

SKYLARK DRONES

Technical Assignment Analysis

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Template Matching

- The matching method used is TM_CCOEFF_NORMED
- Template matching slides the sample template image over the validation image pixel by pixel to check for a match
- After reading about various feature matching techniques like SIFT and everything else, I decided to go with the template-matching method for the solution



- I tackled the problem of having rotated template images in the validation image by creating a set of template images having different rotations to check for matching.
- This eliminated the need for SIFT and other techniques.
- The model accuracy was increased by observing the `max_val` for all the predictions.
- Setting a threshold of `max_val > 0.75` greatly increases the model's accuracy as seen in the jupyter notebook.
- The Predicted GCP locations are stored in a CSV file as desired for each image.

- The model was tested using various matching methods of which TM_CCOEFF_NORMED performed the best.
- Using non-normalised methods resulted into a very large and close max_val when compared to each other thus creating a problem for setting a proper threshold.
- Here is a example of how the GCP detected is shown in the model

Possible GCP in image:- validation/2.JPG w/ Template type:-train/temp4.jpg

