



Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization

ISSN: 2168-1163 (Print) 2168-1171 (Online) Journal homepage: <https://www.tandfonline.com/loi/tciv20>

Editorial Message from the Editor-in-Chief

João Manuel R. S. Tavares

To cite this article: João Manuel R. S. Tavares (2020) Editorial Message from the Editor-in-Chief, Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 8:1, 1-2, DOI: [10.1080/21681163.2019.1708015](https://doi.org/10.1080/21681163.2019.1708015)

To link to this article: <https://doi.org/10.1080/21681163.2019.1708015>



Published online: 07 Jan 2020.



Submit your article to this journal [↗](#)



Article views: 31



View related articles [↗](#)



View Crossmark data [↗](#)



Editorial Message from the Editor-in-Chief

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

The Journal has continued its aims to present innovative methods and applications related to imaging and visualization of biomedical data and to support the establishment of links among researchers, technology developers and end-users.

The Journal received 128 articles from January to mid December 2019, from a total of 31 countries: Algeria, Australia, Bangladesh, Brazil, Canada, China, Czech Republic, Egypt, France, Germany, Hungary, India, Indonesia, Iran, Italy, Japan, Korea, Malaysia, Morocco, New Zealand, Nigeria, Pakistan, Poland, Portugal, Romania, Saudi Arabia, Spain, Switzerland, Tunisia, Turkey, United Kingdom, and the United States. Once again, this confirms the good worldwide acceptability of the Journal.

In the 1st Issue of Volume VII, 9 articles were published: 1) *Saroja and Priyadharson* presented a method for detecting colon cancer from biopsy samples in the presence of outliers; 2) *Suman et al.* addressed the segmentation and reconstruction of cervical muscles; 3) *Nguyen et al.* studied the application of consumer-level virtual reality technologies for eye fundus examination; 4) *Bandyopadhyay et al.* proposed a technique to extract the underlying structure of blood vessels from retinal images; 5) *Mazlan and Yazid*, suggested the segmentation of retinal blood vessels for diabetic retinopathy detection; 6) *Simu et al.* studied the segmentation of phalanges from hand radiographs for bone age assessment; 7) *Marin et al.*, proposed the computational enlargement of the field of view in order to 3D visualise all paths of hand bones and tendons in high-resolution magnetic resonance (MR) images; 8) *Ramudu and Babua* proposed a new formulation for selective segmentation with a level set model for biomedical MR and computed tomography (CT) images; and 9) *Willing* investigated the efficacy of optimising the shape of custom distal humeral hemiarthroplasty implants.

In the following issue, there were 10 articles: 1) *Al-Naji et al.* presented the possibility of extracting human cardiopulmonary signals from different regions of interest, mainly face, forehead, head, palm, wrist, arm, neck, leg and chest using video imaging analysis; 2) *Ebrahimi et al.* studied the assessment of quantitative measurements of spine shape parameters on planar X-rays for clinical applications; 3) *Elbalaoui and Fakir* proposed an automated method for detection of exudates in digital fundus images; 4) *Yepes-Calderon et al.* suggested a picture archiving and communication system vehicle that enables the use of analytic tools in medical networks; 5) *Gundapaneni et al.* tackled the simulation of ankle joint kinematics in the sagittal plane using passive imaging data; 6) *Mengarelli et al.* proposed an interactive tool for the analysis of muscular recruitment during walking tasks; 7) *Santos et al.* investigated the assessment of the

quality of digital imaging and communication for metadata in medicine related to medical imaging stakeholder characterisation; 8) *Badgajar and Deore* focused the recognition of exudates in fundus retinal images of diabetic patients; 9) *Naik et al.* investigated the segmentation of the common carotid Artery wall and the estimation of the intima media thickness in B-mode longitudinal ultrasound images; and 10) *Chiu et al.* presented a comparison of automated post-processing techniques for the assessment of body surface area from 3D photonic scans.

The third issue, which includes 11 articles, was devoted to the 2nd and 3rd editions of the MICCAI workshop on *Deep Learning in Medical Image Analysis*, organized by G. Carneiro, J.M.R.S. Tavares, A.P. Bradley, J.P. Papa, J.C. Nascimento, J.S. Cardoso, Z. Lu and V. Belagiannis: 1) *Akselrod-Ballin et al.* presented a new computational system for the detection and classification of masses in breast mammography; 2) *Yoo et al.* used convolutional neural networks to extract latent multiple sclerosis lesion patterns that are associated to definite multiple sclerosis using lesion masks segmented from baseline MR images; 3) *Akbar et al.* developed a method for preventing overfitting in convolutional neural networks; 4) *Li and Shen* proposed a smaller and better deep-learning network for HEp-2 cell classification; 5) *Sathish and Elango* proposed a radial basis neural network based on an exponential cuckoo search algorithm for the automatic classification of tumours in brain MR images; 6) *Sharma and Aggarwal* presented a new approach for the retrieval of CT and MR images using orthogonal Fourier-Mellin moments; 7) *Schneider et al.* tackled the automatic segmentation of the thumb trapeziometacarpal joint; 8) *Ourahmoune et al.* presented a virtual environment for ultrasound examination learning; 9) *Ahmad et al.* investigated the use of imaging data and simulation models to reduce human and animal trials for the development and optimisation of surgical methods and materials; 10) *Rashid et al.* proposed an automatic pathology approach to detect prostatic adenocarcinoma based on morphological analysis of high resolution whole mount histopathology images of the prostate; and 11) *Dhar et al.* proposed the cross-wavelet transform as a new prototype for the classification of electroencephalogram signals.

This special issue is a good example to show that the Journal is always open for suggestions of special issues with the goal to bring together contributions on fresh topics, solutions and applications concerning imaging and visualization.

