

## Abstract

Early detection of diseases and their correct identification represents a very important factor in public health. One of the main advances in medical diagnostics is the use of not invasive methods for attainment images of transversal sections of the internals of the human body, being the form of diagnosis that tends to increase year by year. Many applications of medical diagnosis are based upon sets of sliced images where the correct interpretation is based upon the combination of all images acquired. Magnetic Resonance (MR) and Computed Tomography (CT) are examples of this type of medical exams, which involves manipulation of great volumes of data. The use of computers to combine and visualize the results of these exams is a requirement fundamental. Image processing improves the possibilities of correct diagnosis and computer graphics turn the 2D collection of data into a 3D information. This work initially presents a review of the characteristics of medical bidimensional and tridimensional concepts of image processing. It is considered that the medical images obtained by scanning already have been reconstructed, and are stored in DICOM archive format, being made a summary of this format. After that, the implementation of the processing image techniques is presented and the discussed images are displayed, using Matlab, version 6,5 release 13 of the Mathworks Incorporation. Finally, illustrative examples of real data of CT and MR exams using this tool is commented to show its possibilities in the medical analysis of the internal elements of the human body.

Keywords: Magnetic Resonance, Computed Tomography, DICOM, Segmentation, Mathematical Morphology, Volumetric Visualization.