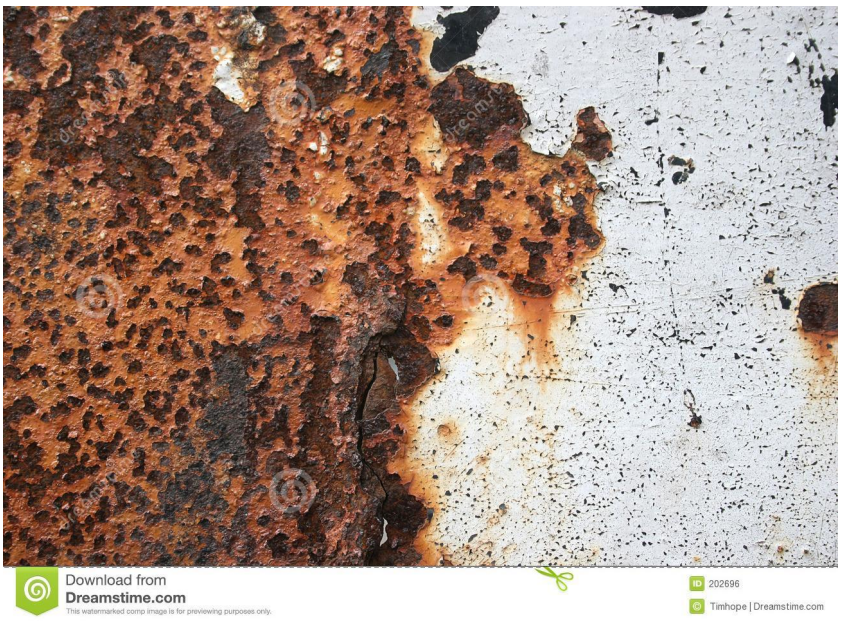
Rust Image



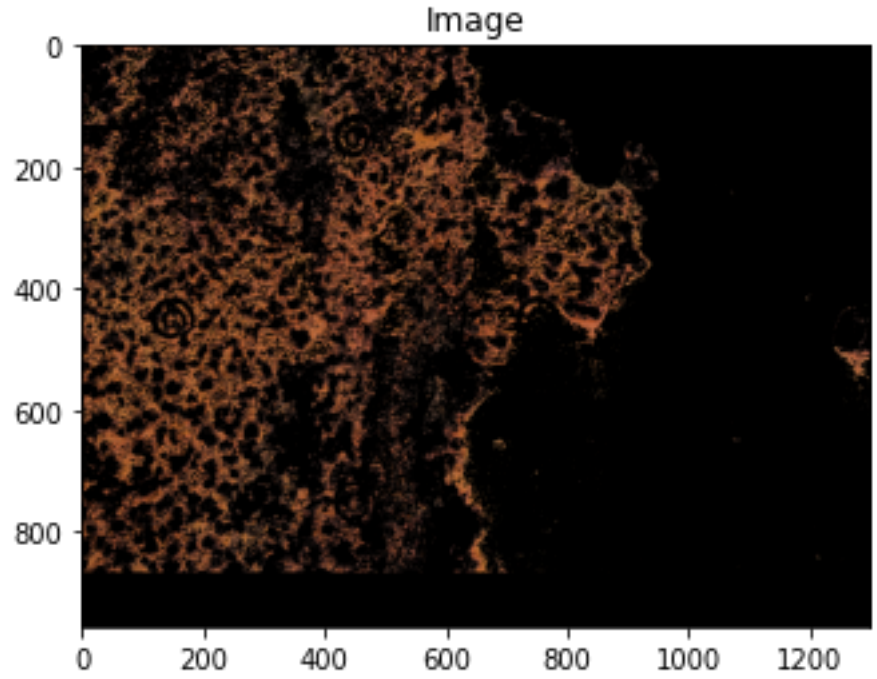
Result

Rust pixels: 8052
Total pixels: 151500
Percentage of rust: 5.31%
Medium Risk -> Classification – Average

