

基於資訊融合技術之乳房核磁共振影像的腫瘤檢測

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摘要

本論文提出一個利用空間域分析、切片間分析、紋理分析及多模式資訊融合所構成的系統，實現在核磁共振乳房影像上之腫瘤區域檢測。空間域分析是根據腫瘤區域內像素灰階值之亮度和腫瘤區域之面積大小進行評估，並且提出一個基於Ellipse Fitness之區域生長演算法則，找出較精確之腫瘤區域。切片間分析是基於連續特性驗證腫瘤區域之靜態特性。紋理分析是利用腫瘤區域的特殊紋理，提升腫瘤區域的識別率，主要是擷取小波領域及共發生矩陣之相關統計特徵作為紋理性質之描述子，配合類神經網路的辨識，篩選可疑之腫瘤區域。集合空間域分析、切片間分析及紋理分析所提供的物件亮度資訊、物件連續資訊、物件紋理資訊及物件大小變化資訊，結合資訊融合技術，建構出乳房腫瘤檢測系統。實驗結果顯示，本論文所提出的系統可以有效地檢測出乳房腫瘤區域。

關鍵詞：核磁共振；腫瘤檢測；資訊融合；紋理分析

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