Journal of Visualization, Vol. 3, No. 3 (2000) 209

5. Qantitative Visualization of Human Structure Using Segmented Volume Data Obtained by MRI

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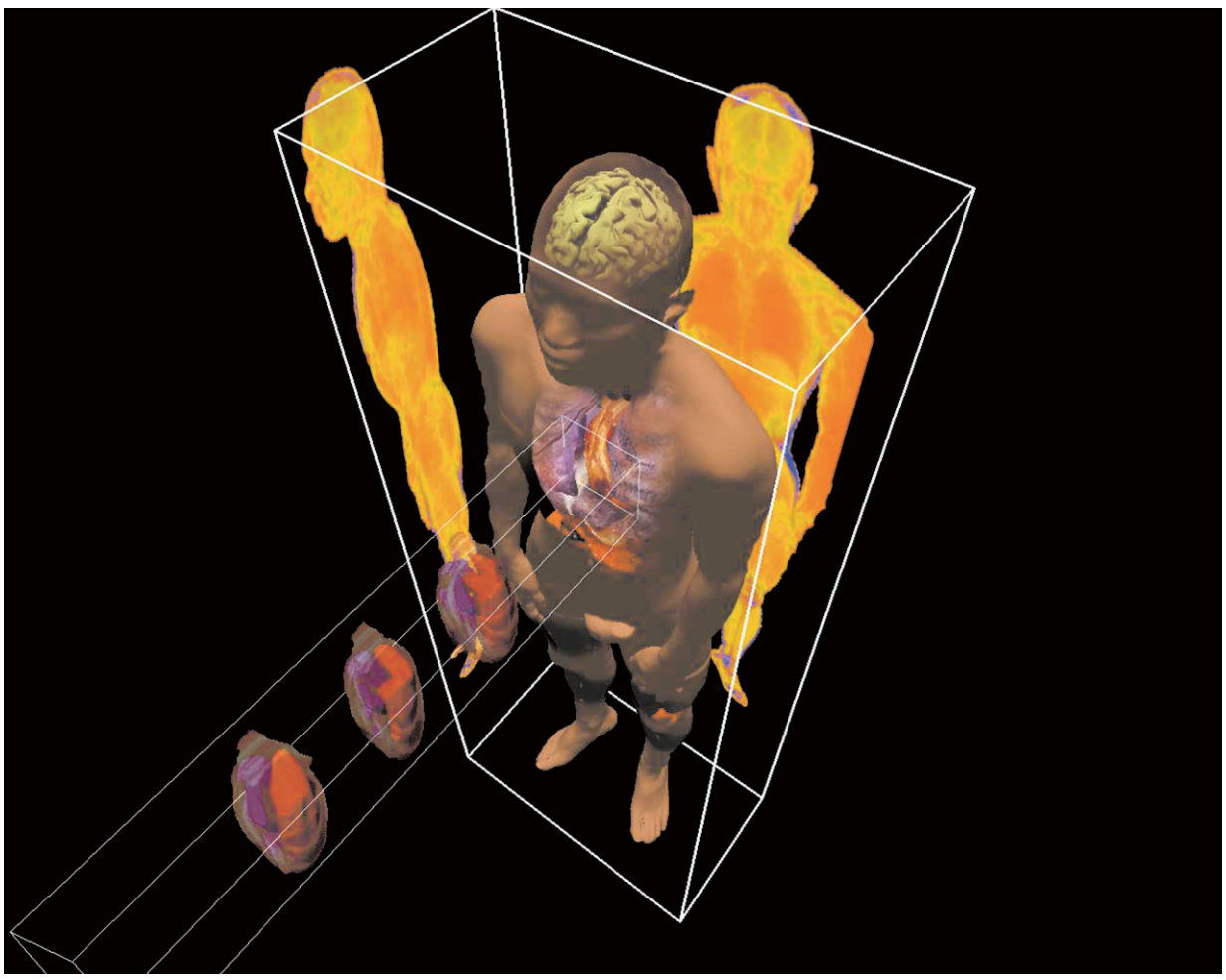

It is needless to say that to visualize inside of a human body is one of the dreams in the medical world. Currently, it is getting easier to obtain a 3 dimensional or 4 dimensional data set using the latest MRI or CT systems. By preserving volume data of each segmented data according anatomical structure as a format of data storage, we are now developing a new technique for quantitative analysis that can show the morphology and functions of living body more effectively and precisely. The figure shows an example of a whole male human body. The image was obtained from an MRI data set and segmented by each main organ. Instead of reading sectional planes of a huge MRI data set, this reconstructed image shows the indicative result that was acquired by recognaizing the whole body structure intuitively. The image can not only catch an accurate position or form of organs direct to its whole structure, but also measure a size and a volume of a piece of an organ that was taken out. Then, it enables us to observe and analyze 4 dimentional cardiac functions such as transparent heart image that is placing time sequentially in anterior part of chest. Since the data set is volume data, this also permits to show MIP (maximum intensity projection) from optional directions and obsereves body structures in full details.