Ph: 9585554590, 9585554599
Email: support@salemsmartreach.com
URL: www.salemsmartreach.com

Evaluating Combinational Illumination Estimation Methods on Real-World Images

Abstract:

Illumination estimation is an important component of color constancy and automatic white balancing. A number of methods of combining illumination estimates obtained from multiple subordinate illumination estimation methods now appear in the literature. These combinational methods aim to provide better illumination estimates by fusing the information embedded in the subordinate solutions. The existing combinational methods are surveyed and analyzed here with the goals of determining: 1) the effectiveness of fusing illumination estimates from multiple subordinate methods; 2) the best method of combination; 3) the underlying factors that affect the performance of a combinational method; and 4) the effectiveness of combination for illumination estimation in multiple-illuminant scenes. The various combinational methods are categorized in terms of whether or not they require supervised training and whether or not they rely on high-level scene content cues (e.g., indoor versus outdoor). Extensive tests and enhanced analyzes using three data sets of real-world images are conducted. For consistency in testing, the images were labeled according to their high-level features (3D stages, indoor/outdoor) and this label data is made available on-line. The tests reveal that the trained combinational methods (direct combination by support vector regression in particular) clearly outperform both the non-combinational methods and those combinational methods based on scene content cues.