

# **Development of an Integrated Software for Visualizing 3-Directional Human Body with Adaptive Segmentation**

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An integrated software for visualizing human body is developed. Approximately 1000 number of cuts are utilized for representing whole human body. Adaptive segmentation method is proposed for identifying segmentation boundaries of a given cut. A few numbers of cuts, which each cut is segmented by human expert manually, are employed for segmenting adjacent next cut automatically. Repeatedly we use previous cut adaptively to estimate boundary points of next not segmented cut. Using the whole number of segmentation cuts, 3-D visualization software is developed. Depending on user's requirements, any cutting plane could be displayed with segmented boundaries. In addition zoom-in and zoom-out function with the 3-directional rotation could be effectively displayed for a selected cut. The proposed segmentation method could reduce segmentation time by performing automatic segmentation using a few numbers of segmented cuts. Performance evaluation is given to verify the proposed approach. We also present the all detail function of the developed software with demonstration. The software could be utilized as groundwork for developing virtual operation, segmentation tool for any given human image, and educational software for dissection. Material properties are under investigating to visualize 3-dimensional human data effectively.