



Computational Intelligence and Neuroscience

Special Issue on
Computational Intelligence for Brain Image Processing

CALL FOR PAPERS

As the technology is advancing, many image capturing techniques are evolving very fast which renders with complex images. This issue makes image processing nowadays a very complicated and expensive task.

Medical image processing plays a significant role in clinical diagnosis. It can be considered a difficult problem because medical images commonly have poor contrasts, different types of noise, and missing or diffusive boundaries. The anatomy of the brain can be scanned by Magnetic Resonance Imaging (MRI) scan, computed tomography (CT) scan, and recently hyperspectral images. Brain tumor is one of the leading causes of death among people. Brain tumors in adults occupy the 13th place in frequency of all cancers, and due to their particularly poor prognosis they are the fifth most common cause of cancer death in the under 65-year-old population. Moreover, they are the second most common cancer in children and the most common cause of cancer death in children. It is evident that the chance of survival can be increased if the tumor is detected correctly at its early stage. Thus, there is a need for efficient medical image processing methods with some preferred properties such as fast computation and accurate and robust results.

In order for the scientists to achieve good analysis results from the brain images, several processes must be performed and their success depends on the availability of reliable methods. Computational intelligence such as Artificial Neural Network (ANN), evolutionary algorithms, fuzzy systems, and their combinations (hybrid one) plays important role in providing fast, imprecise, and reliable solutions.

The special issue provides an opportunity to researchers in different medical and academic institutes to disseminate and share ideas related to their scientific findings in the area of brain image processing based on computational intelligence.

Potential topics include, but are not limited to:

- ▶ New brain image acquisition techniques
- ▶ 2D and 3D brain image visualization
- ▶ Enhancement methods for brain image
- ▶ Brain image registration
- ▶ Super resolution brain image
- ▶ Brain image segmentation
- ▶ Pattern recognition in brain image

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