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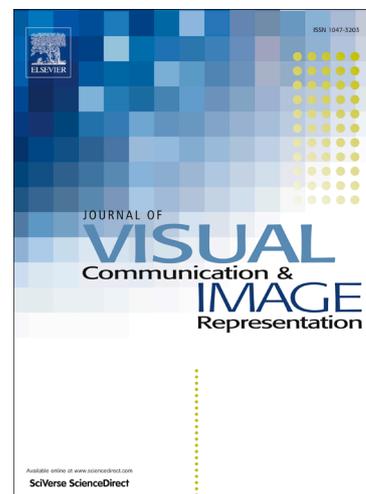
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Cost Aggregation Benchmark for Light Field Depth Estimation

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Abstract

Light field depth estimation has become a mature research topic and there are numerous algorithms introduced by various research groups. However, comprehensive and fair benchmark is difficult to apply because there are large step variances of the introduced algorithms. It is essential to analyze each step in the light field depth estimation so that it could help design better and more robust algorithms. Thus, a thorough analysis of cost aggregation is conducted in this paper to analyze the performance of various cost aggregation methods on light field depth estimation. A study on the parameter setting for each cost aggregation method is performed. Then, each cost aggregation with its optimal parameters is evaluated individually. Instead of using the standard rank system, this paper utilizes the weighted rank system based on the score difference on each criterion. Experimental results confirm that the guided-filter based method outperforms other methods in most evaluation criteria.

Keywords: light field; depth estimation; cost aggregation; weighted rank; benchmark

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