

Assignment 2

Implement SIFT (Scale Invariant Feature Descriptor) and match keypoints detected on two images of the same scene captured from different views using SIFT descriptor.

(a) Scale-space decomposition [1 mark]

Output: Gaussian and DOG scale-space images.

(b) Keypoint detection [2 mark]

Output: Images highlighting detected key points on the Gaussian-blurred images.

(c) Orientation assignment [1 mark]

Output: Images highlighting the dominant orientation of the key points.

(d) Keypoint descriptor [3 marks]

Output: 128-dimensional descriptors for each key point.

(e) Image matching [1 mark]

Output: Best 20 key points matched between two images using the minimum distance approach and displayed on the set of images.

Note: For highlighting and display purpose, you can use built-in functions.