

# Report - Assignment - 5

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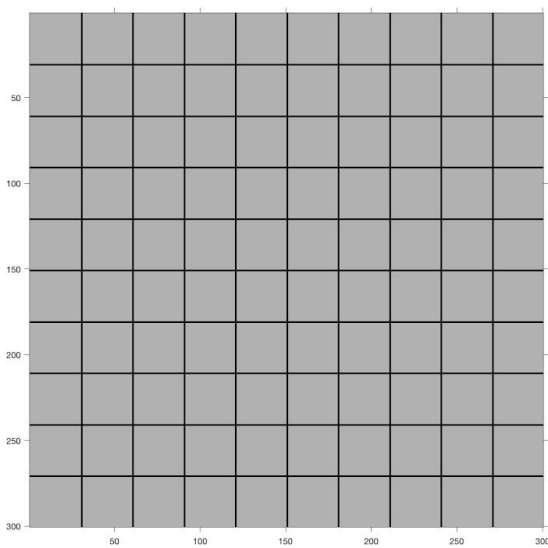
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## Without Noise :

6. On applying the translational values in column - 1 (translation in x and y respectively), column 2 represents the translational values obtained after taking cross-power spectrum for the image and its translated version.

Translation values - actual	Translational values - predicted
-30, 70	271, 71
-20, 90	281, 91
-5, 100	296, 101

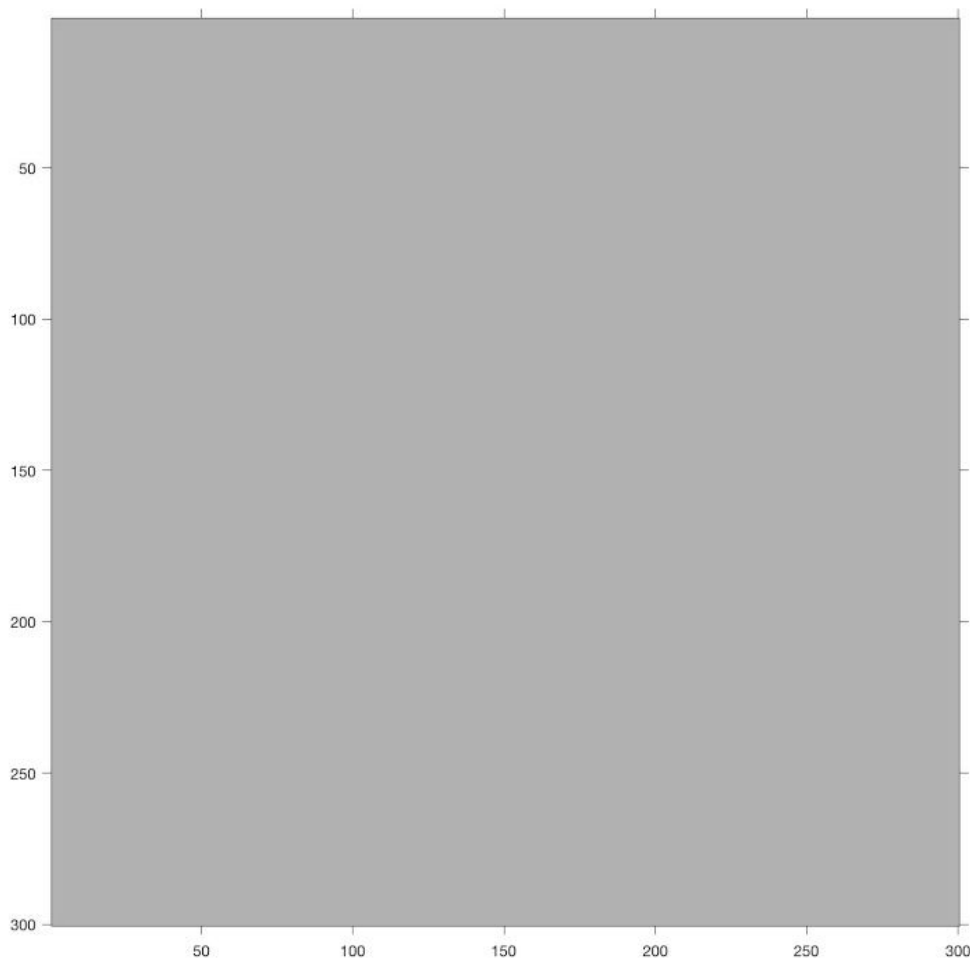
Negative indices wrap around 300.



## With Noise :

Even with noise variance of 20, the predicted values are coming to be the same.

Same translational values.



Time complexity :

For finding the complex conjugate -  $O(n^2)$  for one matrix.

Pointwise multiplication of two matrices -  $O(n^2)$

FFT  $< O(n^2)$

Therefore, the overall method takes  $O(n^2)$  time