6-2009

# Reconstruction of the Upper Torso Using X-Ray Imagery

Thomas Wischgoll
*Wright State University - Main Campus*, thomas.wischgoll@wright.edu

Christopher Koehler

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Thomas Wischgoll, Christopher Koehler (Wright State University)

To help mimic some of the useful features of CT scans for early detection of diseases like lung cancer at a fraction of the cost, an improved 3D ribcage reconstruction algorithm as well as a unique knowledge based interactive 3D lung reconstruction algorithm is proposed. The ribcage and lung reconstructions are both based on the typical PA and Lateral X-ray images that are already being acquired during preemptive screenings for lung cancer. A user's knowledge of human anatomy is combined with image processing techniques and mesh transformation algorithms to get around the fact that all the true patient specific 3D data is lost during the X-ray process. An example of how the reconstructed lung geometry can be used to clip the important portion of an approximate volume reconstruction to provide a supplementary interface to search for potential diseased areas is also presented.