Original Image



Rust Image

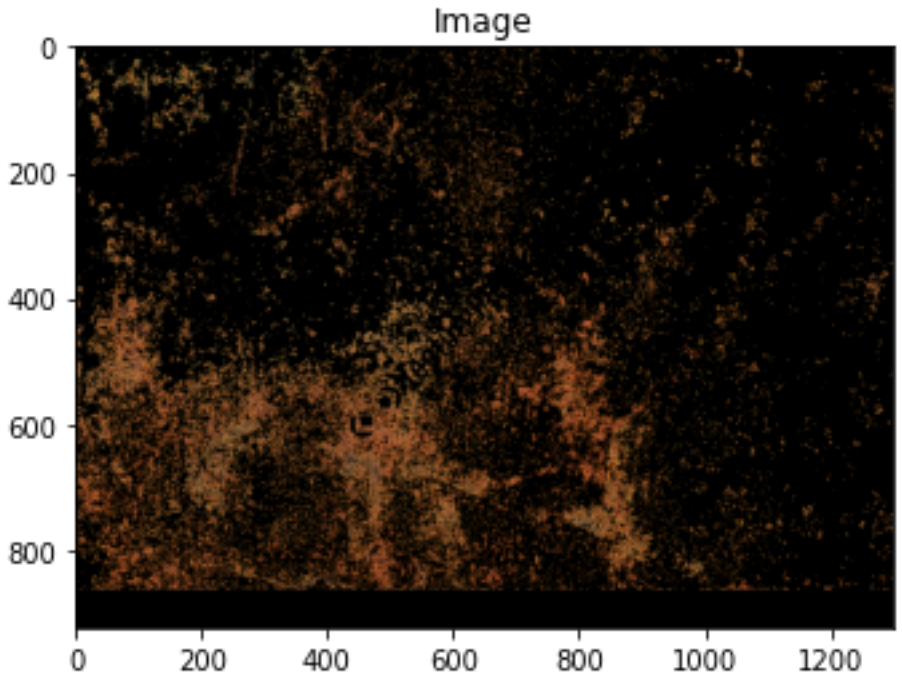


Result

Rust pixels: 623682
Total pixels: 3732300
Percentage of rust: 16.71%
High Risk -> Classification – POOR

Original Image

Rust Image

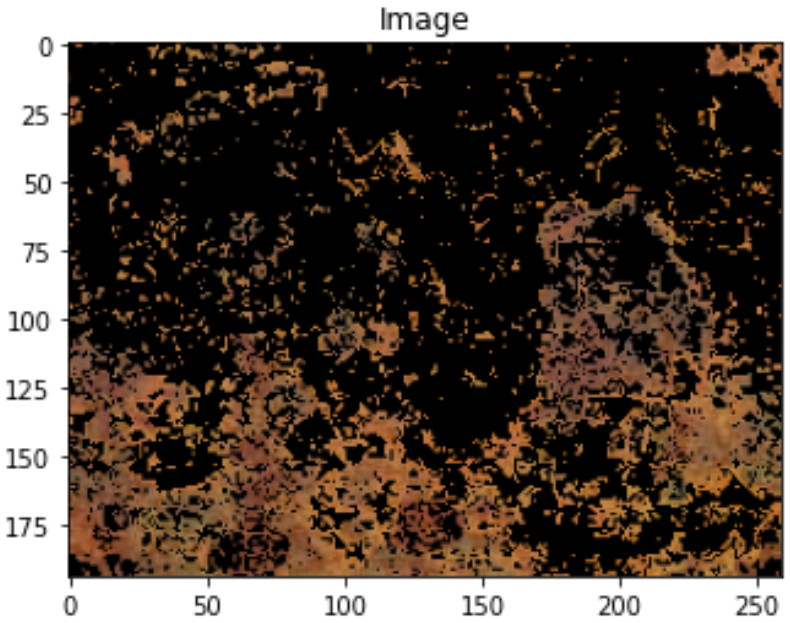


Result

Rust pixels: 471396
Total pixels: 3603600
Percentage of rust: 13.08%
High Risk -> Classification – POOR

