

Mini Project Progress

Automated Detection of Defects in Solar Panels
using Drones.

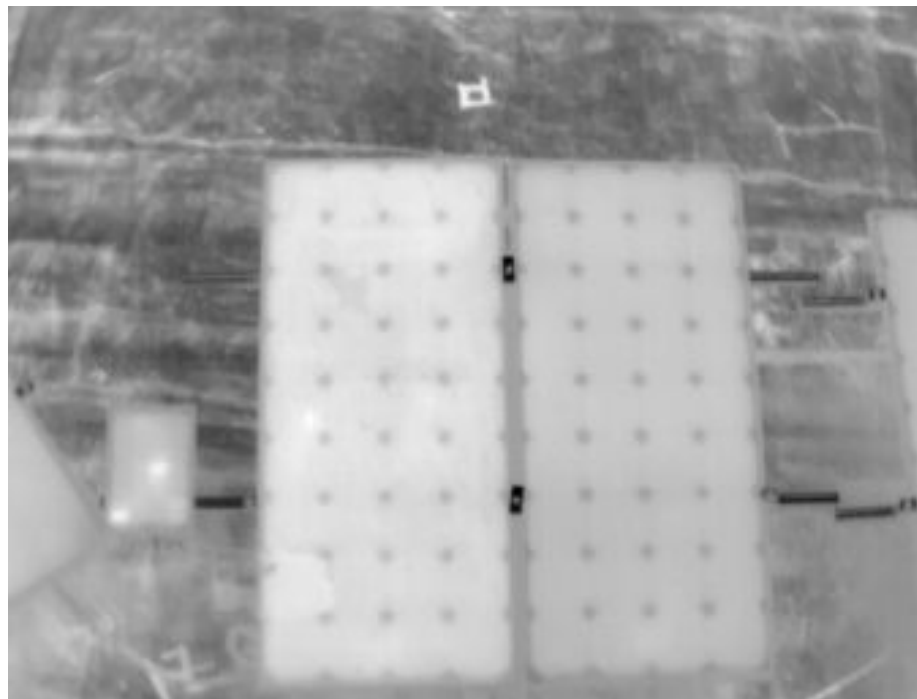
Phase 1: Extraction of images of solar panels

The images were pre-processed in the following manner:

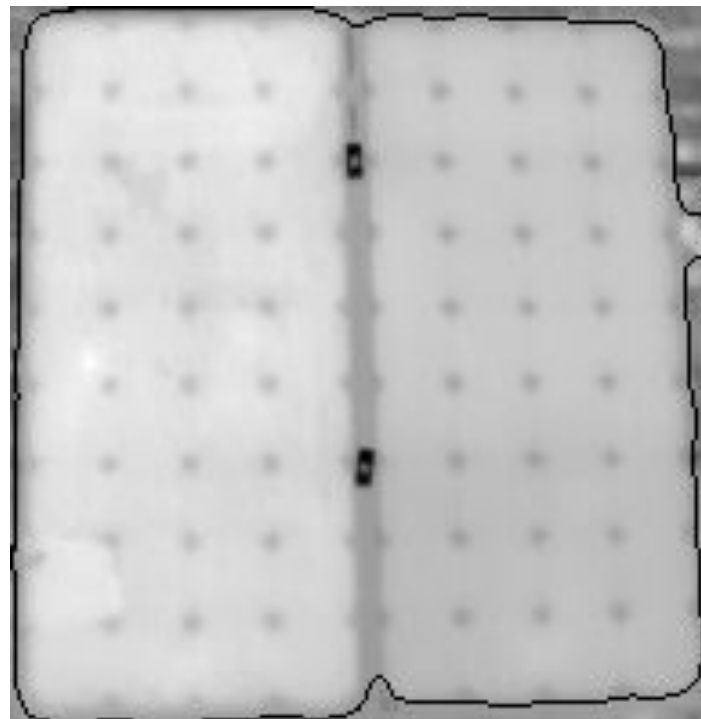
1. Converted the images to a grayscale format and apply a basic threshold for colour filtering.
2. The colour filtering was enhanced to clearly categorize the image into black and white
3. A 2D filter was applied to fill the gap between the solar so that appear as one image
4. Contour lines were applied around objects present in the image
5. Trace out the contour lines clearly to find coordinates of extreme points .
6. Crop the original image based on the extreme points found above.

The approach mentioned above resulted in the extraction of the solar panel from the original image that consisted of disturbance and background objects.

Original Image



Extracted Image



Phase 2:

Trail of First Defect Detection Methodology:

1. Convert images to model (greyscale)
2. Iterate through each row and column and find row totals and column totals of each pixel
3. Tally image total score to find possible differentiator

Clear distinction was noticed for defected and normal images but further testing and the application of models is required to verify and reach an accurate conclusion.