

# **Modified iterative method with red-black ordering for image composition using poisson equation**

## **ABSTRACT**

Image composition involves the process of embedding a selected region of the source image to the target image to produce a new desirable image seamlessly. This paper presents an image composition procedure based on numerical differentiation using the laplacian operator to obtain the solution of the poisson equation. The proposed method employs the red-black strategy to speed up the computation by using two acceleration parameters. The method is known as modified two-parameter over-relaxation (MTOR) and is an extension of the existing relaxation methods. The MTOR was extensively studied in solving various linear equations, but its usefulness in image processing was never explored. Several examples were tested to examine the effectiveness of the proposed method in solving the poisson equation for image composition. The results showed that the proposed MTOR performed faster than the existing methods.