

Image-Based Bidirectional Scene Reprojection

Supplemental Material

Lei Yang¹ Yu-Chiu Tse¹ Pedro V. Sander¹ Jason Lawrence² Diego Nehab^{3,4} Hugues Hoppe³ Clara L. Wilkins⁵
¹Hong Kong UST ²University of Virginia ³Microsoft Research ⁴IMPA ⁵Wesleyan University

Supplemental results

This document contains expanded figures with supplemental results for each of the applications presented in the paper. More specifically, Figure 1–4 include the rendering results and difference images for all B-frames, and MSE error graphs for all techniques.

Comparison to frame upsampling

Figure 5 shows example B-frame renderings of our approach compared to that of Didyk et al. [2010]. We must stress that this is not a completely fair comparison, since the method of Didyk et al. [2010] is targeted at higher-frame-rate displays, where the individual B-frames are hardly perceived. We included this comparison to demonstrate that our image-based bidirectional reprojection technique is the first real-time technique that interpolates frames in image-space with sufficient quality for rendering on standard displays with common refresh rates.

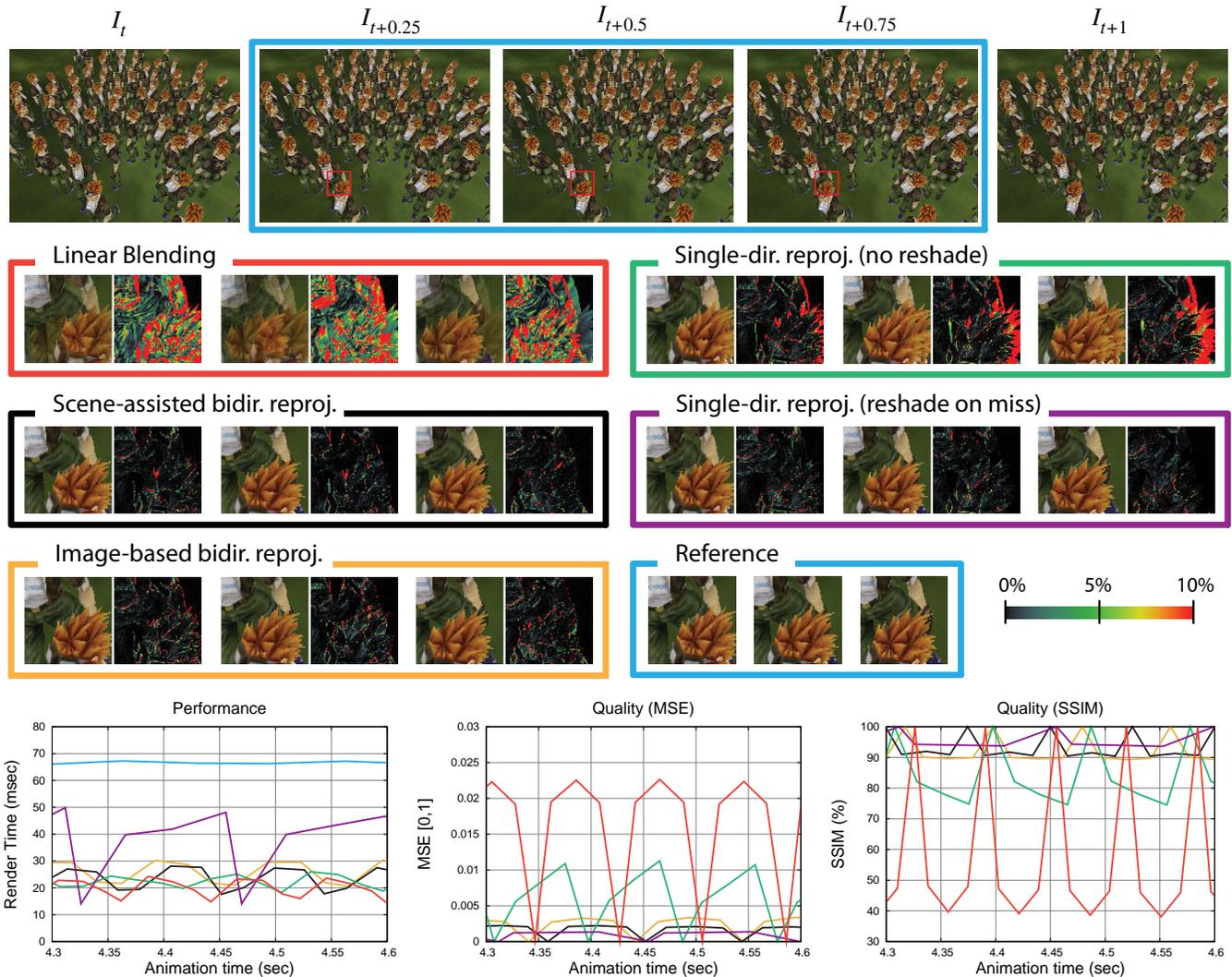


Figure 1: Results of our algorithm on the walking scene. The lines in the plots are colored according to the color of the frame around the insets of the corresponding method. The closeups show error images.

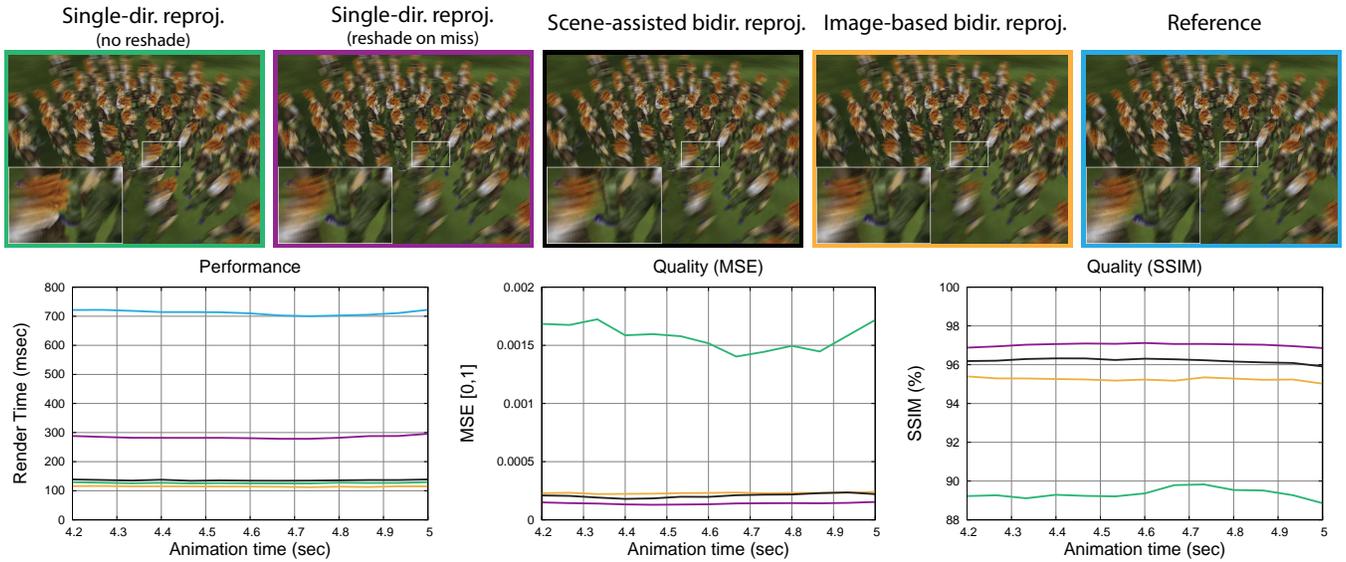


Figure 2: Results of our algorithm on the walking scene with motion blur.

