



Computational and Mathematical Methods in Medicine

Special Issue on
Soft Computing in Medical Image Processing

CALL FOR PAPERS

Recent advances in medical imaging modalities such as magnetic resonance (MR) imaging and multidetector computed tomography (MDCT) enable us to acquire high-dimensional, sectional, thin-sliced, and a large number of images within a short acquisition time. The sheer volume of data poses great challenges for human interpretation of images by radiologists. Image processing becomes essential to analyze such complex data.

Soft computing has been introduced into medical image processing because it is an effective approach to handle uncertainties inherent in acquiring image data. Some examples in the past 20 years are fuzzy connectedness approaches to image segmentation, fuzzy clustering methods particularly for human brain MR image segmentation, and statistical atlases and fuzzy models for object recognition and delineation. Soft computing approaches include fuzzy logic, neural networks, support vector machines, evolutionary computation, probabilistic approaches, and chaos theory.

This special issue aims to showcase recent advances in soft computing approaches in medical image processing.

Potential topics include, but are not limited to:

- ▶ Computer-aided diagnosis systems
- ▶ Computer-aided detection systems
- ▶ Computer-aided surgery systems
- ▶ Image/signal processing theory and algorithms
- ▶ Image reconstruction
- ▶ Medical informatics
- ▶ Medical image/signal analysis
- ▶ Medical image/signal processing
- ▶ Medical image/signal acquisition theory/algorithm/systems
- ▶ Multidimensional data visualization
- ▶ Fuzzy image processing
- ▶ Evolutionary image processing
- ▶ Neural network
- ▶ Image enhancement
- ▶ Filtering
- ▶ Noise removal

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