Abstract

The digital medical images in real world are intensity images that carry less information, more noise, less resolution and poor illumination levels. In such cases the existing retrieval system fails in retrieving the relevant images. This is because the chosen similarity features in those systems are not effective for the above types of image retrieval. To address these issues the
present paper proposed new similarity texture feature derived from the novel idea of Basic Texture Unit (BTU), Reduced Texture Unit (RTU) and Fuzzy based Texture Unit (FTU). The Texture Unit (TU) extracts textural information of an image with a more complete respect of texture characteristics in all the eight directions instead of only one displacement vector. In most of the real images two neighboring pixel may not have the same value due to the different processes of capture, illumination levels, poor resolutions or digitations. This criterion is met in the proposed BTS, RTS and FTS derived from BTU, RTU and FTU respectively. The BTU, RTU and FTU gives only ternary, binary and five values respectively to a texture element and TU ranges 0 to 6561, 0 to 255 and 0 to 2020 respectively. The similarity features are extracted on BTU, RTU and FTU schemes and a good comparison is made. The experimental results on MRI and Orthopedics images indicate reliability, feasibility and efficacy of the proposed methods.

Reference

- F. Korn, N. Sidiropoulos, C. Faloustos, E. Siegel, and Z. Protopapas. Fast and effective
- Tristan Glatard, Johan Montagnat, Isabelle E. Magnin CREATIS (CNRS-Inserm), INSA, Texture Based Medical Image Indexing and Retrieval: Application to Cardiac Imaging, MIR’04, October 15–16, 2004, New York, New York, USA

**Index Terms**

Computer Science  
Pattern Recognition

**Key words**

Medical imaging  
texture  
texture spectrum  
similarity feature  
image retrieval