Patch-based registration for auto-stereoscopic HDR content creation

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Creating High Dynamic Range (HDR) images of static scenes is a common procedure nowadays that combines several Low Dynamic Range (LDR) images. However, HDR video and 3D content creation and management is an active, unsolved research topic. This work proposes a method to build HDR images from Low Dynamic Range (LDR) input images taken with multi-view cameras. We propose an image registration method to produce 3D HDR content for auto-stereoscopic displays. This method is based on the Patch Match algorithm which has been adapted to take advantage of epipolar geometry constraints of multi-view cameras. Different image similarity measures are used to improve the accuracy of the matching process. In our case, we use an 8-view LDR camera from which we generate an 8-view HDR output. Partial results show accurate registration and HDR reconstruction for each LDR input image.

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