



Letter to the Editor

Error in Volume Rendering Paper Was in Exposition Only

To the editor:

I am writing to correct a misrepresentation of my work that appeared in a paper published in the proceedings of the 1998 Symposium on Volume Visualization. In a paper by Craig Wittenbrink, Tom Malzbender, and Michael Goss,¹ the authors point out that Figure 1 in my frequently cited 1988 paper² calls for interpolating non-opacity-weighted voxel colors, which produces artifacts in volume-rendered images.

The authors are correct—my 1988 paper contains a mistake. However, the error is only in the exposition, not in the implementation. My volume rendering code is correct—I perform opacity-weighted interpolation of colors. Thus, the images in my 1988 paper, in other papers I published around the same time, and in my dissertation, are free of the artifacts described by the authors. Unfortunately, my code wasn't disseminated until Lacroute and Levoy's VolPack software package was made publicly available in 1994.³ As Wittenbrink et al. point out, Volpack's code is correct.

The authors' paper in VolVis88 is a good one: sound, well written, and nicely illustrated. I hope it prevents other researchers from making the mistake they describe. My objection to the paper is that the authors knew this mistake was only in my exposition—I gently told them so on numerous occasions prior to 1998. Although they never questioned my claim, they chose not to mention it in their paper. As a result, the paper gives the impression that my research was flawed, rather than that I had merely made a mistake in a figure. Both kinds of mistakes are unfortunate, and we as researchers studiously try to avoid them, but the latter error is far less egregious.

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References

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3. P. Lacroute and M. Levoy, "Fast Volume Rendering Using a Shear-Warp Factorization of the Viewing Transformation," *Proc. Siggraph 94*, Computer Graphics Proc., Ann. Conf. Series, ACM Siggraph, July 1994, pp. 451-458.

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