

ABSTRACT

The article is concerned with edge-forming methods to be applied as a post-process for image zooming. Image zooming via standard interpolation methods often produces the so-called checkerboard effect, in particular, when the magnification factor is large. In order to remove the artifact and to form reliable edges, a semi-discrete model and its numerical algorithm are suggested along with edge-forming numerical schemes. The algorithm is analyzed for stability and choices of parameters. For image zooming by integer factors, a few iterations of the algorithm can form clear and sharp edges for gray-scale images. Various examples are presented to show effectiveness and efficiency of the newly-suggested edge-forming strategy.