

## **Image Processing and Analysis in Biomedical Engineering**

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### **PROPOSAL**

**Key Words:** *Image Segmentation, Shape Reconstruction, Image Registration, Motion Tracking.*

In recent years, extensive research has been performed to evaluate living structures from images, involving various areas of knowledge, as medicine, physics, mathematics, engineering and computer sciences. For instance, in biomedicine it is possible to use computational procedures of image processing and analysis to model and visualize human organs from medical images. These procedures can have different goals, such as shape 3D reconstruction, segmentation, motion and deformation analyses, registration, simulation, enhanced visualization, biomechanical studies, etc. The main goal of this symposium is to bring together researchers involved in the related fields (image acquisition, signal processing, image processing and analysis, medical imaging, scientific visualization, software development, grid computing, etc.), in order to set the major lines of development for the near future.

Therefore, the proposed symposium will consist of researchers representing various fields related to computational vision, computer graphics, computational mechanics, mathematics, statistics, medical imaging, biomedicine, bioengineering, etc. Thus, it endeavours to make a contribution to achieving better solutions for more realistic computational “living” models from images, and attempts to establish a bridge between clinicians, researchers and hardware manufacturers from these diverse fields.

In the symposium will be considered topics of (not limited to):

- Image Processing and Analysis for Biomedical Images;
- Segmentation, Reconstruction, Tracking and Motion Analyse in Biomedical Images;
- Biomedical Signal and Image Acquisition and Processing;
- Objects Simulation and Virtual Reality for Biomedicine;
- Computer Aided Diagnosis, Surgery, Therapy, Treatment and Telemedicine Systems;
- Software Development for Biomedical Images;
- Grid and High Performance Computing for Biomedical Images.