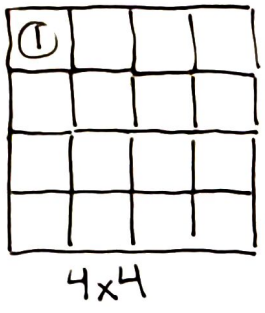
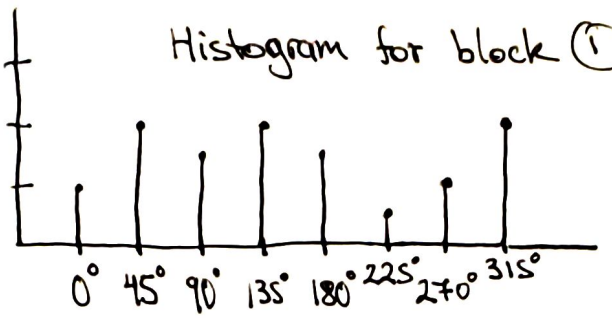
• SIFT Descriptor

8 orientations × (4×4) histogram array = 128 dimensions.





Hence, we have (4×4)=16 histograms with 8 entries each.

For a total of 128 values.

• Lowe's Ratio Test.

A 3 step test to eliminate ambiguous matches for a query feature q.

1. Find the closest 2 descriptors P_1 and P_2 based on euclidian distance d.
2. Test the distance to best match against a threshold, $d(q, P_1) < T$.
3. Accept a match only if the best match is substantially better than second.

$$\frac{d(q, P_1)}{d(q, P_2)} < \frac{1}{2}$$

, $\frac{1}{2}$ is the usual distance ration threshold.

Meaning our best match needs to be twice as close as our second best match.