

Implementation steps for the 2D CFAR process.

- Iterate over each column and row of the range doppler map, leaving off the edges where there are not sufficient training cells. Then iterate over the sub-matrix composed of the rows and columns surrounding the Cell Under Test. Sum the values in the training cells and then take the average by dividing by the number of cells. Add an offset to the noise and if the power level(cell value) is above the threshold then set the value of that cell to 1, otherwise set it to zero.

Selection of Training, Guard cells and offset.

- I followed the recommended values in the video with a training range of 10, guard range of 4, training doppler of 8, guard doppler of 4. In general more guard cells should be chosen with larger targets, and more training cells should be chosen in less dense target environments. The offset should be at a level to achieve the desired false alarm rate. A higher offset may lead to missed targets and a lower offset may lead to false positives.

Steps taken to suppress the non-thresholded cells at the edges.

- I created a zeros matrix the size of RDM, then put the output values into that matrix so all non-thresholded cells at the edges would have a value of 0.