

CT Image Single Display and Contrast Enhancement (Ramot)

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The Invention

An improved algorithm for handling CT scan information which enables the display of all relevant anatomical features in a single image.

Potential Applications

CT scans are a basic tool of most medical centers and are in constant use. An improved algorithm for simultaneous viewing of all relevant anatomical features would not only save valuable analysis time, but would also be an aid to evaluation, as seeing features together in a single image adds an important dimension to information extraction. The algorithm has been evaluated by collaborating radiologists with promising reactions.

The Need

An important clinical problem in radiology is the inability to see abnormalities in tissues with marked differences between their X-ray attenuation coefficients in a single CT window. When viewed by a radiologist the same CT image slice must be examined four times, each time focusing on a different tissue's window. This process is time-consuming and inconvenient. Our algorithm is comprised of two phases: 1. The preprocessing phase, a unique method of enhancing and stretching the image. 2. The major-processing phase, involving companding (compressing and expanding) the HDR (High Dynamic Range) CT image into a single low dynamic range image. The extracted image contains all the required CT information included in all the four windows mentioned above; the process is completely automatic.

Patent

Patent pending in US and Europe

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