# Review Paper on Fusion Approach for Color Image Segmentation

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**Abstract:** *Fusion methods for color image segmentation integrate various techniques (such as color/texture, region/contour, various color spaces) to address the shortcomings of individual approaches, frequently employing optimization (such as K-means, Genetic Algorithms) or certainty-driven fusion (Dempster-Shafer) to obtain more reliable, precise, non-overlapping outcomes for uses like medical imaging or remote sensing. Crucial studies investigate merging various criteria (such as information variation and F-measure) or integrating diverse information sources (color, texture, edges) to enhance segmentation qualityCombining image segmentations through consensus clustering and relying on the optimization of a single criterion, often referred to as the median partition-based method, can skew and restrict the effectiveness of an image segmentation model. This study introduces a novel, straightforward, and effective segmentation method, utilizing a fusion technique designed to merge multiple segmentation maps linked to simpler partition models, ultimately producing a more dependable, precise, and non-overlapping image outcome. The primary goal of the study is to achieve a reliable and non-overlapping result through the application of k-means and C-means.*

**Keywords:** Genetic Algorithm, Segmentation, k-means Algorithm, C-means Algorithm