無失真向量量化索引值壓縮法及其應用於資訊隱藏技術之研究

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摘 要

就目前我們所知道已被提出的無失真向量量化索引值壓縮法中，大部份都不適用於各種複雜度的影像。因為是無失真壓縮，所以應用在較複雜的影像下的壓縮率可能會降低，甚至會膨脹。因此，我們提出了一個結合動態樹狀編碼法(dynamic tree-coding, DTC)和改良過的循序搜尋編碼法(modified search order coding, MSOC)的方法來對輸出的索引值再進行一次無失真壓縮。主要的想法為利用目前將被編碼的區塊與它的左方或上方區塊之間存有極大的空間關聯性，根據這個特徵來使用不同的編碼策略。實驗結果顯示，我們提出的方法可以有效率的針對各種複雜度影像和不同大小的編碼簿更進一步的降低位元率。相較於其他方法，此方法簡單又有效率，也因為這個特性使它可以被應用於硬體實作上。　　為了進一步的增加影像隱藏的頻寬效率，本篇論文也提出了植基於所提出的無失真向量量化索引值壓縮法的資訊隱藏技術。實驗結果顯示，此方法可在壓縮碼中藏入大量的機密資訊並且不會造成機密資料或掩護影像的失真。在解碼端上能幾乎同時的重建影像和取出藏入的機密資料。

關鍵詞 : 無失真向量量化索引值壓縮法，動態樹狀編碼法，循序搜 尋編碼法，資訊隱藏

目錄

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