METHODS OF IMAGE PROCESSING AND ANALYSIS FOR BIOMEDICAL APPLICATIONS

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MINI SYMPOSIUM PROPOSAL

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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 methods of image processing and analysis to model and visualize human organs from medical images. These methods can have different goals, such as shape 3D reconstruction, segmentation, motion and deformation analysis, registration, simulation, enhanced visualization and biomechanical simulation.

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.

Topics of interest in the symposium include, but are not limited to:

- Image Acquisition and Processing for Biomedical Applications;
- Image Enhancement, Segmentation, Registration and Fusion for Biomedical Applications;
- Reconstruction, Motion and Deformation Analysis for Biomedical Applications;
- Computer Aided Diagnosis, Surgery, Therapy, Treatment and Telemedicine Systems;
- Software Development for Biomedical Applications;
- Grid and High Performance Computing for Biomedical Applications.