

Reconstructing an image from its spatial and geometrical information

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Nowadays, researches are very much interested to reconstruct images using its local image features. The local feature descriptor with their corresponding geometrical information is very helpful to get the related patch from the original image database. An approach for reconstructing images based on its local feature descriptors and its geometric information is proposed here. The external image database and database of feature descriptors are maintained in this proposed approach to reconstruct any image patch during the testing time. Local feature descriptors with the spatial coordinates, orientation, scale information of the region of interest and index of the source image are used to generate a database of feature descriptors. Nearest neighbor descriptor is identified by using Pairwise matching and identified nearest neighbour descriptor is used to extract the suitable image patch from the original image database. Also, Mean Squared Error (MSE) is used to find out the overlapping areas of patches between the new patch that we want to add and patch already existing in the query image. In our experimental design, the upper threshold value of MSE is set as the default threshold (DT) in order to reduce overlapping patches. Based on our testing outputs, this proposed approach progressively develops an approximation of the unknown image by constructing its region of interest one by one.

Keywords: image reconstruction, SIFT feature and mean squared error

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