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Editorial message from the Editor-in-Chief

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EDITORIAL

Editorial message from the Editor-in-Chief

I am pleased to welcome you to the first Issue of Volume X of our journal '*Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*'.

The Journal has continued its aims of presenting and discussing state-of-the-art methods and applications related to imaging and visualisation of biomedical data and facilitating the interaction among researchers, technology developers, end-users and stakeholders.

In 2021, the Journal received 266 articles from 19 countries: Algeria, Argentina, Australia, Bangladesh, Belgium, Brazil, Canada, Chile, China, Colombia, Czech Republic, Egypt, France, Germany, Greece, Iceland, India, Indonesia and Iran, which confirms the worldwide acceptance of the Journal.

In the 1st Issue of Volume IX, seven articles were published: 1) *Suhr et al*. used optical and confocal microscopy techniques to investigate retrieved knee liners made of cross-linked, ultra-high molecular weight polyethylene; 2) *Singh et al*. proposed models for activity recognition from video streams; 3) *Dasanayaka et al*. studied the computational screening of pulmonary tuberculosis in chest X-ray images; 4) *ElOuassif et al*. presented a systematic review on classification techniques in breast cancer diagnosis; 5) *Bhat and Anitha H* addressed the reconstruction of cardiac activities from vectorcardiography and magnetocardiography data; and 6) *Jane et al*. suggested a segmentation method for analysing clinical time series data.

In the following issue, there were nine articles: 1) *Suksmono et al*. addressed the classification of adeno carcinoma, high squamous intraephithelial lesion, and squamous cell carcinoma in Pap smear images; 2) *Tripathi et al*. proposed an automatic method to quantify the tumour region in brain Magnetic Resonance (MR) images; 3) *Zuluaga-Gomez et al*. proposed a methodology for breast cancer diagnosis using thermal imaging; 4) *Hani et al*. suggested an automatic approach for macular degeneration diagnostic using optical coherence tomography (OCT) images; 5) *Soltani et al*. addressed the quantitative assessment of full field deformation of right ventricle from images acquired during open heart surgery; 6) *Rinaudo et al*. modelled cardiac mechanics of left ventricular noncompaction using MR images; 7) *Aher and Jena* studied cancer detection and classification using gene expression data; 8) *Sunitha and Rajalakshmi* proposed a multi-modal image fusion technique for enhancing image quality; and 9) *Zellagui et al*. addressed the prediction of proximal femur fracture risk from dual-energy X-ray absorptiometry images.

The third and fourth issues, which include 14 and 15 articles, respectively, were devoted to *Augmented Environments for Computer-Assisted Interventions (AE-CAI), Computer Assisted and Robotic Endoscopy (CARE), and Context-aware Operating Theatres (OR 2.0) workshops*, which were held in conjunction with the *2020 Medical Image Computing and Computer-Assisted Interventions (MICCAI 2020)* and organised by C.A. Linte, E. Chen, S. Drouin, M. Kersten-Oertel, Z. Yaniv, D. Hashimoto, Q. Dou, X. Luo, J. McLeod and D. Sarikaya: 1) *Brandao et al*. proposed a hierarchically aggregated pyramid network for real-time stereo matching; 2) *Ozawa et al*. addressed the generation of synthetic laparoscopic images for machine learning based surgical instrument segmentation from laparoscopic videos; 3) *Mehrfard et al*. systematically compared a wide range of virtual reality (VR) head mounted displays technologies and designs; 4) *Mehrfard et al*. studied the effectiveness of VR based training for surgical robot setup; 5) *Mohamed et al*. addressed the stabilising visualisation in virtual colonoscopy methods; 6) *Gu et al*. presented the design and feasibility analysis of a marker less image-based registration pipeline using Microsoft HoloLens 1 to guide glenoid drilling during total shoulder arthroplasty; 7) *Félix et al*. proposed a marker less computer aided surgery solution for total knee arthroplasty; 8) *Robu et al*. studied the real-time tracking of multiple surgical tools; 9) *Kadkhodamohammadi et al*. proposed a solution to record open surgical procedures using head-mounted cameras: 10) *Mercader et al*. suggested the joint contact area visualisation during recorded flexion and extension of the knee to improve the understanding of the knee kinematics before and after open orthopaedic surgery; 11) *Kondo* proposed a solution for surgical tool detection in laparoscopic surgical video; 12) *Tyrrell and Holden* addressed the analysis of ultrasound video for skill level assessment in FAST ultrasound; 13) *Rojas-Muñoz et al*. proposed an artificial intelligent system for trauma surgery; and 14) *Martin-Gomez proposed* an augmented reality (AR) based system for patient support during radiation oncology Intervention; and 1) *Cartucgo et al*. presented a tool to generate computer vision datasets for robotic surgery; 2) *Zörnack et al*. studied how surface transparency modes affect task performance in VR; 3) *Lampreave et al*. addressed assisted electrocardiogram interpretation using an artificial intelligence enabled AR headset; 4) *Hayashi et al*. proposed a solution to assign station numbers to abdominal lymph nodes in computer tomography (CT) volumes for assisting gastric cancer surgery; 5) *Groves et al*. presented a neck central line needle insertion guidance system that renders on a 2D monitor 3D ultrasound surface reconstructions of the carotid artery and internal jugular vein, a tracked model of the needle, and needle trajectory; 6) *Meshgin and Kersten-Oertel* suggested a system that allows multiple sclerosis patients to visualise injection sites with the help of an overlaid AR grid; 7) *Rahman et al*. described a semi-autonomous robot teleoperation environment for surgery; 8) *Joeres et al*. suggested two registration methods in order to achieve natural 3D interaction for laparoscopic AR registration; 9) *García-Mato et al*. discussed the evaluation of an AR system to guide surgeons during craniosynostosis surgery; 10) *Snyder et al*. presented and evaluated a prototype device for rendering texture; 11) *Haouchine et al*. suggested an image guided neurosurgical system to optimise the craniotomy opening; 12) *Edwards et al*. addressed the visual kinematic force estimation in