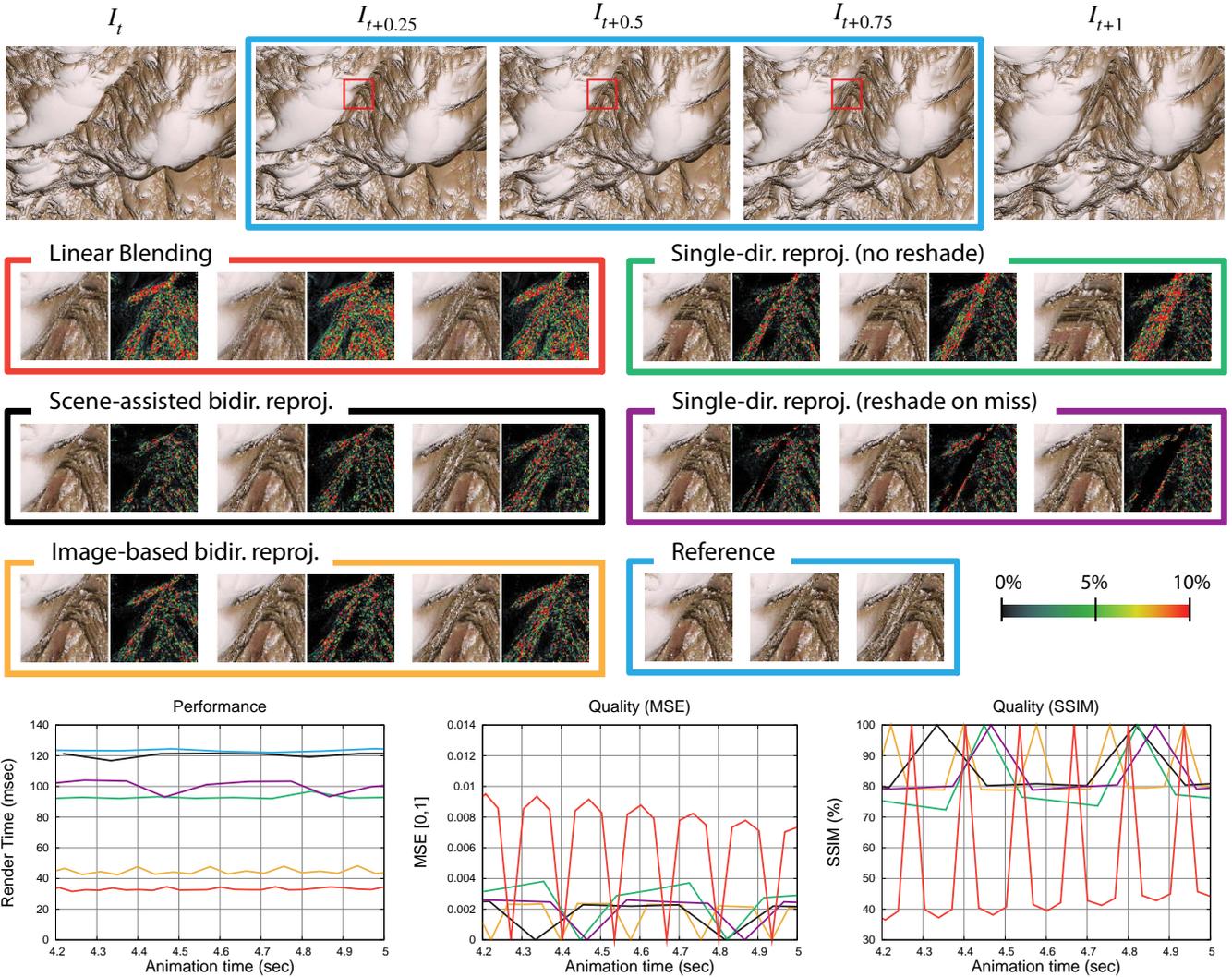


Figure 3: Results of our algorithm on the terrain scene. The lines in the plots are colored according to the color of the frame around the insets of the corresponding method.

