Abstract

Echocardiogram is one of the easiest and widely employed methods that uses ultrasound to evaluate heart muscle, heart valves, and risk for heart disease. Heart failure (HF) can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill with or eject blood. Echocardiography represents "the gold standard" in the assessment of left ventricle LV systolic and diastolic dysfunction. Left ventricular dimensions, volumes and wall thicknesses are echocardiographic measurements that are widely used in clinical practice and research. To obtain accurate linear measurements from the echocardiography accurate segmentation of the LV is essential. This paper proposes a method to segment the left ventricular border automatically on the 3-dimensional (2D+t) echocardiogram, where \textquoteleft t\textquoteright is the time. The 2D image is obtained by extracting the frames from the video of echocardiogram which is further processed to detect the edges of the left ventricle and finally the edge detected frames are converted back into video which will help the cardiologist to visualize the left ventricle in motion. The obtained results are efficient and can be utilized for the purpose of detecting various medical parameters.
- A Bosnjak, G Montilla, V Torrealba, Medical Images Segmentation using Gabor Filters applied to Echocardiographic Images0276-6547/981998 IEEE.
Automatic Border Detection of the Left Ventricle in Parasternal Short Axis View of Echocardiogram


Index Terms

Computer Science
Signal Processing

Keywords

Echocardiogram  Left ventricular  automatic detection  segmentation.