Original Image

Rust Image

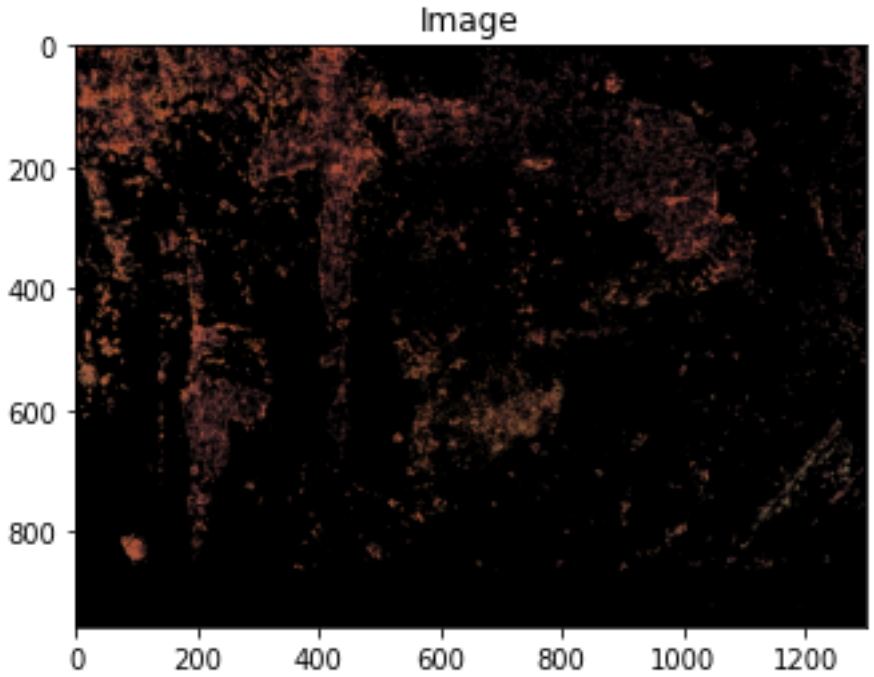


Result

Rust pixels: 44166
Total pixels: 150738
Percentage of rust: 29.3%
High Risk -> Classification – POOR

Original Image

Rust Image

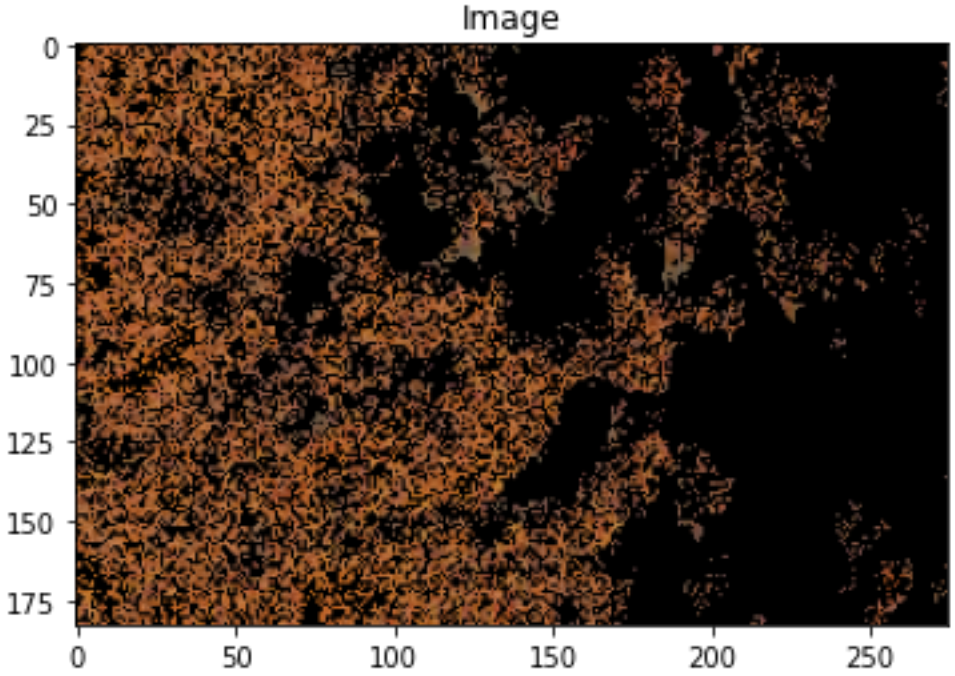


Result

Rust pixels: 312249
Total pixels: 3728400
Percentage of rust: 8.37%
Medium Risk -> Classification – Average

