# Light Field Spatial Super-Resolution via Geometric Feature Interaction

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**Abstract**

Light field (LF) enables high-dimensional image data representation since it can capture spatial and angular information of light rays simultaneously. The low spatial resolution caused by the limited imaging ability of the capturing equipment and the trade-off between spatial and angular resolution greatly affects the quality and application of LF images. In this letter, we propose an end-to-end LF super-resolution (SR) method via geometric feature interaction. Firstly, the low-resolution LF images are stacked in the horizontal and vertical epipolar plane image (EPI) directions and form 3D VI stacks. Then, these stacks are put into a dual-branch network, and we alternately perform 3D convolution on the viewpoint images (VIs) and EPIs by reshaping features for better feature extraction and interaction. The proposed method can fully explore the texture information and geometric consistency of the LF, and super-resolve all VIs at the same time. Experimental results on both real-world and synthetic LF datasets show that the proposed method has higher performance than other state-of-the-art methods.

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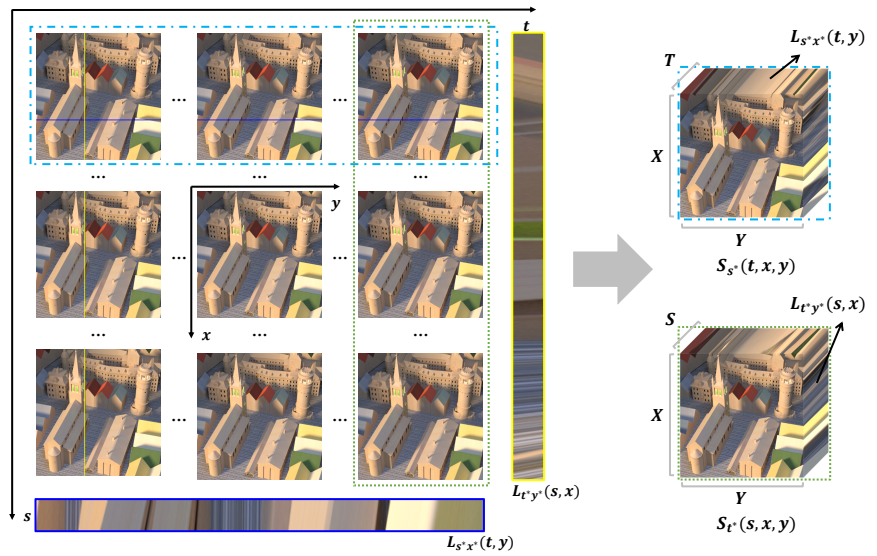


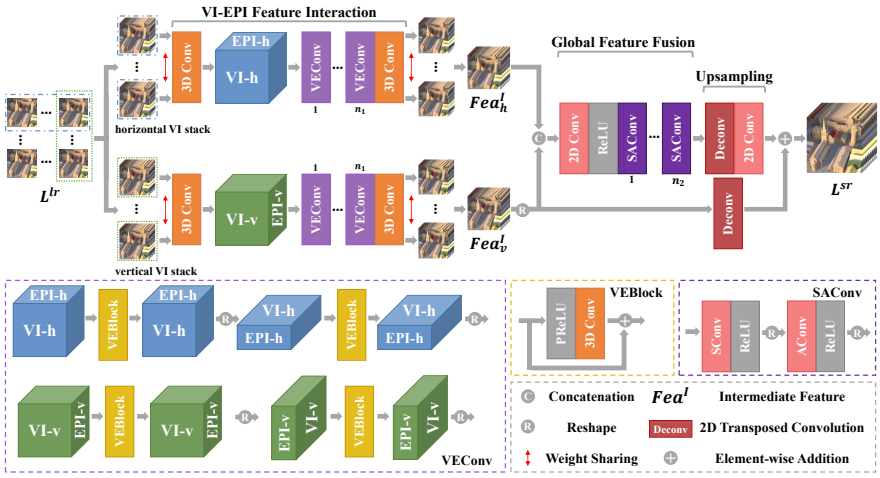


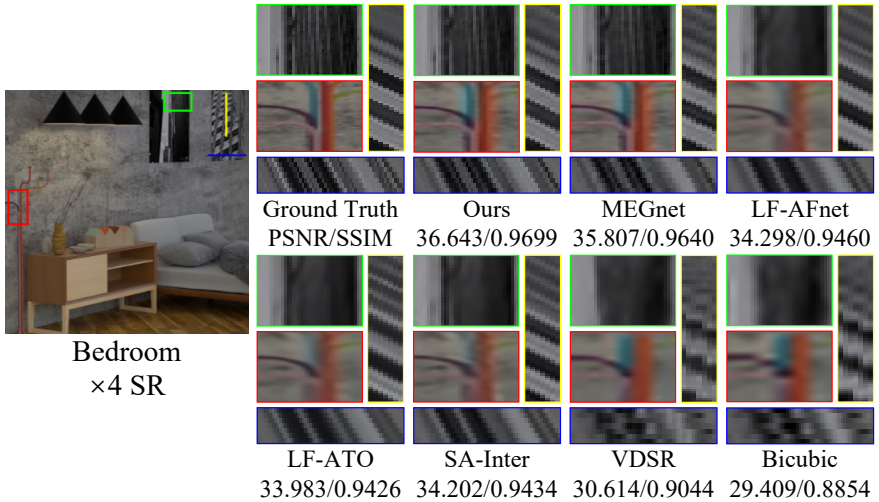

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