



## Sandeep Katragadda: Reliable and robust feature point detection

### Description

Especially in the recent two years stereoscopic 3D content for both theatrical and home entertainment became increasingly popular. To ensure a quality and comfortable 3D experience for the end consumer in the cinema and at home, common production errors like vertical disparity and rotational errors which can be caused by an improper stereo-camera setup (which can be the cause of a suboptimal viewing experience), must be detected and corrected. In post production, the left and right images captured from stereoscopic camera are processed to reduce such unwanted disparity between them. Feature point detection has proven to be an interesting approach for those problems requiring only sparse representations. This could be efficiently used for a reliable and robust detection of vertical misalignments between the stereoscopic images as well as the detection of rotational errors. For a reliable and accurate detection of such errors, at least a minimum coverage of feature points is required. Those feature points should be evenly distributed over the entire image so that disparity in all regions can be corrected. In a second step, it is necessary to identify corresponding feature points in the two views to form a reliable set of stereo correspondences. These correspondences are used in later step for the image analysis to detect vertical misalignments and rotational errors. Both the stereo estimation algorithms (based on feature point detection) as well as the analysis algorithms should be implemented in a software demonstrator serving as a proof of concept.

### Advisor

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