Original Image

Rust Image

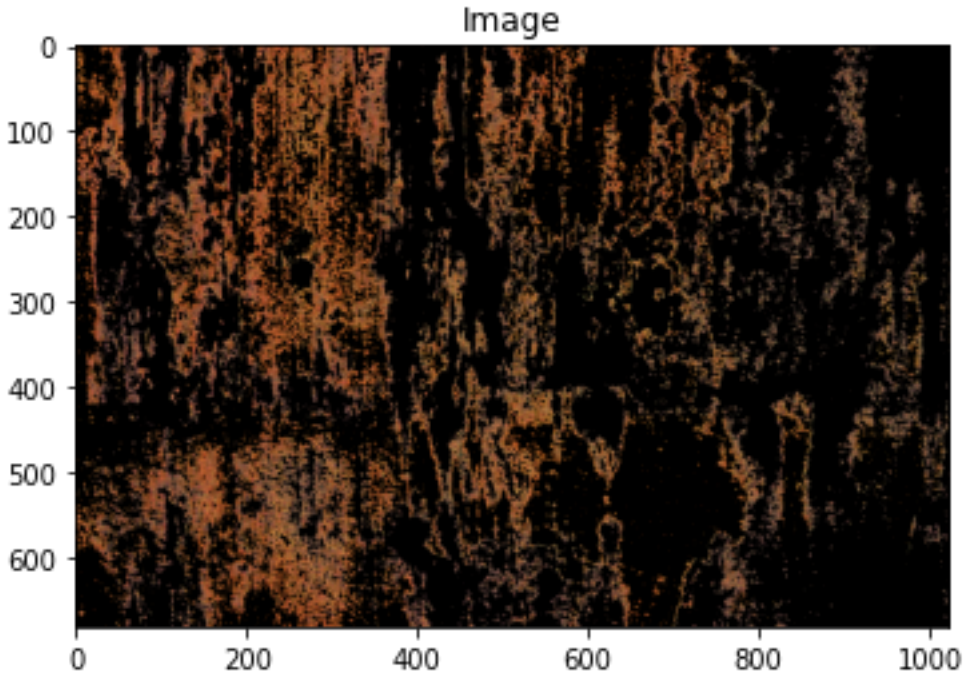


Result

Rust pixels: 46884
Total pixels: 150975
Percentage of rust: 31.05%
High Risk -> Classification - POOR

Original Image

Rust Image

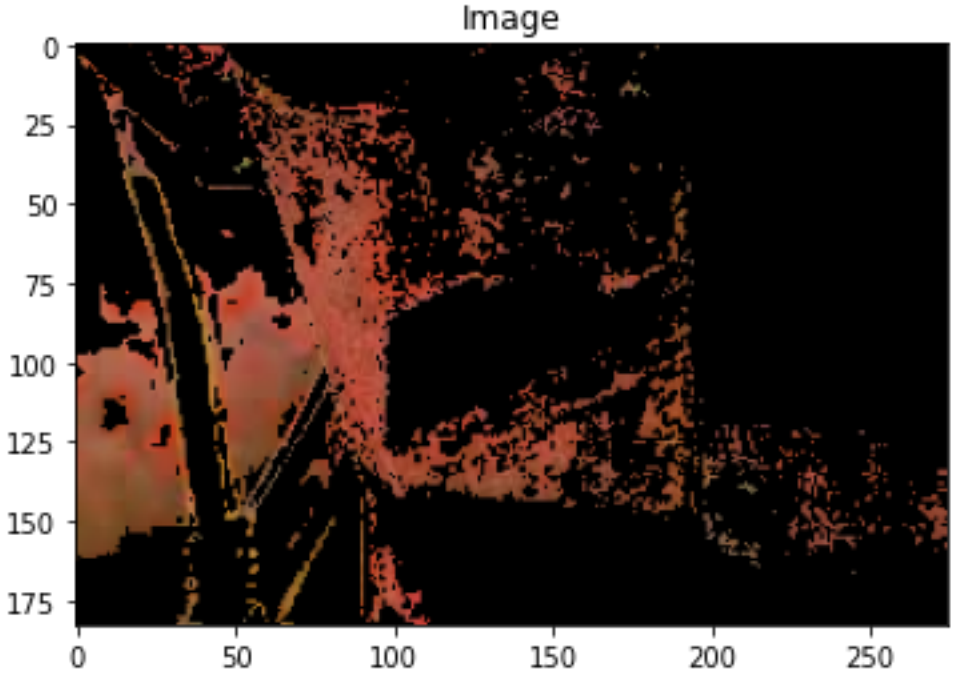


Result

Rust pixels: 528942
Total pixels: 2086920
Percentage of rust: 25.35%
High Risk -> Classification - POOR