The 4th issue includes 12 articles and is devoted to the 4th *International Workshop on Biomechanical and Parametric Modeling of Human Anatomy*, organized by S. Fels and I. Stavness: 1) *Woo et al.* presented a statistical multimodal atlas of 4D tongue motion during speech from tagged and cine magnetic resonance images; 2) *Michiwaki et al.* developed a realistic organ model based on actual medical images and validated it using

swallowing simulation; 3) *Kamiya et al.* demonstrated the visualization of changes in physical values of food bolus during swallowing to correlate the movement of human organs and bolus flow configuration; 4) *Wang et al.* studied the simulated volume loss in the base of tongue in a virtual swallowing model; 5) *Rakhsha et al.* proposed a simulation framework to predict cartilage surface loading during walking; 6) *Haworth et al.* developed methods to support a state-of-the-art computer-based speech therapy system; 7) *Hossain and Grill* proposed a differential detection scheme to monitor the variations of the velocity of longitudinal polarised ultrasound waves travelling in contracted and relaxed human muscle; 8) *Dadashi et al.* proposed a new potential X-ray CT imaging contrast agent; 9) *Loja et al.* studied the use of 3D anthropometric data for the modelling of customised head immobilisation masks; 10) *Athawale et al.* proposed a statistical framework for quantification and visualisation of positional uncertainty in deep brain stimulation electrodes; 11) *Pruthi et al.* presented a modified bird swarm algorithm for edge detection in noisy images using fuzzy reasoning; and 12) *Ben-Zikri et al.* proposed a marker-free registration method for standing X-ray panorama reconstruction for hip-knee-ankle axis deformity assessment.

The last two issues of Volume VII were devoted to the *VI ECCOMAS thematic conference on computational vision and medical image processing (VipIMAGE)*, organized by J.M.R.S. Tavares & R.N. Jorge, and includes 23 articles: 1) *Lauzeral et al.* discussed the shape parameterization of bio-mechanical finite element models built, based on medical images; 2) *Lanza et al.* suggested a novel space-variant regularisation term for variational image restoration; 3) *Seixas et al.* presented an analysis of the skin temperature distribution in patients with diabetic foot and transthyretin familial amyloid polyneuropathy; 4) *Placidi et al.* proposed a new paradigm based on self-induced emotions for driving brain-computer interfaces; 5) *Milicchio et al.* studied transporting deformations from one template to another one in terms of shape analysis; 6) *Witherow et al.* presented an image processing approach to detect extent of floodwater on inundated roadways from image data acquired and generated by mobile consumer devices; 7) *Punta et al.* studied the implementation of scaling functions and wavelets based on Generalized Sturmian Functions; 8) *Perre et al.* used convolutional neural networks and transfer learning to classify lesions in mammograms; 9) *Paulano et al.* studied the simulation of realistic fracture cases on geometric models representing bone structures; 10) *Binaghi et al.* investigated a new representation of the results obtained by functional magnetic resonance imaging; 11) *Ferreira et al.* performed a patient-specific gamma-index analysis to assess ^{99m}Tc -MAA as a predictor for ^{90}Y glass microspheres liver radio-embolisation dosimetry; 12) *Almeida et al.* evaluated image processing techniques used to evaluate adhesive removal protocols

recommended by adhesive manufacturers; 13) *Gao et al.* used sub-region intensity distribution and a robust non-rigid intensity transforming function in order to standardize the intensities of MR images; 14) *Destrez et al.* addressed the computational registration of 3D dental mesh based on photographs of a patient's mouth; 15) *Zhang et al.* proposed the extraction of biomarkers to quantify vascular changes in retina-related diseases; 16) *Silva et al.* developed a computational framework for promoting physical activity in a Boccia game scenario; 17) *Casanova et al.* discussed the use of infrared thermography as a complementary technique to conventional imaging techniques in paediatrics; 18) *Demino et al.* compared ^{90}Y -labelled glass microspheres liver radio-embolisation dosimetry against the estimated dosimetry obtained from pre-treatment ^{99m}Tc -MAA single-photon emission CT images; 19) *Carbonell et al.* presented aspects of a protocol for a diabetic population by obtaining and evaluating thermographic images following thermal stress and mechanical stress; 20) *Zenteno et al.* described a comparative study between photogrammetric and 3D scanner-based volume estimation of small skin ulcers; 21) *Shanker and Bhattacharya* proposed the segmentation of brain tumours using hybrid clustering and a hierarchical centroid shape descriptor; 22) *Dahiya et al.* introduced a new multidimensional automatic edge detection approach based on shape priors and principal component analysis; and 23) *Matos et al.* studied the applicability of passive 3D reconstruction for motion tracking in a rehabilitation context using a stereo camera.

Again, I would like to thank the members of the Advisory and Editorial Boards whose recognition is crucial for the excellent acceptance of the Journal by the international community. Also, a special recognition to each of the four Associated Editors for continuing to help me manage the Journal so effortlessly. I am privileged to have such an excellent group of eminent researchers collaborating with me. My appreciations also go to the highly professional members of the Taylor & Francis Group that work with me.

"*Computer Methods in Biomechanics and Biomedical Engineering: Imaging Visualization*" has demonstrated its exceptional potential to gather remarkable authors and readers. All efforts will continue to disseminate the Journal among related communities and attract other notable colleagues. As I always stress, the authors and the readers are decisive for the success of any journal, and therefore, I am sure that you have and have had a central position in the success of our Journal; thank you very much.

João Manuel R. S. Tavares
(Editor-in-Chief)

 <http://orcid.org/0000-0001-7603-6526>