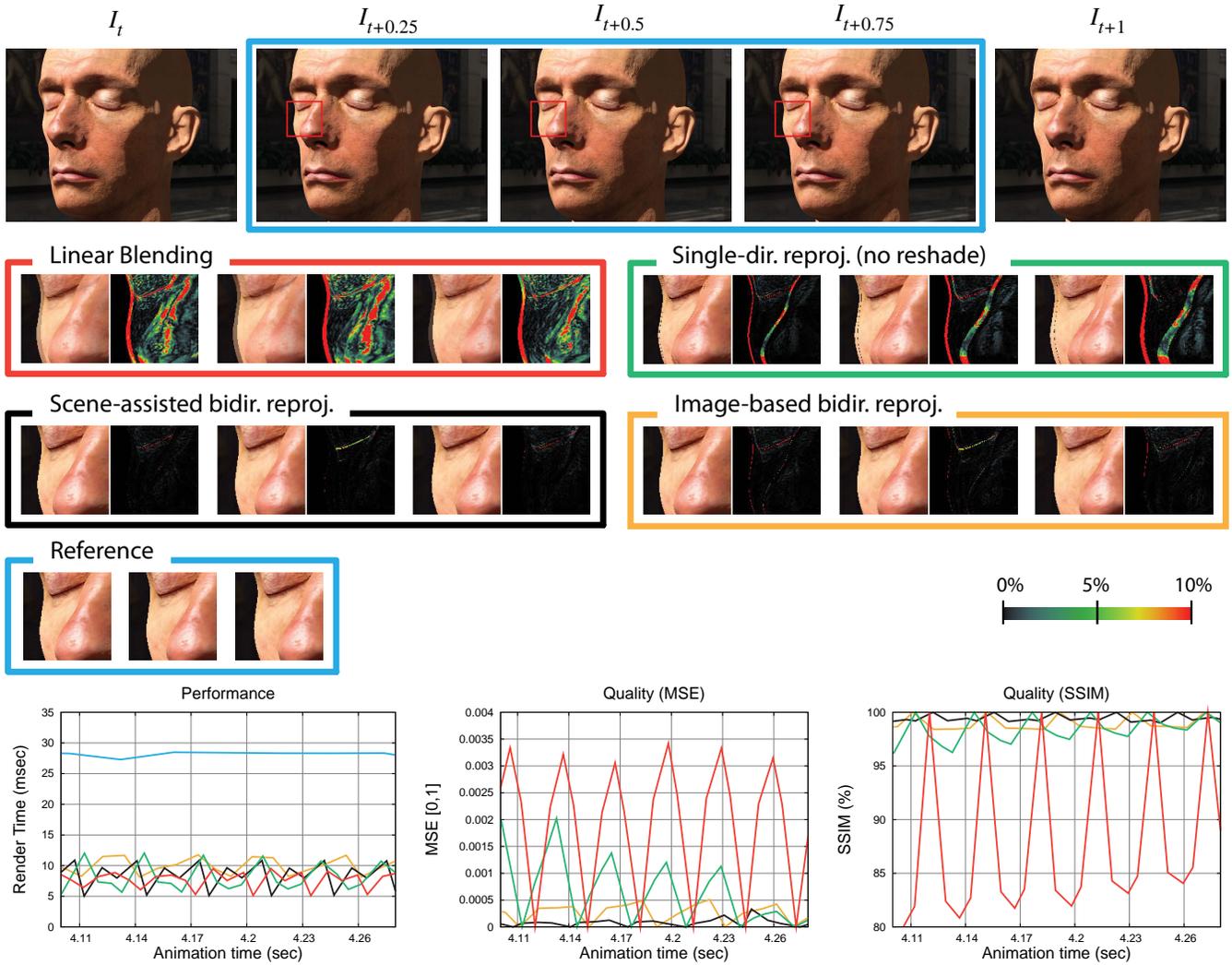


Figure 4: Results of our algorithm on the NVIDIA human head scene. The lines in the plots are colored according to the color of the frame around the insets of the corresponding method.

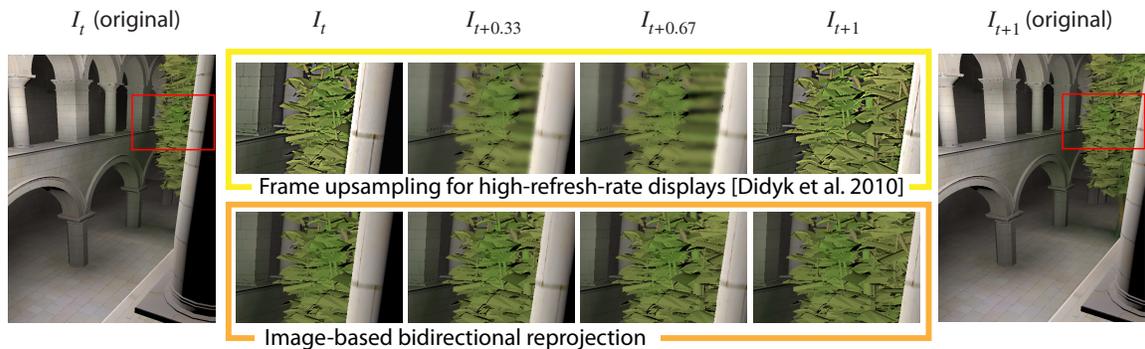


Figure 5: Comparison with the method of Didyk et al. [2010], which is suitable for high-frame-rate displays where individual interpolated frames are hardly visible. (Note that I -frames are not identical to ours because Didyk et al. [2010] use contrast-enhanced images to counteract blurriness in the interpolated frames.)