Original Image

Rust Image

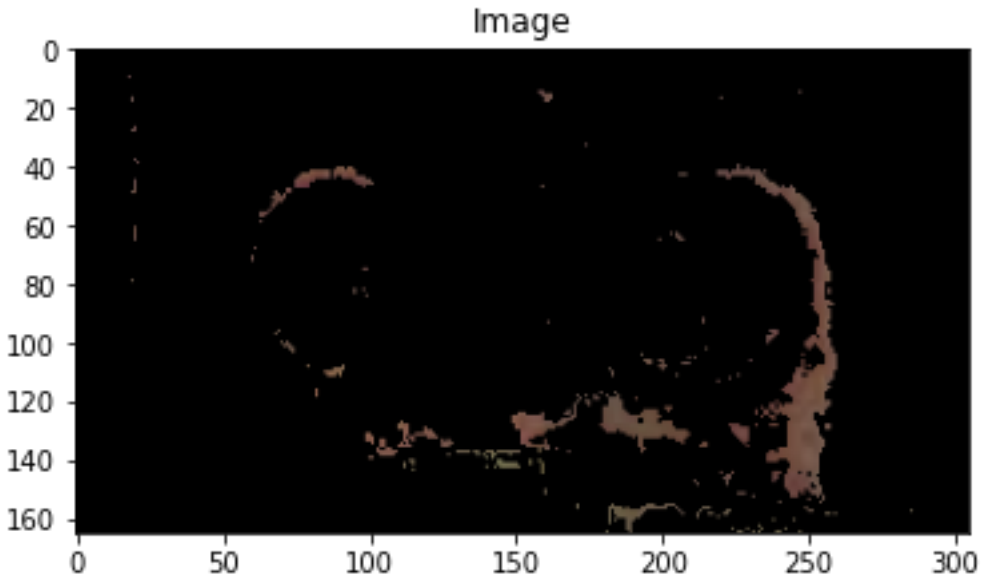


Result

Rust pixels: 30609
Total pixels: 150975
Percentage of rust: 20.27%
High Risk -> Classification – POOR

Original Image

Rust Image

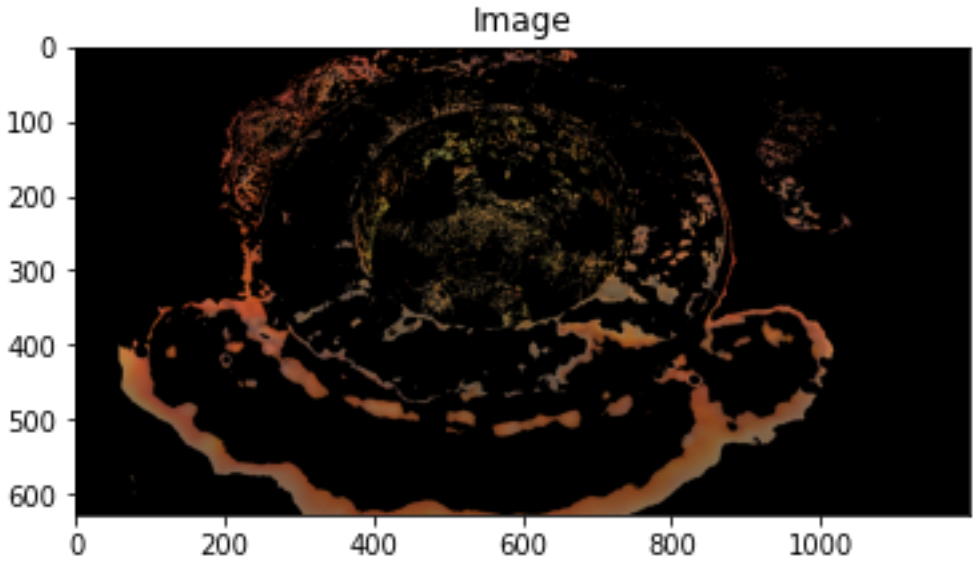


Result

Rust pixels: 5706
Total pixels: 150975
Percentage of rust: 3.78%
Low Risk -> Classification – Good

