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REVIEW

Current trends in medical image registration and fusion



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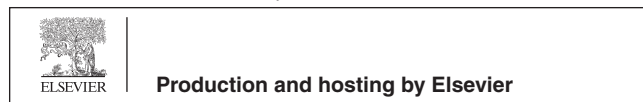
Abstract Recently, medical image registration and fusion processes are considered as a valuable assistant for the medical experts. The role of these processes arises from their ability to help the experts in the diagnosis, following up the diseases' evolution, and deciding the necessary therapies regarding the patient's condition. Therefore, the aim of this paper is to focus on medical image registration as well as medical image fusion. In addition, the paper presents a description of the common diagnostic images along with the main characteristics of each of them. The paper also illustrates most well-known toolkits that have been developed to help the working with the registration and fusion processes. Finally, the paper presents the current challenges associated with working with medical image registration and fusion through illustrating the recent diseases/disorders that were addressed through such an analyzing process.

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Contents

1. Introduction	100
2. The general image fusion procedure	101
2.1. Image registration	101
2.2. Feature extraction	103
2.3. Decision labeling	103
2.4. Semantic equivalence	103

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2.5.	Radiometric calibration	103
2.6.	Image fusion	103
3.	Medical image registration	103
3.1.	Dimensionality	104
3.2.	Registration basis	104
3.3.	Nature of the transformation	105
3.4.	Transformation domain.	107
3.5.	Interaction	107
3.6.	Modalities	107
3.7.	Subject.	108
4.	Medical image fusion.	108
4.1.	Pixel fusion methods.	108
4.2.	Subspace methods.	109
4.3.	Multi-scale methods	109
4.4.	Ensemble learning techniques.	109
4.5.	Simultaneous Truth and Performance Level Estimation	109
5.	Medical imaging modalities and image fusion	109
5.1.	Radiology	110
5.1.1.	X-ray Computerized Tomography	110
5.1.2.	Magnetic Resonance Imaging	112
5.1.3.	Emission-Computed Tomography	112
5.1.4.	Ultrasound imaging	112
5.1.5.	Other medical imaging modalities	112
5.2.	Visible light photography	113
5.2.1.	Dermatology	113
5.2.2.	Endoscopy.	113
5.2.3.	Other organs/specialties	113
5.3.	Printed signals/waves	113
5.3.1.	Electrocardiogram (ECG)	113
5.3.2.	Electroencephalography (EEG)	114
5.3.3.	Electromyography (EMG).	116
5.3.4.	Other methods	116
5.4.	Microscopy	116
5.5.	3D reconstruction	116
6.	Software tools.	116
6.1.	Insight segmentation and registration toolkit (ITK)	116
6.2.	Elastix	116
6.3.	Advanced Normalization Tools (ANTs)	116
6.4.	NiftyReg	116
6.5.	Medical Image Processing, Analysis, and Visualization (MIPAV)	116
6.6.	Medical imaging toolkit (MITO)	118
6.7.	OsiriX	118
7.	Current diseases based registration/fusion work	118
7.1.	Medical image registration studies	118
7.2.	Medical image fusion studies	120
8.	Discussion	120
8.1.	Medical modality challenges	120
8.2.	Methods/techniques challenges.	120
8.3.	Dataset challenges.	120
8.4.	Human being challenges	121
9.	Conclusion	121
	References	121

1. Introduction

The ultimate goal accompanied by image analysis is to extract useful underlying information contained in the processed images. Therefore, numerous processes can take place such

as image registration and image fusion. The intent of image registration is to align images with respect to each other. The input for this process is two images: the original image is known as the reference image while the image that will be aligned with the reference image is known as the sensed image.

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