應用轉換法則與分割之影像合成

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摘 要

影像合成應用的領域非常的廣泛，舉凡在航空輔助中引導飛行物降落，在醫學診斷中的輔助診斷系統，在來源失焦的影像中合成出清晰的影像，在軍事或安全上的影像檢查等，普遍性與重要性都與日俱增。一張良好的合成影像就是從不同的來源影像中找出各種重要的特徵，並加以整合，使能擷取出各個來源影像的重要資訊。在合成由不同感測器所得的影像，有相對較佳的合成法則可使用。本文在來源影像失焦模糊部分提出以邊界偵測作為前處理，先將來源影像中重要特徵或活動量大的部分先行取出，再將來源影像的非邊界或活動量小的部分予以轉換，以區塊合成取出重要的係數，經過反轉換得到重建影像。由此前處理與轉換合成的方法，效能可以大幅提升。對於航空輔助與醫學診斷為例，使用餘式小波轉換和區域能量特徵選取法來做影像合成法則，主要考量在能掌握住各個來源影像的重要資訊，包含光亮及陰暗二種截然不同的特徵，由合成圖中可以清楚了解所有來源影像的特徵。本文所提出方法的處理結果與效能將於模擬單元中展示。

關鍵詞 : 邊界偵測 ; 離散餘弦轉換 ; 小波轉換 ; 影像合成 ; 餘式小波轉換

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