Original Image

Rust Image



Result

Rust pixels: 250206
Total pixels: 2260800
Percentage of rust: 11.07%

High Risk -> Classification – POOR

Original Image

Result

Rust pixels: 0

Total pixels: 6220800
Percentage of rust: 0.0%
Invalid Image

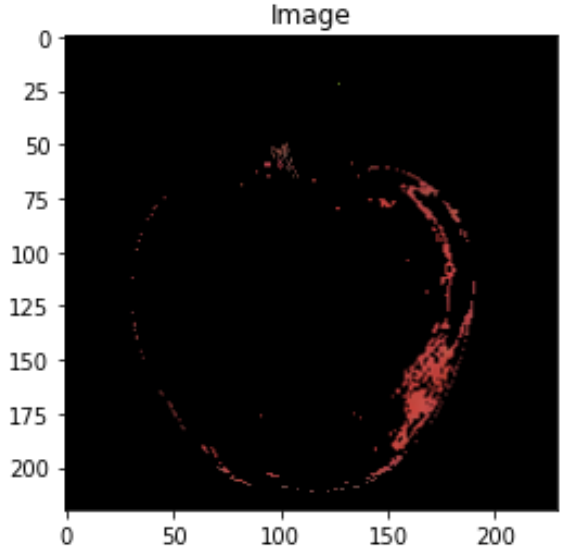
Original Image

Result

Rust pixels: 771
Total pixels: 151875
Percentage of rust: 0.51%
Invalid Image

Original Image

Rust Image

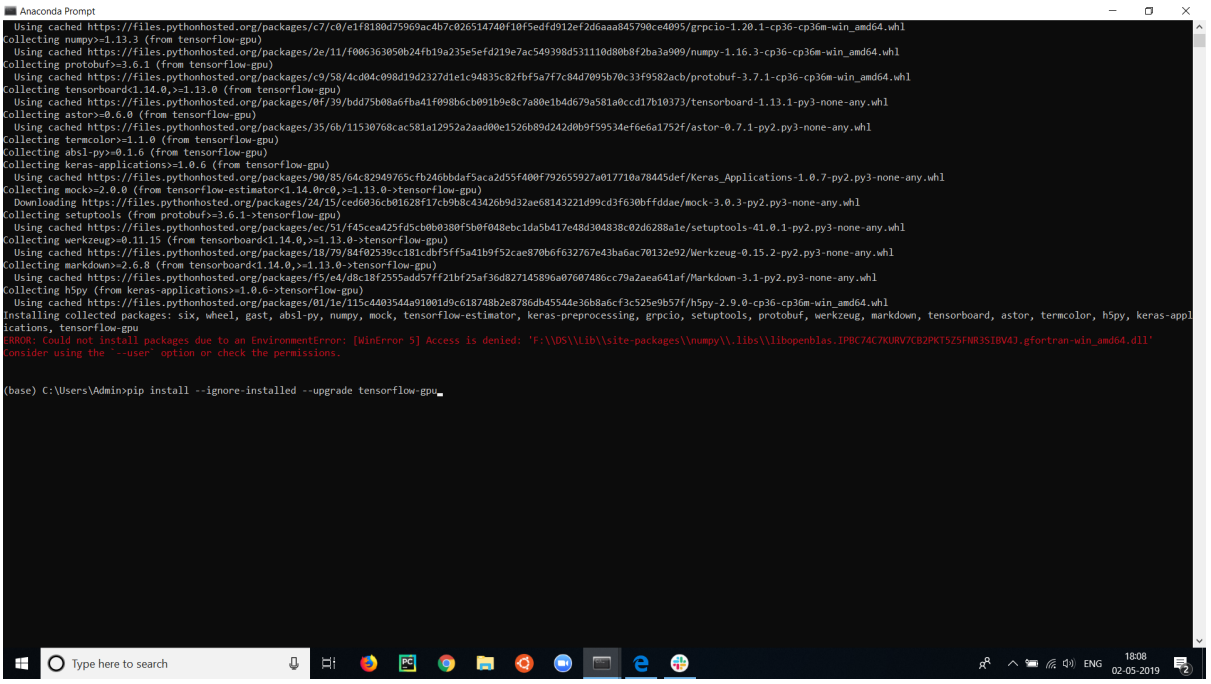


Result

Rust pixels: 3114
Total pixels: 151140

Percentage of rust: 2.06%
Low Risk -> Classification - Good

Original Image



Rust pixels: 11718
Total pixels: 6220800
Percentage of rust: 0.19%
Invalid Image