Corrections

# Recommended corrections by Michael Manzke

The Abstract is very long

* It’s shorten from 3 pages to 1.5 pages.

Related Publication could be moved into the contributions

* The relationships between the chapters and related publications are clarified in the Summary of Chapters section in Chapter 1.

The list of Figures should use short captions

* The captions of Figures and Tables are shortened.

Section 1.1 could provide more related work.

* Related work on feature visibility, saliency maps and saliency fields are added to Section 1.1.

Section 2.1.1 and 2.1.4 should provide more recent citations.

* Added 3 recent citations to Section 2.1.1 and 2 recent citations to Section 2.1.4.

Many of the images are too small, they are difficult to read

* In progress: some images are replaced by images with larger fonts.

Chapter 4 should provide a formal definition what a feature is

* Section 4.3.1 is added to provide a formal feature definition

Section 5.4 should evaluate how the algorithm executes on 1,2,4,8… CPUs

* Results of the optimization on 1,2,4,8 CPU threads are added to Section 5.4

# Recommended corrections by Pere Brunet

The last paragraph on page 1

* The relationships between the chapters and related publications are clarified in the Summary of Chapters section in Chapter 1.

1st paragraph on page 2

* Clarified Wang extended the previous work: “Wang et al. extended the previous work on visibility histograms and proposed a feature visibility metric, in order to measure the influence of each feature to the volume rendered image.”
* Captions of Figures 2.6 and 2.7 are extended to explain the images in the subfigures.

2nd paragraph on page 2

* Section 4.3.1 is added to provide a formal feature definition

3rd paragraph on page 2

* Added an explanation of the choice of transfer functions with tent-like shapes and a related citation to the last paragraph in Section 3.3.1: “Although many shapes can be used in transfer function design, tent-like shapes are often sufficient to model the user’s intent [7]. In this chapter, results of both transfer functions of tent-like shapes and continuous transfer functions are used as input of the optimization.”
* Edited the last paragraph in Section 3.3.1 to clarify the goal of the optimization: “The global optimization in our approach aims at reducing this kind of occlusion by modulating the opacity of the transfer function based on the entropy of volume data, which is described in the next subsection.”

4th paragraph on page 2

* Added a paragraph in Section 3.4.2 to discuss the choices of termination thresholds and removed the mention of maximum iteration count at the end of Section 3.5.1.

“The optimizer terminates when further iterations almost do not change the quality of the resulting image. In our implementation, the optimization terminates when the energy function falls below a predefined threshold or reach a maximum iteration count. We generated images using a large number of iterations and compared this, using the SSIM metric ~\cite{Wang2004SSIM}, to images at different progressive stages of optimization, and then determined satisfactory thresholds for the tested data sets. In practice this threshold can be chosen as demanded by the application or determined using a perceptual study.”

5th paragraph on page 2

* Added a citation to clarify equation (4.3)

6th paragraph on page 2 and 1st paragraph on page 3

* Edited the description of the experiment in Section 4.5.2

2nd paragraph on page 3

* Results of the optimization on 1,2,4,8 CPU threads are added to Section 5.4

3rd paragraph on page 3

* Results of 5 features and different initial transfer functions are added as Appendix C and mentioned in Section 5.4

4th paragraph on page 3

* Removed the 2D view image in Figure 6.3 (b), so the 3D views in Figure 6.3 are not mixed with 2D views.
* Added volatility images over 5, 10, and 20 frames of cloud in Section 6.4.
* Added an alternative visualization in Section 6.4 where the variables X and Y are swapped.

5th paragraph on page 3

* To do: need to add a list of terms at the beginning of the document.

6th paragraph on page 3

* Fixed the typo in page 37. The sentence “the user can select an intensity value that they would like to enhance” is rewritten as “users can select intensity values that they would like to enhance”