robot assisted surgery; 13) *Tse et al*. proposed a post-processing super-resolution reconstruction algorithm for the semi-automated isotropic reconstruction of non-isotropically acquired musculoskeletal MR images; 14) *Luppariello et al*. described a method to provide quantitative, 3D high-resolution data about femur bone density variations from CT images; and 15) Scott et al. proposed an automatic method for 2D/3D registration of cardiac ultrasound and CT images.

In the following issue, there were 10 articles: 1) *Bidgoli et al*. addressed the automatic diagnosis of dental diseases in panoramic radiographic images; 2) *Eeden and Plessis* studied the use of mathematical data modelling of transmission data in order to act as a virtual bowtie filter in image enhancement; 3) *Sagandykova et al*. presented a patient specific computational fluid dynamics simulation of aerodynamics for nasal pathology; 4) *Fishman et al*. addressed the accuracy validation of a 3D morphable model used to estimate face shapes from 2D photographs for craniofacial surgical planning; 5) *Shauly et al*. studied the parotid salivary ductal system segmentation and modelling in sialography cone-beam CT scans; 6) *Díaz et al*. suggested a mobile solution to support automatic blood sample generation; 7) *Irshad et al*. proposed a method for an improved differentiation of retinal vessels in fundus images; 8) *Kumar and Sudharsan* discussed the enhancement of thermal images of pregnant women for foetal growth monitoring; 9) *Barkaoui et al*. revied studies where medical imaging techniques were combined with the finite element method to investigate bone mechanical behaviour; and 10) *Noshad et al*. proposed a method for detection of COVID-19 cases using chest X-ray images.

In the last issue of Volume IX, 16 articles were included: 1) *Forghani et al*. proposed a method for hypertrophic cardiomyopathy and hypertensive heart disease diagnosis using echocardiography and electrocardiography; 2) *Zarei et al*. suggested a segmentation method for breast cancer detection using infrared thermal images; 3) *Siddiqi et al*. described an image enhancement algorithm for improving the quality of CT images for liver cancer diagnosis; 4) *Hakkoum et al*. compared interpretability techniques for artificial neuronal networks breast cancer classification; 5) *Verma and Srivastava* studied the problem of human pose estimation in images; 6) *Tosta et al*. presented the evaluation of texture features extracted from neoplastic nuclei for the classification of lymphomas images; 7) *Little et al*. examined the differences in lung anatomy between the supine and lateral decubitus positions; 8) *Clement et al*. presented an automated method to segment spinal osteoblastic metastases in micro CT images; 9) *Farouki et al*. proposed an algorithm for real time venipuncture needle guidance based on optical coherence tomography; 10) *Yildirim and Çinar* addressed the classification of human movements for interpreting and describing human activities in images; 11) *Mezni et al*. proposed a solution for the automated identification of spectral domain OCT derived macular diseases; 12) *Miranda-Oliveira et al*. studied the accuracy of a free 3D camera system using the Ariel performance system; 13) *Mahmoudi et al*. addressed the mitral valve leaflets segmentation in CT images; 14) *Bollipo and Kadambari* studied the classification and prediction of Parkinson's disease onset using data gathered from the Parkinson's progression markers initiative data repository; 15) *Tripathi and Neeraj Sharma* proposed a solution for denoising MR images; and 16) *Vicini and Sabick* studied the use of motion capture coupled ultrasound sensors to determine scapular position.

Once more, I would like to thank the members of the Advisory and Editorial Boards whose recognition is crucial for the wonderful acceptation of the Journal by the peers. Also, a special recognition to each of the four Associated Editors for continuing helping me manage the Journal so smoothly. I feel honoured to have such group of reputed researchers cooperating with me in the handling of all contributions received by the Journal. My appreciations also go to the very professional members of the Taylor & Francis Group that have been working with me and supporting me in the management of the Journal.

Since its lunching in 2013, *'Computer Methods in Biomechanics and Biomedical Engineering: Imaging Visualization'* has been revealing its potential to gather distinguished authors and readers. All efforts will continue to disseminate the Journal among related communities. As I always emphasis, the authors and the readers are critical for the achievement of any journal, and therefore, I am sure that you have had a central role in the success of our Journal; thank you very much.

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