Introduction

- Designed an Interleaved Intensity Order based Local Descriptor (IOLD) for Local Image Matching.
- A generalization of the Local Intensity Order Pattern (LIOP) [1].
- Inherently rotation and illumination invariant.
- Solved the dimensionality problem of LIOP.

Method

The local neighborhood is divided into multiple interleaved neighboring sets as shown in Fig. 1.

The computation of IOLD pattern for a particular pixel is depicted in Fig. 2. The weighting factor is computed by finding the number of pairs having difference of more than 5 and biased by 1 to avoid multiplication by 0.

The effect of proposed scheme over descriptor dimension is depicted in Fig. 3.

Datasets Used

Oxford Image Matching Dataset [2] and CASIA’s Complex Illumination Change Dataset [3] are used to test the performance and robustness of the proposed descriptor.

Image Matching Results

The image matching results in terms of recall vs 1-precision are depicted in Fig. 6 over each sequence of Oxford Dataset. The average result over both sequence of CASIA’s Dataset is demonstrated in Fig. 7. It is observed that using interleaved order the performance is improved either improved or nearly equal with a great improvement in matching time.

References